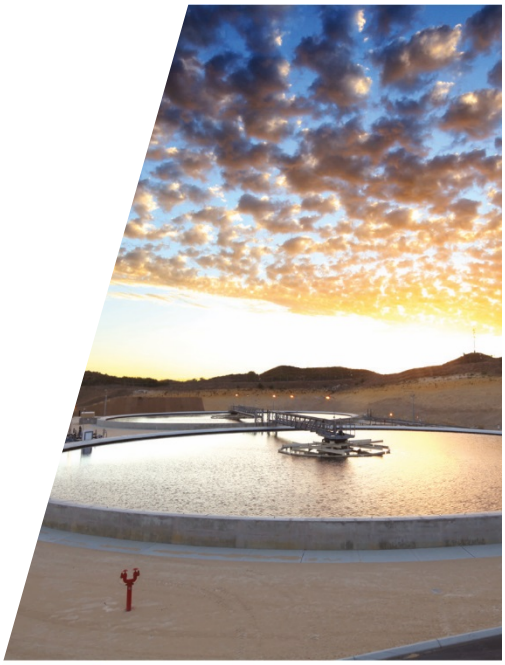
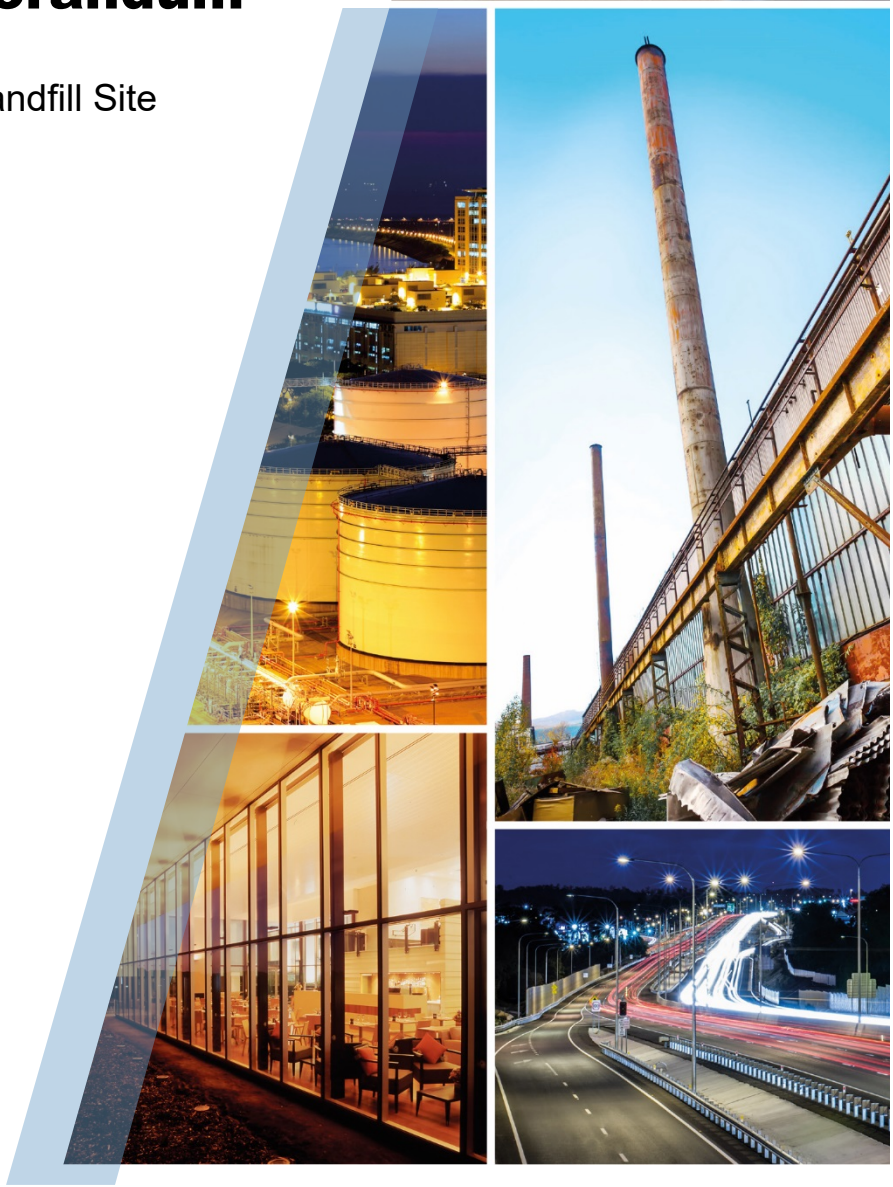


Site Characterization Technical Memorandum

Quarry Pond Investigation
South Dayton Dump and Landfill Site
Moraine, Ohio



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1. Introduction

This Site Characterization Technical Memorandum (SCTM) report presents the results of work completed to date for the Quarry Pond investigation at the South Dayton Dump and Landfill Site (Site). The Site is located on the west side of Dryden Road (also known as Springboro Pike), at 1901 through 2153 Dryden Road and 2225 East River Road in Moraine, Ohio. Figure 1.1 shows the Site location. Figure 1.2 shows the Site layout and topography.

GHD has prepared this SCTM report on behalf of the Respondents to the Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study for Operable Unit (OU)1 and OU2, United States Environmental Protection Agency (USEPA) Docket No. V-W-16-C-011 (Respondents).

1.1 Overview

This SCTM report provides the Quarry Pond investigation results for work activities conducted from March 2018 to October 2019, which includes completion of a hydrographic survey (March 2018) and two sampling events (September 2018 and October 2019) for collection of surface water and sediment samples.

The Quarry Pond investigation was completed in accordance with the phased approach detailed in the Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2 (GHD, September 20, 2017) (RI/FS Work Plan), approved by the USEPA on September 22, 2017.

Section 5.4 of the RI/FS Work Plan details the investigation objectives as follows:

- Characterization of surface water quality as input to the Human Health Risk Assessment (HHRA) and the Ecological Risk Assessment (ERA)
- Characterization of sediment quality as input to the HHRA and ERA
- Determine whether the "foreign objects" in the Quarry Pond may be sources of contaminants to the Quarry Pond

1.2 Report Organization

The SCTM report is organized as follows:

- Section 1 is the introduction
- Section 2 provides information regarding field investigation activities
- Section 3 presents the analytical results for surface water and sediment sampling conducted in 2018 and 2019
- Section 4 presents an assessment of the analytical data and comparison to screening levels
- Section 5 presents a summary of the investigation results
- Section 6 provides references

2. Field Investigation Activities

2.1 General

The Quarry Pond field investigation included the following:

- Completion of a hydrographic survey in March 2018 to determine bathymetry and to identify "foreign objects" in the base of the pond (as discussed in Section 2.2).
- Collection of surface water and sediment samples during the September 2018 sampling event (as discussed in Section 2.3).
- Collection of surface water and sediment samples during the October 2019 sampling event (as discussed in Section 2.4).

Other aspects of the RI field program reported separately include the soil/fill investigation (GHD, July 17, 2019) and the groundwater investigation (GHD, September 30, 2019).

2.2 Hydrographic Survey

In March 2018, J.F. Brennan Co. Inc. (Brennan) conducted the hydrographic survey at the Quarry Pond. The survey included use of a boat equipped with a multi-beam echo sounder (MBES) and side-scan sonar (SSS) to produce a bathymetry map and images of notable features indicated by the survey data. The results of the hydrographic survey are included in a letter from GHD to the agencies dated June 11, 2018, provided in Appendix A.

The following summarizes the results of the hydrographic survey:

- The elevation of the base of the Quarry Pond ranges from approximately 675 feet at the deepest point to approximately 713 feet at the shoreline.
- The Quarry Pond has steep banks with the deepest depths in the western section, and the shallowest depths to the south/ southwest and northeast of the island.
- Scattered debris, both manmade and natural was located throughout the Quarry Pond.
- The objects identified by Brennan, based on the hydrographic survey, are classified as: suspected vehicle/ vessel; potential boulder; potential drum; potential log; potential logs and/or boulders; potential manmade debris; potential tire; potential vertical manmade structure; and suspected debris/ rubble field.

Maps that illustrate the bathymetry information and the location and type of objects detected by the survey are included in Appendix B. The imagery for Quarry Pond features are included in Appendix C.

GHD reviewed the hydrographic survey information with respect to the proposed surface water and sediment sampling locations shown on Figure 5.3 of the RI/FS Work Plan. This resulted in adjustments to some of the proposed sampling locations as identified in GHD's June 11, 2018 letter. GHD made additional adjustments to address agency comments on the proposed sampling locations received on July 10, 2018.

2.3 2018 Sampling Event

GHD conducted inspection and sampling activities at the Quarry Pond during the period of September 18 to 26, 2018. GHD reported the 2018 field investigation activities and results to the agencies in April 2019 (GHD, April 26, 2019), also provided below.

2.3.1 Field Sampling Activities

GHD field staff mobilized to the Site on September 18, 2018. Prior to sampling, GHD performed a visual inspection of the perimeter pond banks and the shore of the small island via boat. The purpose of the inspection was to document the presence of overland flow or pond inlets such that surface water and/or sediment sample locations could be adjusted and moved accordingly. Minor channelization and evidence of potential overland flow was identified at the northwest corner of Parcel 3753, near one of the proposed surface water sample locations (SW-7). The sampling activities discussed below were completed with the use of two Jon boats secured together to create a stable platform, and outfitted with electric trolling motors.

The sampling program was conducted between September 18 and 26, 2018. Specifically, the surface water samples were collected between September 18 and 20, 2018 and the sediment samples were collected on September 20 and 21, 2018, and between September 24 and 26, 2018. Daily temperatures varied between approximately 70 and 90 degrees Fahrenheit. In general, the weather was dry with precipitation occurring on September 24 and 25, 2018. The Quarry Pond surface water elevation measured on September 26, 2018 was 710.4 feet. See Section 2.5 for water level measurement information.

The surface water and sediment sampling locations are shown on Figure 2.1.

2.3.2 Surface Water Sampling Procedures

Field equipment was prepared and inspected daily prior to the commencement of sampling activities. Field parameters for surface water samples were measured using YSI 6920 multi-parameter sonde instrument, which was calibrated daily during surface water sampling activities using standard solution and in accordance with the manufacturer's specification. Specifically, the pH, turbidity, conductivity, and oxidation-reduction potential (ORP) sensors were calibrated and confirmed to be operating satisfactorily.

Fifteen surface water samples (plus two duplicate samples) were collected from 10 locations within the Quarry Pond. Shallow surface water samples were collected from five feet below the water surface except where the water depth was less than seven feet deep, in which case the sample was collected at the midpoint of the water column. Depth surface water samples were collected five feet above the base of the Quarry Pond at five of the ten locations. Surface water sampling locations are shown on Figure 2.1.

A Leica GS20 global positioning system (GPS) device was used to navigate to predetermined surface water sampling locations. Upon arrival at the proposed sampling location, a series of small anchors were carefully deployed to secure the vessel. Anchors were lowered to the pond substrate carefully and slowly to mitigate the agitation of pond sediment prior to sample collection. Once the vessel was secured, another anchor was deployed with a tape measure that was used to measure pond depth at the sample location.

The YSI 6920 sonde was connected to a tape measure such that the sonde could be lowered to the proposed sample depth, and field parameters could be measured at/near the point of sample intake. Dedicated (i.e., new, single-use/disposable) 0.25-inch diameter polypropylene peristaltic pump tubing was also connected to the sonde cable, adjacent the sonde sensors for sample collection. The YSI 6920 sonde (with tubing attached) was lowered to the proposed sample depth and field parameters were recorded. Surface water samples were then collected using a peristaltic pump drawing through the dedicated tubing at the proposed sample depth. All sample bottles were direct filled from the peristaltic pump tubing following an initial purge of the tubing and/or filter. For sampling parameters that required field filtration (e.g. dissolved metals), a 0.45-micron in-line field filter was utilized.

Observations with respect to sample characteristics (odor, color, clarity, and the presence of suspended solids) were also recorded for each surface water sample. Sample collection details and surface water field parameter data are summarized on Table 2.1 and Table 2.2, respectively.

Two surface water sample duplicates and one surface water matrix spike/matrix spike duplicate (MS/MSD) sample were collected for quality assurance/ quality control (QA/QC) purposes. Equipment blanks were not required for surface water sampling as all sampling equipment that was exposed to sample water was new, single-use/dedicated. Sample containers were placed in bubble wrap and plastic bags and arranged in lab-supplied coolers with loose ice. Samples were delivered daily to the Eurofins TestAmerica depot in Moraine, Ohio.

All surface water samples were submitted to Eurofins TestAmerica for laboratory analysis of Target Compound List (TCL) volatile organic compounds (VOCs), (including 1,2-Dibromo-3-chloropropane and 1,2-Dibromoethane), TCL semi volatile organic compounds (SVOCs), TCL pesticides and polychlorinated biphenyls (PCBs), TCL herbicides, Target Analyte List (TAL) metals (total and dissolved), hardness, total dissolved solids (TDS), cyanide (total), low level mercury, methyl mercury, and general chemistry parameters (chloride, fluoride, nitrate, nitrite, sulfide, and sulfide).

2.3.3 Sediment Sampling Procedures

Twenty-seven sediment samples (plus three duplicate samples) were collected from the 20 proposed locations within the Quarry Pond, including 19 surficial sediment samples and eight deeper sediment samples. Surficial samples were collected from the top six inches of substrate using a ponar dredge. Deeper samples were collected from 6 to 18 inches below the substrate surface (BSS) using a modified AMS multi-stage sampler with new, single-use polycarbonate liners and core catchers. Sediment sampling locations are shown on Figure 2.1.

A Leica GS20 GPS was used to navigate to predetermined sediment sampling locations. Upon arrival at the proposed sampling location, a series of small anchors were carefully deployed to secure the vessel. Once the vessel was secured, another anchor was deployed with a tape measure that was used to measure pond depth at the sample location and a survey rod was used to probe the substrate to determine the presence of loose sediment. If no loose sediment was identified, the sample location was shifted approximately 10 feet, and the process was repeated. Typically, the process was completed up to three times. If no loose sediment was observed or could be recovered after the third attempt, the sample location was abandoned. Where the sample location was shifted, coordinates of the actual sample location were recorded using the GPS device. One proposed surficial sediment sample, SD-9, could not be collected due to the presence of cobble and boulders.

At some locations cores were attempted but could not be collected due to refusal or insufficient material, including SD-1, SD-10, SD-12, SD16, and SD-20.

Surficial sediment samples (0 to 6 inches) were collected using a ponar dredge that was manually lowered and retrieved over the edge of the vessel. As multiple ponar drops were required to achieve sufficient sediment sample volume, material was placed in a dedicated/disposable aluminum tray. The VOC sample containers were filled first, then the material in the tray was homogenized prior to filling the remaining sample containers (for non-VOC parameters) using a stainless steel spoon.

After each sample location was completed, the ponar dredge was rinsed thoroughly and debris was removed with a brush. After visible debris was removed, the ponar and stainless steel sampling spoons were decontaminated using Alconox and deionized water.

Deeper sediment samples (6 to 18 inches) were collected from eight locations (SD-04, SD-05, SD-06, SD-08, SD-11, SD-13, SD-14, and SD-19) using a modified AMS multistage sampler with new, single-use 1.75-inch diameter 2 or 3-foot length polycarbonate liners with core catcher. The sampler body was mounted on a series of steel rods and incrementally lowered to the substrate. The sampler body was slowly and carefully inserted into the sediment until refusal. The sampler was then slowly retrieved through the water column such that the sample remained intact within the liner. The sampler body was opened and the liner/core was removed and capped with dedicated/disposable caps until the sample was transferred to shore for processing. Cores were placed on dedicated/disposable sheets of tin foil for examination and inspection. Sample recovery with the AMS multistage sampler ranged from 15.5 to 33 inches within the sediment. All sample locations achieved a minimum of approximately 16 inches of recovery. Once removed from the liner, the 6- to 18-inch (maximum) interval was retained, while the balance of the material was discarded.

Observations with respect to sample odor, color, and presence of debris, organisms, and vegetation were recorded for each sediment sample. Sample collection details and sample observations are summarized on Table 2.3 and Table 2.4, respectively.

Three sediment sample duplicates and two sediment MS/MSD samples were collected. Two equipment blanks for equipment used to collect and composite surficial samples were collected. Equipment blanks for the AMS multi-stage sampler were not collected as all sampling equipment that was exposed to sediment was dedicated.

Equipment blanks sample bottles were filled by passing lab-supplied ultrapure water over the ponar and a stainless steel spoon and into an aluminum tray. The ultrapure water was decanted directly from the aluminum tray to sample jars.

Sample jars were placed in bubble wrap and plastic bags and arranged in lab-supplied coolers with loose ice. Samples were delivered daily to the Eurofins TestAmerica depot in Moraine, Ohio.

All surficial and depth sediment samples were submitted to Eurofins TestAmerica for laboratory analysis of TCL VOCs, TCL SVOCs (including polynuclear aromatic hydrocarbons [PAHs]), TCL pesticides and PCBs, TCL herbicides, TAL metals (including iron and manganese), mercury, cyanide (total), silver, methyl mercury, simultaneously extractable metals (SEM) for divalent metals (copper, cadmium, lead, mercury, nickel, and zinc)/acid-volatile sulfide (AVS), organic carbon, and black carbon.

2.4 2019 Sampling Event

GHD conducted sampling activities at the Quarry Pond during the period of October 2 to 4, 2019.

2.4.1 Field Sampling Activities

GHD field staff mobilized to the Site on October 1, 2019 to complete the surface water sampling program and to collect additional sediment samples. The sampling program was conducted between October 2 and 4, 2019. Specifically, the surface water samples were collected between October 2 and 3, 2019 and the sediment samples were collected on October 3 and 4, 2019. All surface water samples were collected prior to sediment samples. Daily temperatures varied between approximately 55 and 77 degrees Fahrenheit. The weather was dry with no precipitation.

The Quarry Pond surface water elevation measured on October 3, 2019 was 708.9 feet. See Section 2.5 for water level measurement information.

The October 2019 surface water and sediment sampling locations are shown on Figure 2.2.

2.4.2 Surface Water Sampling Procedures

Seventeen surface water samples (plus two duplicate samples) were collected from 12 locations (SW-1 through SW-12) within the Quarry Pond. Ten locations (SW-1 through SW-10) were replicates of the 2018 surface water sampling event while two new locations (SW-11 and SW-12) were added in the area of the 'rope swings'[1] in response to USEPA comments provided on June 7, 2019[2]. Shallow surface water samples were collected from five feet below water surface (BWS) except where the water depth was less than seven feet deep, in which case the sample was collected at the midpoint of the water column. Deeper (depth) surface water samples were collected five feet above the substrate of the Quarry Pond at five of the 12 locations. Surface water sampling locations, including approximate location of the rope swings are shown on Figure 2.2.

A Trimble RTK GPS was used to navigate to predetermined surface water sampling locations. Upon arrival at the proposed sampling location, a series of small anchors were carefully deployed to secure the vessel. Anchors were lowered to the pond substrate carefully and slowly to mitigate the agitation of pond sediment prior to sample collection. Once the vessel was secured, a final anchor was deployed with a tape measure that was used to measure pond depth at the sample location.

The YSI 6920 sonde was connected to a tape measure such that the sonde could be lowered to the proposed sample depth, and field parameters could be measured at/near the point of sample intake. Dedicated (i.e., new, single use/disposable) 0.25-inch diameter polypropylene peristaltic pump tubing was also connected to the sonde cable, adjacent the sonde sensors for sample collection. The YSI 6920 sonde (with tubing attached) was lowered to the proposed sample depth and field parameters were recorded. Surface water samples were then collected using a peristaltic pump drawing through the dedicated tubing at the proposed sample depth. All sample bottles were direct filled from the peristaltic pump tubing following an initial purge of the tubing and/or filter. For sampling parameters that required field filtration (e.g., dissolved metals), a 0.45 micron in line field filter was utilized. Sufficient water was flushed through the field filter prior to collection of the sample

1 During field activities GHD noted that the rope is severely deteriorated (non-useable).

2 Comments on the Quarry Pond Investigation Sampling Results Technical Memorandum, dated April 26, 2019.

to clear any filtration debris in the filter and sample jars were filled directly from the filter. Nitrile gloves were changed between sample locations or during sampling, as required.

Observations with respect to sample characteristics (odor, color, clarity, and the presence of suspended solids) were also recorded for each surface water sample. Sample collection details and surface water field parameter data are summarized on Table 2.1 and Table 2.2, respectively.

Two surface water sample duplicates, one field blank, and one surface water MS/MSD sample were collected for QA/QC purposes. Trip blanks were included in coolers containing VOCs. Equipment blanks were not required for surface water sampling as all sampling equipment that was exposed to sample water was new, single use/dedicated. Sample containers were placed in bubble wrap and plastic bags and arranged in lab supplied coolers with loose ice. Samples were delivered daily to the Eurofins TestAmerica depot in Moraine, Ohio.

All surface water samples were submitted to Eurofins TestAmerica for laboratory analysis of TCL VOCs (including 1,2 Dibromo, 3 chloropropane, and 1,2 Dibromoethane), SVOCs, TCL pesticides and PCBs, TCL herbicides, TAL metals (total and dissolved), hardness, TDS, cyanide (total), low level mercury, methyl mercury (dependent on mercury results), and general chemistry parameters (chloride, fluoride, nitrate, nitrite, sulfate, and sulfide).

2.4.3 Sediment Sampling Procedures

Sediment sampling was completed at seven locations within the Quarry Pond within the Quarry Pond to further delineate PAHs near two locations (SD-05 and SD-17) that were sampled in September 2018. Five step-out locations near SD17, (SD-17A through SD-17E) and two step-out locations near SD-05, (SD-05A and SD-05B) were selected based on a review of agency comments dated April 26, 2019. Ten sediment samples (plus one duplicate sample) were collected and submitted for chemical analysis including seven surficial sediment samples and three deeper sediment samples. Surficial samples were collected from the top 6 inches of substrate using a ponar dredge or a modified AMS multi-stage sampler with dedicated/disposable polycarbonate liners and core catcher. Deeper samples were collected from 6 to 18 inches BSS using a modified AMS multi-stage sampler with dedicated/disposable polycarbonate liners and core catcher. Sediment sampling locations are shown on Figure 2.2.

A Trimble RTK GPS was used to navigate to SD-05 and SD-17. Additional sediment samples were collected from two step-out locations near SD-05 (SD-05A and SD-05B) and five step out locations near SD-17 (SD-17A through SD-17E) with final locations being determined based on the presence of soft sediment. Upon arrival at a potential sediment sampling location, a series of small anchors were carefully deployed to secure the vessel. Once the vessel was secured, a rod was used to probe the substrate to determine the presence of soft sediment. If insufficient soft sediment was present to collect a sample, the sampling location was shifted until sufficient soft sediment was observed. Once the sediment sample location was determined, a final anchor was deployed with a tape measure that was used to measure pond depth at the sample location and a survey rod was used to probe the substrate to determine the depth of soft sediment. Where significant vegetation was encountered, the top of substrate was estimated as the substrate and vegetation layer was difficult to distinguish due to the density of the vegetation. GHD field staff attempted to push vegetation aside to expose the soft sediment layer with a survey rod. The final sampling location was recorded using the Trimble TRK GPS.

Surficial sediment samples (0 to 6 inches BSS) were collected two step-out locations near SD-17 (SD-17B and SD-17E) and two step-out locations near SD-05 (SD-05A and SD-05B) using a ponar dredge that was manually lowered and retrieved over the edge of the vessel. As multiple ponar drops were required to achieve sufficient sediment sample volume, material was placed in a dedicated/disposable aluminum tray. Where a deeper sediment sample was collected with the modified AMS multi-stage sampler and core catcher (i.e., at locations SD-17A, SD-17C, and SD-17D as described below), the top 6 inches of the core was used for the surficial sample. The sample was thoroughly composited and sample jars were filled using a pre-cleaned stainless steel spoon.

After each sample location was completed, the ponar dredge was rinsed thoroughly and debris was removed with a brush. After visible debris was removed, the ponar and stainless steel sampling spoons were decontaminated using Alconox and deionized water.

Deeper sediment samples (approximately 6 to 18 inches BSS) were collected at three step-out locations near SD-17 (SD-17A, SD-17C, and SD-17D) using a modified AMS multistage sampler with new, single use 1.75-inch diameter 2-foot length polycarbonate liners with a dedicated/disposable core catcher. The sampler body was mounted on a series of steel rods and incrementally lowered to the substrate. The sampler body was slowly and carefully advanced into the sediment until refusal. In general, refusal occurred due to presence of a clay or gravel/sand layer that could not be penetrated with the sampler body. The sampler was then slowly retrieved through the water column such that the sample remained intact within the liner. The sampler body was opened and the liner/core was removed and capped with dedicated/disposable caps until the sample was processed.

In general, the areas surrounding the proposed sample locations (near SD-05 and SD-17) were not conducive to sediment sampling, consisting of pockets of softer sediment material between rock, softer sediment material underlain by a hard rocky, gravel layer and areas covered by dense, submerged vegetation. GHD field staff modified the core catchers by removing various combinations of teeth to maximize recovery and attempted to remove/push aside submerged vegetation to provide unrestricted access to the soft sediment layer. Sample recovery with the AMS multistage sampler at locations SD-17A, SD-17C, and SD-17D ranged from nine to 18 inches BSS. Cores were placed on dedicated/disposable sheets of tin foil for examination and inspection. Once removed from the liner, the 0 to 6 inch interval (or recovered depth beyond 6 inches) was retained, while the balance of the material was discarded.

Observations with respect to sample odor, color, and presence of debris, organisms, and vegetation were recorded for each sediment sample. Sample collection details and sample observations are summarized on Table 2.3 and Table 2.4, respectively.

One sediment sample field duplicate and one sediment MS/MSD sample were collected. One equipment blank was collected from equipment used to collect and composite surficial sediment samples (i.e., ponar dredge sampler). Equipment blank sample bottles were filled by passing lab-supplied ultrapure water over the ponar and a stainless steel spoon and into an aluminum tray. The ultrapure water was decanted directly from the aluminum tray to the equipment blank sample jars. Equipment blanks were not collected on dedicated sampling equipment (i.e., AMS multi-stage sampler).

Sample jars were placed in bubble wrap and plastic bags and arranged in lab supplied coolers with loose ice. Samples were delivered daily to the Eurofins TestAmerica depot in Moraine, Ohio.

All surficial and depth sediment samples were submitted to Eurofins TestAmerica for laboratory analysis of TCL SVOCs (including PAHs).

2.4.4 Field Observations

Observations regarding the wildlife present during the October 2019 sampling event identified the following:

- Small minnows (species unknown)
- 1" long minnow with black tails
- 18" large Carp (Cyprinus)
- 4"-6" Sunfish (Lepomis gibbosus 4" to 8" long)
- Juvenile snapping turtle (Chelydra serpentine)
- Painted turtle (Chrysemys picta)
- Crawfish (species unknown)
- Canada geese (Branta canadensis)

2.5 Water Level Measurements

GHD recorded surface water level measurements in the Quarry Pond during the field sampling activities. GHD also recorded groundwater level measurements in existing monitoring wells located in the Quarry Pond area during groundwater investigations in 2017/2018, and during the 2019 sampling activities. Figure 2.3 illustrates the locations of groundwater investigative locations and staff gauges. The existing monitoring wells in closest proximity to the Quarry Pond are highlighted on the figure. The water level data are included in Table 2.5. GHD observations based on the water level data are summarized as follows:

- Groundwater elevations measured in monitoring wells near the pond vary from 707.85 feet to 711.58 feet over the period of measurements (from October 2017 to October 2019).
- The surface water elevation recorded on September 26, 2018 (710.4 feet) is slightly higher than the groundwater elevations (708.88 feet to 709.53 feet) recorded on October 1, 2018. GHD observed decreasing surface water levels in the Quarry Pond during the 2018 sampling event.
- The surface water elevation recorded on October 3, 2019 (708.9 feet) is slightly higher than the groundwater elevations (707.85 feet to 708.80 feet) recorded on October 4, 2019.

2.6 Quarry Pond Dimensions

The key dimensions of the Quarry Pond are:

- Surface area = 585,000 square feet (based on 709 feet contour interval)
- Lowest base elevation = approx. 675 feet

- Mean depth = approx. 16 feet (based on surface area and water volume corresponding to 709 feet contour interval)

3. Analytical Results

GHD collected surface water and sediment samples for laboratory analysis as described in the preceding sections. GHD reviewed the analytical laboratory deliverables for data validation purposes per the RI/FS Work Plan. GHD's data validation reports for the samples collected during both sampling events are included in Appendix D. The results of GHD's assessment were used to identify data qualifiers for inclusion in the analytical database, as presented in the data tables within this report. The data tables include comparison to ecological screening values (ESVs) and human health values (HHVs) as listed below. The screening values are based on conservative generic assumptions and are used for initial screening. Section 4 includes a detailed discussion of the analytical results.

2018 Surface Water Sample Results:

- Table 3.1a includes the analytical results for all parameters that were analyzed.
- Table 3.1b includes the analytical results for detected parameters (with number of detects and maximum detected concentration) and comparison to ESVs based on USEPA Region 4 freshwater criteria; and Ohio River Basin aquatic life – outside mixing zone average values.
- Table 3.1c includes the analytical results for detected parameters (with number of detects and maximum detected concentration) and comparison to HHVs based on Ohio River Basin human health non-drink values; and USEPA Water Quality Criteria for consumption of water and organisms.

2019 Surface Water Sample Results:

- Table 3.2a includes the analytical results for all parameters that were analyzed.
- Table 3.2b includes the analytical results for detected parameters (with number of detects and maximum detected concentration) and comparison to ESVs based on USEPA Region 4 freshwater criteria; and Ohio River Basin aquatic life – outside mixing zone average values.
- Table 3.2c includes the analytical results for detected parameters (with number of detects and maximum detected concentration) and comparison to HHVs based on Ohio River Basin human health non-drink values; and USEPA Water Quality Criteria for consumption of water and organisms.

Sediment Sample Results:

- Table 3.3a includes the analytical results for all parameters that were analyzed.
- Table 3.3b includes the analytical results for detected parameters (with number of detects and maximum detected concentration) and comparison to ESVs based on USEPA Region 4 freshwater criteria.

4. Data Assessment

This section presents GHD's data assessment based on available field investigation results. Section 4.1 includes a comparison of the surface water sampling results (2018 and 2019) and the sediment sampling results. Section 4.2 includes comparison to ESVs and HHVs.

4.1 Detected Parameters in Surface Water and Sediment

The following provides a summary of the analytical data for each parameter group based on the surface water and sediment sample results presented in Section 3.

4.1.1 VOCs

The VOCs that were detected in surface water and sediment samples are listed below.

VOCs	Surface water - 2018		Surface water - 2019		Sediment	
	# of detects (of 17 samples)	Max. detect (µg/L)	# of detects (of 19 samples)	Max. detect (µg/L)	# of detects (of 30 samples)	Max. detect (µg/kg)
1,2,4-Trichlorobenzene	1	0.41	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	1	2.9	--	--	23	73
2-Hexanone	1	1.1	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1	0.88	--	--	--	--
Acetone	4	36	--	--	4	210
Benzene	1	0.21	--	--	3	6.4
cis-1,2-Dichloroethene	2	0.22	1	0.23	--	--
Ethylbenzene	4	0.34	--	--	--	--
m&p-Xylenes	17	1.2	--	--	--	--
o-Xylene	12	0.56	--	--	--	--
Toluene	17	3.6	2	1.4	3	5.8
Trans-1,3-Dichloropropene	--	--	--	--	1	4.7
Trichloroethene	4	0.29	2	0.35	--	--
Xylenes (total)	17	1.8	--	--	--	--

As indicated above thirteen individual VOCs were detected in 2018 surface water samples at varying frequencies, with 82 detections in total. The most frequently detected VOCs include toluene and xylenes, in most or all samples. Far fewer VOC detections (five) were found in the 2019 surface water samples indicating a reduction in VOC presence, presumably due to natural attenuation of an earlier condition. The VOCs that were detected in surface water samples from both sampling events include cis-1,2-DCE, toluene, and TCE, which suggests that their presence in Quarry Pond surface water may be indicative of general conditions.

Five individual VOCs were detected in at least one sediment sample. The VOCs detected at the greatest frequency and concentrations include 2-butanone and acetone. Four of the five VOCs

detected in sediment samples were also detected in at least one surface water sample. One VOC (Trans-1,3-Dichloropropane) was detected in one sediment sample only.

4.1.2 SVOCs

The SVOCs that were detected in surface water and sediment samples are listed below. The PAHs are grouped as low molecular weight (LMW) and high molecular weight (HMW).

SVOCs	Surface water - 2018		Surface water - 2019		Sediment	
	# of detects (of 17 samples)	Max. detect (µg/L)	# of detects (of 19 samples)	Max. detect (µg/L)	# of detects (of 41 samples)	Max. detect (µg/kg)
bis(2-Ethylhexyl)phthalate (DEHP)	--	--	--	--	10	560
Butyl benzylphthalate (BBP)	1	7.9	--	--	--	--
Carbazole	--	--	--	--	13	5,400
Dibenzofuran	--	--	--	--	10	1,600
Di-n-butylphthalate (DBP)	--	--	--	--	1	2,900
Phenol	--	--	1	0.32	--	--
LMW PAHs						
2-Methylnaphthalene	2	0.14	2	0.15	18	260
Acenaphthene	--	--	--	--	24	2,900
Acenaphthylene	--	--	--	--	14	120
Anthracene	--	--	--	--	38	7,800
Fluorene	--	--	--	--	28	3,000
Naphthalene	3	0.17	7	1.1	19	300
Phenanthrene	--	--	--	--	41	37,000
HMW PAHs						
Benzo(a)anthracene	--	--	--	--	41	26,000
Benzo(a)pyrene	--	--	--	--	41	22,000
Benzo(b)fluoranthene	--	--	--	--	41	33,000
Benzo(g,h,i)perylene	--	--	--	--	41	11,000
Benzo(k)fluoranthene	--	--	--	--	41	9,300
Chrysene	--	--	--	--	41	29,000
Dibenz(a,h)anthracene	--	--	--	--	23	3,700
Fluoranthene	--	--	--	--	41	59,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	40	11,000
Pyrene	--	--	--	--	41	41,000

As indicated above three individual SVOCs (Butyl benzylphthalate, 2-Methylnaphthalene, and Naphthalene) were detected in 2018 surface water samples, with six detections in total; and three individual SVOCs (Phenol, 2-Methylnaphthalene, and Naphthalene) were detected in 2019 surface water samples, with ten detections in total. Two SVOCs (2-Methylnaphthalene, and Naphthalene) were detected in at least two surface water samples in each sampling event.

Twenty-one individual SVOCs were detected in at least one sediment sample. The most frequently detected SVOCs include various PAHs, in most or all samples. Generally, the HMW PAHs were detected at the greatest frequency and concentrations in sediment samples, but were not detected

in any surface water samples. Two SVOCs (Butyl benzylphthalate and Di-n-butylphthalate) were detected in one surface water sample each but were not detected in any sediment samples. Two LMW PAHs (2-Methylnaphthalene and Naphthalene) were detected in some surface water samples from both sampling events and in some sediment samples.

4.1.3 Metals and Cyanide

The parameters that were analyzed in surface water and sediment samples are listed below.

Parameters	Water	Surface water - 2018		Surface water - 2019		Sediment		
	Units	# of detects (of 17 samples)	Max. detect	# of detects (of 19 samples)	Max. detect	Units	# of detects (of 30 samples)	Max. detect
Aluminum	µg/L	4	110	2	49	mg/kg	30	12,000
Aluminum (dissolved)	µg/L	0	--	0	--			
Antimony	µg/L	0	--	3	0.82	mg/kg	26	0.76
Antimony (dissolved)	µg/L	0	--	3	0.92			
Arsenic	µg/L	17	14	19	5.8	mg/kg	30	24
Arsenic (dissolved)	µg/L	17	12	19	4.8			
Barium	µg/L	17	250	19	230	mg/kg	30	290
Barium (dissolved)	µg/L	17	200	19	230			
Beryllium	µg/L	4	0.67	1	0.57	mg/kg	24	0.89
Beryllium (dissolved)	µg/L	3	0.88	1	0.78			
Cadmium	µg/L	0	--	0	--	mg/kg	30	0.86
Cadmium (dissolved)	µg/L	0	--	0	--			
Calcium	µg/L	17	80,000	19	76,000	mg/kg	30	210,000
Calcium (dissolved)	µg/L	17	71,000	19	77,000			
Chromium	µg/L	0	--	0	--	mg/kg	30	20
Chromium (dissolved)	µg/L	0	--	2	6.4			
Cobalt	µg/L	2	0.64	1	0.67	mg/kg	30	11
Cobalt (dissolved)	µg/L	2	0.43	1	0.42			
Copper	µg/L	0	--	0	--	mg/kg	30	39
Copper (dissolved)	µg/L	0	--	0	--			
Iron	µg/L	9	7,400	6	3,400	mg/kg	30	25,000
Iron (dissolved)	µg/L	3	6,300	2	3,400			
Lead	µg/L	0	--	0	--	mg/kg	30	140
Lead (dissolved)	µg/L	0	--	0	--			
Magnesium	µg/L	17	32,000	19	31,000	mg/kg	30	63,000
Magnesium (dissolved)	µg/L	17	29,000	19	31,000			
Manganese	µg/L	17	2,000	19	3,000	mg/kg	30	1,000
Manganese (dissolved)	µg/L	2	1,600	7	2,800			
Mercury (low level)	ng/L	2	2.6	2	1.8			
Mercury	µg/L	0	--	0	--	mg/kg	22	0.17
Mercury (dissolved)	µg/L	0	--	0	--			
Methyl mercury	--	--	--	--	--	µg/kg	16	0.69
Nickel	µg/L	0	--	1	1.6	mg/kg	30	26

Parameters	Water	Surface water - 2018		Surface water - 2019		Sediment		
	Units	# of detects (of 17 samples)	Max. detect	# of detects (of 19 samples)	Max. detect	Units	# of detects (of 30 samples)	Max. detect
Nickel (dissolved)	µg/L	0	--	1	4			
Potassium	µg/L	17	6,500	19	6,100	mg/kg	30	2,000
Potassium (dissolved)	µg/L	17	6,200	19	6,000			
Selenium	µg/L	0	--	1	1	mg/kg	28	1.8
Selenium (dissolved)	µg/L	0	--	2	1.1			
Silver	µg/L	0	--	0	--	mg/kg	24	0.35
Silver (dissolved)	µg/L	0	--	0	--			
Sodium	µg/L	17	27,000	19	24,000	mg/kg	30	380
Sodium (dissolved)	µg/L	17	25,000	19	24,000			
Thallium	µg/L	0	--	2	0.55	mg/kg	30	0.55
Thallium (dissolved)	µg/L	0	--	1	0.73			
Vanadium	µg/L	2	1.4	1	0.89	mg/kg	30	29
Vanadium (dissolved)	µg/L	1	1.1	0	--			
Zinc	µg/L	0	--	0	--	mg/kg	30	390
Zinc (dissolved)	µg/L	0	--	2	89			
Cyanide (total)	mg/L	0	--	0	--	mg/kg	6	2.6

As indicated above the metals were detected at variable frequencies in surface water samples from both sampling events. The most frequently detected metals include arsenic, barium, calcium, iron, magnesium, manganese, potassium, and sodium. All other parameters were infrequently detected (less than 25% of samples) or were not detected in any surface water samples. In contrast, all metals were detected in most or all sediment samples. The parameters that were detected in sediment samples only include cadmium, copper, lead, silver, and cyanide.

4.1.4 PCBs

The PCBs that were detected in surface water and sediment samples are listed below.

PCBs	Surface water - 2018		Surface water - 2019		Sediment	
	# of detects (of 17 samples)	Max. detect (µg/L)	# of detects (of 19 samples)	Max. detect (µg/L)	# of detects (of 30 samples)	Max. detect (µg/kg)
Aroclor-1242 (PCB-1242)	--	--	--	--	11	130
Aroclor-1254 (PCB-1254)	1	0.074	--	--	4	420

As indicated above there was one detection of PCBs in one surface water sample collected in 2018. The PCB detection in surface water is anomalous since it occurred in a single 2018 sample and was not confirmed in the 2019 sampling event. Two PCBs (PCB-1242 and PCB-1254) were detected in some sediment samples.

4.1.5 Pesticides

The pesticides that were detected in surface water and/or sediment samples are listed below.

Pesticides	Surface water - 2018		Surface water - 2019		Sediment	
	# of detects (of 17 samples)	Max. detect (µg/L)	# of detects (of 19 samples)	Max. detect (µg/L)	# of detects (of 30 samples)	Max. detect (µg/kg)
alpha-Chlordane	--	--	--	--	1	5.5
gamma-Chlordane	--	--	--	--	6	12

As indicated above pesticides were not detected in any surface water samples. Two pesticides (alpha-Chlordane and gamma-Chlordane) were detected in some sediment samples.

4.1.6 Herbicides

Herbicides were not detected in any surface water or sediment samples.

4.1.7 General Chemistry Parameters – Surface water

General chemistry parameters that were analyzed in surface water samples are listed below.

Parameters	Units	Surface water - 2018		Surface water - 2019	
		# of detects (of 17 samples)	Max. detect	# of detects (of 19 samples)	Max. detect
Chloride	mg/L	17	36	19	34
Fluoride	mg/L	17	0.19	19	0.18
Hardness	mg/L	17	330	19	320
Hardness, carbonate	mg/L	17	200	19	190
Hardness, magnesium	mg/L	17	130	19	130
Nitrate (as N)	µg/L	8	410	0	--
Nitrite (as N)	µg/L	0	--	0	--
Sulfate	mg/L	17	25	19	20
Sulfide	mg/L	0	--	6	1.6
Total dissolved solids (TDS)	mg/L	17	390	19	390

As indicated above all parameters were detected in all samples that were analyzed from both sampling events, with the exception of nitrate, nitrite and sulfide. The maximum detected concentrations for the widely detected parameters (chloride, fluoride, hardness, sulfate, and TDS) are similar for both sampling events, indicating consistent water quality conditions.

4.2 Comparison to Screening Levels

The analytical results for surface water samples (Table 3.1b, Table 3.1c, Table 3.2b, and Table 3.2c) and sediment samples (Table 3.3b) include comparison to screening levels as noted in Section 3. The following is a summary of the sources and application of the screening values.

Screening Values	Source	Application
Surface Water ESVs		
Region 4 Freshwater Chronic	USEPA Region 4 Ecological Risk Assessment Supplemental Guidance Report, updated March 2018	Protection of aquatic life and wildlife based on chronic effects for various receptor types (species)
Aquatic Life - OMZA	Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values	Protection of aquatic life and wildlife for various receptor types
Surface Water HHVs		
Human Health - Nondrink	Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values	Fish consumption by humans
Human Health for consumption of water and organism	USEPA National Recommended Water Quality Criteria – Human Health Criteria Table	Fish and water consumption by humans
Human Health for consumption of organism only	USEPA National Recommended Water Quality Criteria – Human Health Criteria Table	Fish consumption by humans
Sediment ESVs		
Region 4 Freshwater ESVs	USEPA Region 4 Ecological Risk Assessment Supplemental Guidance Report, updated March 2018	Protection of aquatic life and wildlife based on sediment exposure and uptake from sediment

In addition, GHD calculated screening levels for recreational exposure to surface water and sediment using the USEPA's on-line RSL calculator for comparison to the analytical results as discussed in Section 4.3.

4.2.1 2018 Surface Water Sample Results

The following summarize GHD's observations based on review of the tabulated analytical results shown in Table 3.1b and Table 3.1c:

- The most frequently detected VOCs include xylenes and toluene (detected in all samples). All other VOCs were infrequently detected (less than 25 percent of samples) or not detected in any samples. There was only one VOC (1,2,4-Trichorobenzene) detected at a concentration greater than HHVs. There were no VOC detections greater than ESVs.
- SVOCs were infrequently detected (less than 25 percent of samples) or not detected in any samples. There was only one SVOC (Buthyl benzylphthalate) detected at a concentration greater than HHVs. There were no SVOC detections greater than ESVs.
- The most frequently detected metals (total and dissolved) include arsenic, barium, calcium, magnesium, potassium and sodium. Other metals that were frequently detected (i.e., in more than 50 percent of the samples) include: iron (total) and manganese (total). All remaining metals were infrequently detected (less than 25 percent of samples).

- The sample locations that exhibit the greatest concentrations of most metals include SW-1 (22.58 BWS) and SW-2 (28.83 BWS). Both locations are in the northwest part of the Quarry Pond where water depth is the greatest. The field monitoring results (see Table 2.2) indicate anoxic/reducing conditions exist at these sample intervals, which can result in dissolution of metals from solid to aqueous phase.
- Metals that were detected at concentrations greater than HHVs include arsenic (total and dissolved) and manganese (total and dissolved).
- Metals that were detected at concentrations greater than ESVs include aluminum (total), barium (total), iron (total and dissolved), manganese (total and dissolved), and mercury.
- PCBs were not detected with the following exception. Aroclor-1254 was detected in one sample (SW-2, 5 feet BWS) at a concentration greater than HHVs.
- Herbicides were not detected in any samples.
- Pesticides were not detected in any samples.
- The most frequently detected general chemistry parameters include chloride, fluoride, sulfate and TDS. Nitrate was detected in approximately 50 percent of samples. There were no detections of cyanide, nitrite, and sulfide. TDS was detected at concentrations greater than HHVs.

4.2.2 2019 Surface Water Sample Results

The following summarize GHD's observations based on review of the tabulated analytical results shown in Table 3.2b and Table 3.2c:

- VOCs were generally not detected. The only detected VOCs include cis-1,2-Dichloroethene (in one sample), toluene (in two samples), and trichloroethene (in two samples). There were no VOC detections greater than HHVs or ESVs.
- SVOCs were generally not detected. The only detected SVOCs include 2-Methylnaphthalene (in two samples), naphthalene (in seven samples), and phenol (in one sample). There were no SVOC detections greater than HHVs or ESVs.
- The most frequently detected metals (total and dissolved) include arsenic, barium, calcium, magnesium, potassium and sodium. Iron (total) and manganese (total and dissolved) were also detected in a high proportion of samples. All remaining metals were infrequently detected (less than 25 percent of samples).
- The sample location that exhibits the greatest concentrations of most metals is SW-2 (26.92 feet BWS) located in the northwest part of the Quarry Pond where water depth is greatest. The field monitoring results (see Table 2.2) indicate anoxic/reducing conditions consistent with the 2018 results.
- Metals that were detected at concentrations greater than HHVs include arsenic (total and dissolved), manganese (total and dissolved), and thallium (total and dissolved).
- Metals that were detected at concentrations greater than ESVs include barium (total and dissolved), iron (total and dissolved), manganese (total and dissolved), mercury, and zinc (dissolved).

- PCBs were not detected in any samples.
- Herbicides were not detected in any samples.
- Pesticides were not detected in any samples.
- The most frequently detected general chemistry parameters (in all samples) include chloride, fluoride, sulfate, and TDS. There were no detections of cyanide, nitrate, and nitrite. TDS was detected at concentrations greater than HHVs.

4.2.3 Sediment Sample Results

The following summarize GHD's observations based on review of the tabulated analytical results shown in Table 3.3b:

- The most frequently detected VOC is methyl ethyl ketone (MEK). All other VOCs were infrequently detected (less than 25 percent of samples) or not detected in any samples. There was only one VOC (acetone) detected at a concentration greater than the ESV.
- The most frequently detected SVOCs include various polynuclear aromatic hydrocarbon (PAH) compounds. As shown in Table 3.3b, the total detected concentration of LMW PAHs ranges from less than 100 µg/kg to 51,260 µg/kg and the total detected concentration of HMW PAHs ranges from less than 1,000 µg/kg to 245,000 µg/kg. The maximum total detected PAH concentration occurs at SD-17, 0 to 0.5 feet deep. The additional sediment samples collected in 2019 near SD-17 (SD-17A, SD-17B, SD-17C, SD-17D and SD-17E) also contain PAHs but at concentrations that are lower, by one order of magnitude compared to SD-17. These sample locations are along the southeast side of the Quarry Pond, adjacent to Parcel 3753 (Jim City Salvage), where elevated concentrations of PAHs are detected in soil/fill samples collected from Exposure Unit 3 (EU3)[3]. The next greatest total detected PAH concentrations occur at SD-04 and SD-05, which are located near the shoreline on the northeast side of the Quarry Pond. The total PAH concentrations at the remaining sample locations are typically below 5,000 µg/kg (5 mg/kg). The detected concentrations of individual PAHs are variable, but typically less than 1,000 µg/kg (1 mg/kg) with the exception of two areas along the southeast and northeast sides of the Quarry Pond noted above. The greatest concentrations of most individual PAHs (up to 59,000 µg/kg) were detected at SD-17. All detected SVOCs had maximum concentrations greater than ESVs.
- The metals that were detected at the highest frequency (in all samples) include aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, thallium, vanadium and zinc. Other detected metals include antimony, beryllium, mercury, methyl mercury, selenium, and silver. The concentrations of individual metals did not vary significantly within the sample set, consistent with natural conditions. Metals that were detected at concentrations greater than ESVs include: arsenic, barium, copper, iron, lead, manganese, methyl mercury, nickel, selenium, and zinc. The detected metals concentrations are comparable to Ohio background values for sediment (see Section 4.2.3.1).

[3] See Site Characterization Technical Memorandum – Soil/Fill and Soil Gas Investigation, Section 4.1.2.3.

- The SEM/AVS parameters that were detected (in all samples) include cadmium, copper, lead, nickel, zinc, and sulfide. Mercury was not detected in any samples. The maximum SEM/AVS ratio for the sediment samples was 0.47, with most values (26 of 30) lower than 0.2. Therefore all values are below the threshold of 1 for screening sediment toxicity. These results indicate that the extractable divalent metals in the sediment should be present in solid sulfide form and therefore are probably non-bioavailable.
- PCBs were infrequently detected with maximum concentrations of 130 µg/kg for Aroclor 1242 and 420 µg/kg for Aroclor 1254.
- Herbicides were not detected in any samples.
- Pesticides were infrequently detected with maximum concentrations of 5.5 µg/kg for alpha-Chlordane and 12 µg/kg for gamma-Chlordane.

4.2.3.1 Background Metals Comparison

The following provides a summary of metals concentrations in sediment samples with comparison to Ohio EPA sediment reference values (SRVs). As shown in the table below the ranges of detected metals concentrations are lower than the respective SRVs for aluminum, antimony, cadmium, chromium, cobalt, iron, nickel, potassium, selenium, silver, thallium, and vanadium. The metals with maximum detected concentration values greater than the respective SRV include arsenic, barium, beryllium, calcium, copper, lead, magnesium, manganese, mercury, and zinc.

Parameter	Units	Number of detects	Minimum detected concentration	Maximum detected concentration	Ohio EPA Sediment Reference Value (SRV)	Source (See Note 1)
Aluminum	mg/kg	30	1500	12000	39000	EBCP
Antimony	mg/kg	26	0.12 J	0.76	0.92	EBCP
Arsenic	mg/kg	30	3	**24**	18	EBCP
Barium	mg/kg	30	19	**290**	240	EBCP
Beryllium	mg/kg	24	0.12 J	**0.89**	0.8	SW
Cadmium	mg/kg	30	0.11 J	0.86	0.9	EBCP
Calcium	mg/kg	30	49000	**210000**	120000	EBCP
Chromium	mg/kg	30	3.7	20	40	EBCP
Cobalt	mg/kg	30	2.4	11	12	SW
Copper	mg/kg	30	2.9	**39**	34	EBCP
Iron	mg/kg	30	5600	25000	33000	EBCP
Lead	mg/kg	30	7.2	**140**	47	SW
Magnesium	mg/kg	30	14000	**63000**	35000	EBCP
Manganese	mg/kg	30	240	**1000**	780	EBCP
Mercury	mg/kg	22	0.049 J	**0.17**	0.12	SW
Methyl mercury	µg/kg	16		0.69	-	-
Nickel	mg/kg	30	4.1	26	42	EBCP
Potassium	mg/kg	30	280	2000	11000	EBCP
Selenium	mg/kg	28	0.14 J	1.8	2.3	EBCP
Silver	mg/kg	24	0.049 J	0.35	0.43	SW
Sodium	mg/kg	30	120 J	380	-	EBCP
Thallium	mg/kg	30	0.073 J	0.55	4.7	SW

Parameter	Units	Number of detects	Minimum detected concentration	Maximum detected concentration	Ohio EPA Sediment Reference Value (SRV)	Source (See Note 1)
Vanadium	mg/kg	30	6.1	29	40	SW
Zinc	mg/kg	30	13	**390**	160	EBCP
Note 1: Ohio EPA Ecological Risk Assessment Guidance Document, July, 2018 EBCP: Eastern Corn Belt Plains SW: Statewide						

4.2.4 Screening Summary

The parameters with maximum detected concentrations that exceed ESVs and HHVs are identified (with 'X') below.

	Surface water - 2018		Surface water - 2019		Sediment	
	>ESV	>HHV	>ESV	>HHV	>ESV	
VOCs						
Acetone					X	
1,2,4-Trichorobenzene		X				
SVOCs						
bis(2-Ethylhexyl)phthalate (DEHP)					X	
Butyl benzylphthalate (BBP)		X				
Carbazole					X	
Dibenzofuran					X	
Di-n-butylphthalate (DBP)					X	
Phenol						
LMW PAHs						
2-Methylnaphthalene					X	
Acenaphthene					X	
Acenaphthylene					X	
Anthracene					X	
Fluorene					X	
Naphthalene					X	
Phenanthrene					X	
HMW PAHs						
Benzo(a)anthracene					X	
Benzo(a)pyrene					X	
Benzo(b)fluoranthene					X	
Benzo(g,h,i)perylene					X	
Benzo(k)fluoranthene					X	
Chrysene					X	
Dibenz(a,h)anthracene					X	
Fluoranthene					X	
Indeno(1,2,3-cd)pyrene					X	
Pyrene					X	

	Surface water - 2018		Surface water - 2019		Sediment	
	>ESV	>HHV	>ESV	>HHV	>ESV	
Metals						
Aluminum	X					
Arsenic		X		X	X	
Barium	X		X		X	
Copper					X	
Iron	X		X		X	
Lead					X	
Manganese	X	X	X	X	X	
Mercury	X		X			
Methyl mercury					X	
Nickel					X	
Selenium					X	
Thallium				X		
Zinc			X		X	
PCBs						
Aroclor-1254		X				
General Chemistry						
TDS		X		X		

As indicated above, the detected exceedances of screening values primarily relate to the presence of metals in surface water and sediment samples, and PAHs in sediment samples. The distribution of these key parameters is discussed below.

Figure 4.1 shows the detected concentrations of select metals (aluminum, arsenic, barium, iron, manganese, mercury, thallium, zinc) that are greater than screening values (ESVs and/or HHVs) for each surface water sample location. As shown on the figure, most of the metals exceedances occur at two locations (SW-1 and SW-2). Both of these sample locations are within the northwest part of the Quarry Pond where the water depth is at a maximum (approx. 30 feet). At SW-1, the metals that were detected at concentrations greater than screening values include arsenic and thallium in shallow samples; and arsenic, iron, manganese, and mercury in deep samples collected in the first event (2018). Only arsenic was detected at concentrations greater than screening values in the SW-1 deep sample collected in the second event (2019). At SW-2, the metals the metals that were detected at concentrations greater than screening values include arsenic in shallow samples; and arsenic, barium, iron, manganese, and mercury in deep samples from both sampling events. Arsenic concentrations greater than HHVs were detected at all surface water sample locations, typically around 2 µg/L or less, with the exception of the deep samples at SW-1 and SW-2 noted above, where greater arsenic concentrations (up to 14 µg/L) were detected. Excepting the deep samples collected at SW-1 and SW-2, the only metals that were detected at concentrations greater than ESVs include aluminum at one location (SW-3, 17.11 feet BWS) and zinc at one location (SW-10, 5 feet BWS).

Figure 4.2 shows the detected concentrations of select metals (arsenic, barium, copper, iron, lead, manganese, methyl mercury, nickel, selenium, zinc) that are greater than screening values (ESVs) for each sediment sample location. As shown on the figure, the number of parameters that exceed

ESVs and the detected concentrations are variable among the sample locations. The locations with the greatest number of parameters that exceed ESVs include SD-06, SD-10, and SD-11, all located in the north central part of the Quarry Pond; and SD-13, located near the small cut channel adjacent to Parcel 3753.

Figure 4.3 shows the concentrations of detected PAHs expressed as total HMW PAHs, total LMW PAHs, and total PAHs for each location with comparison to screening values (ESVs). As shown on the figure, the sample location with the greatest concentration of PAHs is SD-17 (total PAHs = 296,260 µg/kg at 0 to 0.5 feet deep) located adjacent to Parcel 3753. Additional samples collected in this area (including SD-17A, SD-17B, SD-17C, SD-17D, and SD-17E) also contain PAHs but at concentrations that are around one to two orders of magnitude lower than SD-17. The next greatest concentrations of PAHs were detected at SD-04 (total PAHs = 14,180 µg/kg at 0.5 to 1.5 feet deep) and SD-05 (total PAHs = 21,694 µg/kg at 0.5 to 1.5 feet deep) located near the northeast perimeter of the Quarry Pond; and SD-13 (total PAHs = 5312 µg/kg at 0 to 0.5 feet deep) located near the small cut channel adjacent to Parcel 3753. The detected total PAH concentration at all remaining sediment sample locations are less than 2,500 µg/kg.

4.3 Comparison to Calculated RSLs for Recreational User

GHD calculated screening levels for exposure to surface water and sediment using the USEPA's on-line RSL calculator based on hypothetical recreational exposure in the Quarry Pond. The default scenario is based on direct contact during bathing and wading. A default frequency of 58 days per year (USEPA, 2011) was conservatively applied as input to the RSL calculator. GHD notes that the Quarry Pond is not available for public access and therefore potential exposure is more appropriately associated with a trespasser scenario rather than regular public access.

Table 4.1a and Table 4.1b include the results for detected parameters for surface water samples collected in 2018 and 2019 respectively with the RSL calculator output (based on CR = 1E-06, HI = 0.1). As shown on the tables, the parameters that were detected in surface water samples with maximum concentrations greater than the calculated RSLs include arsenic (maximum detected concentration = 14 µg/L compared to the calculated RSL = 1.82 µg/L); manganese (maximum detected concentration = 3000 µg/L compared to the calculated RSL = 416 µg/L); and thallium (maximum detected concentration = 0.73 µg/L compared to the calculated RSL = 0.383 µg/L). Inspection of the analytical results in Table 3.1a and Table 3.2a indicates that the greatest concentrations of arsenic and manganese were detected in surface water samples collected deeper than 20 feet BWS at two locations (SW-1 and SW-2) in the northwest part of the Quarry Pond. Thallium was infrequently detected (in 2019 samples only).

Table 4.2 includes the results for detected parameters for sediment samples with the RSL calculator output (based on CR = 1E-06, HI = 0.1). As shown on the table, the parameters that were detected in sediment samples with maximum concentrations greater than the calculated RSLs include PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene], arsenic, and thallium. This comparison does not differentiate the sample depth or interval and is therefore conservative since potential exposure to sediment would generally be limited to shallow depths. As shown in Table 2.3, the shallowest sediment sample locations (less than 10 feet of water column at the time of sampling) include SD-03, SD-07, SD-12, and SD-16. Inspection of the analytical results in Table 3.3a indicates that arsenic is the only parameter detected

at concentrations greater than the calculated RSLs in sediment samples from these four locations (maximum detected arsenic concentration = 11 mg/kg compared to the calculated RSL = 4.09 mg/kg).

Based on the screening outlined above the potential risk to a hypothetical recreational user may be associated with the presence of arsenic, manganese, and thallium in surface water, and arsenic in shallow sediment.

4.4 Potential Fish Consumption

GHD conducted a review of the Quarry Pond surface water and sediment data with respect to potential risk related to human consumption of fish, based on the screening level comparison presented in Section 4.2. GHD's assessment is provided in Appendix E and includes identification of chemicals of potential concern (COPCs); calculated risk levels based on uptake from surface water and sediment to fish tissue; and analysis of potential fish yield from the Quarry Pond. The results are summarized as follows:

- The detected parameters identified as COPCs in surface water include arsenic, manganese, and thallium.
- Screening levels for sediment are not available and therefore GHD identified detected bioaccumulative parameters as COPCs including PAHs, arsenic, cadmium, chromium, copper, lead, methyl mercury, nickel, selenium, silver, zinc, aroclor-1242, aroclor-1254, alpha-chlordane, and gamma-chlordane.
- The cumulative risk to a trespasser fish consumer (child and adolescent) due to carcinogenic effects is 5E-05. The cumulative hazard index value for non-carcinogenic effects is 2. The cumulative hazard index value for individual target organs is at 1 or less than 1. The calculated risks are based on consumption of 3 lbs per year for an adult.
- The estimated consumable fish yield from the Quarry Pond is 11 lbs per year which is approximately four times the amount that would be used by a single adult trespasser fish consumer in the risk calculations.

GHD concludes that potential fish consumption is very limited and is not expected to result in significant risk to a trespasser that may catch and consume fish from the Quarry Pond.

5. Summary of Results

The Quarry Pond field investigation activities included a hydrographic survey in March 2018 to determine bathymetry and to identify "foreign objects" in the base of the pond, and collection of surface water and sediment samples in two sampling events (September 2018 and October 2019). The bathymetry survey determined variable water depths with a maximum of approximately 35 feet and an average of approximately 16 feet. These values also vary according to water level in the pond, which is affected by occasional flooding and groundwater levels. The survey identified various types of scattered debris, both manmade and natural throughout the Quarry Pond. The objects were located and classified as suspected vehicle/ vessel; potential boulder; potential drum; potential log; potential logs and/or boulders; potential manmade debris; potential tire; potential vertical manmade

structure; and suspected debris/ rubble field. Surface water and sediment sample locations were selected with agency approval to characterize areas near manmade objects and to more broadly characterize conditions within the Quarry Pond.

The analytical results for surface water samples indicate the presence of relatively low concentrations of organic compounds compared to screening values. Metals that were detected in surface water samples at concentrations greater than ESVs and/or HHVs include aluminum, arsenic, barium, iron, manganese, mercury, thallium, and zinc. Two sample locations in the northwest area of the Quarry Pond (SW-1 and SW-2) where water depth is greatest (> 20 feet deep) were noted to have elevated metals concentrations at depth. Field monitoring results at these locations indicate anoxic/reducing conditions, which causes dissolution of metals from solid to aqueous phase. Samples collected at shallower depths, with more oxidizing conditions, do not show the same levels of metals.

The analytical results for sediment samples indicate the presence of SVOCs (primarily PAHs) and metals with maximum concentrations greater than ESVs.

As indicated above, the maximum concentrations of some parameters exceed ESVs in surface water and sediment samples. The characterization data will be used as input to the Screening Level Ecological Risk Assessment (SLERA) to determine potential risk to ecological receptors.

GHD reviewed the analytical results with respect to potential human health risk based on recreational use and fish consumption. Based on the screening results (see Section 4.3) the potential risk to a hypothetical recreational user (trespasser) may be associated with the presence of arsenic, manganese, and thallium in surface water, and arsenic in shallow sediment. With regard to potential fish consumption (see Section 4.4), GHD concludes that it is very limited and is not expected to result in significant risk to a trespasser that may catch and consume fish from the Quarry Pond. These findings will be incorporated in the HHRA.

6. References

GHD, September 20, 2017, Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2.

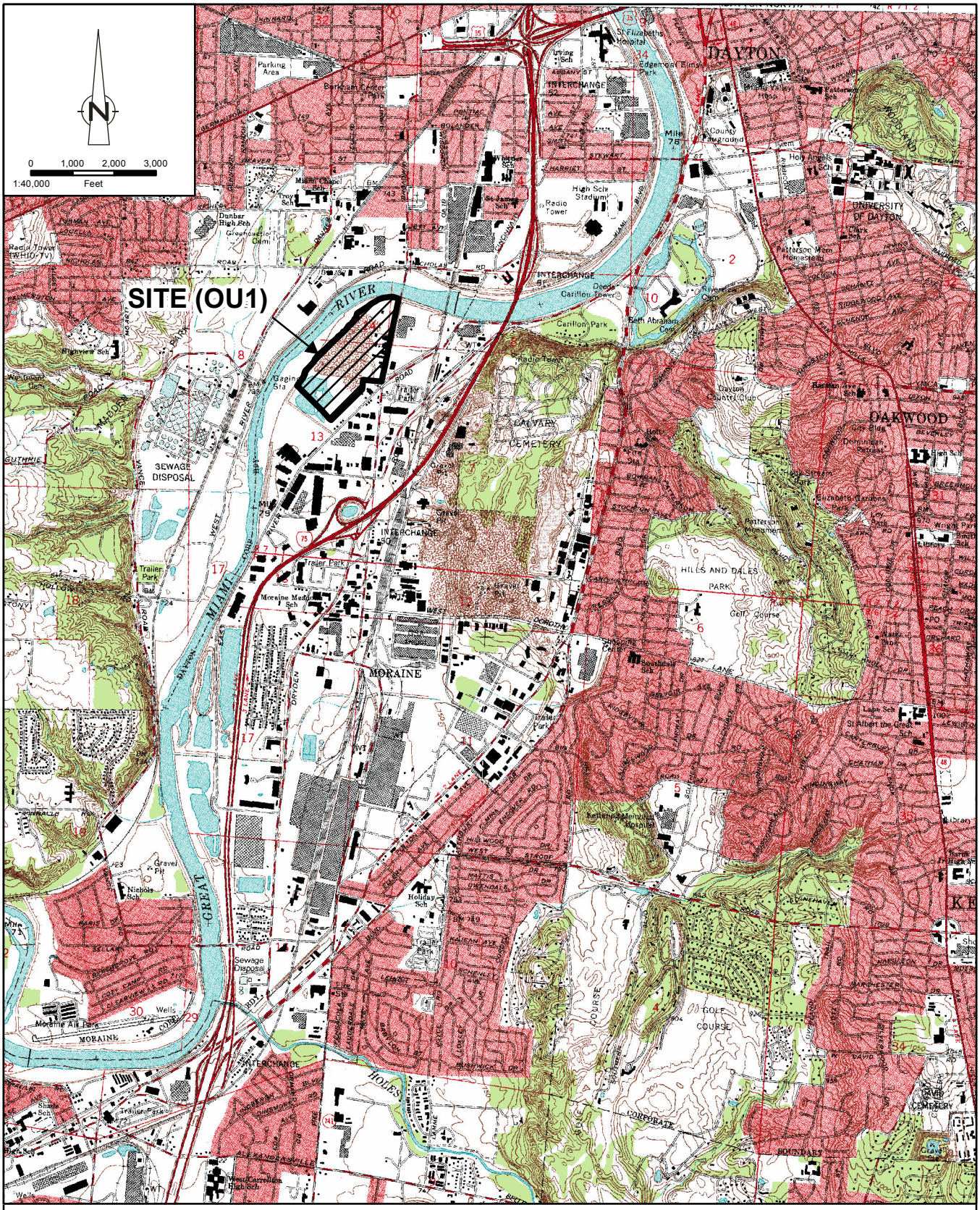
GHD, June 11, 2018, Letter Re: Quarry Pond Investigation – Hydrographic Survey.

GHD, April 26, 2019, Letter Re: Quarry Pond Investigation – Sampling Results.

GHD, July 17, 2019, Site Characterization Technical Memorandum, Soil/Fill and Soil Gas Investigation.

GHD, September 30, 2019, Site Characterization Technical Memorandum, Groundwater Investigation.

USEPA, 2011, Exposure Factors Handbook 2011 Edition (Final). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/052F, September 2011.

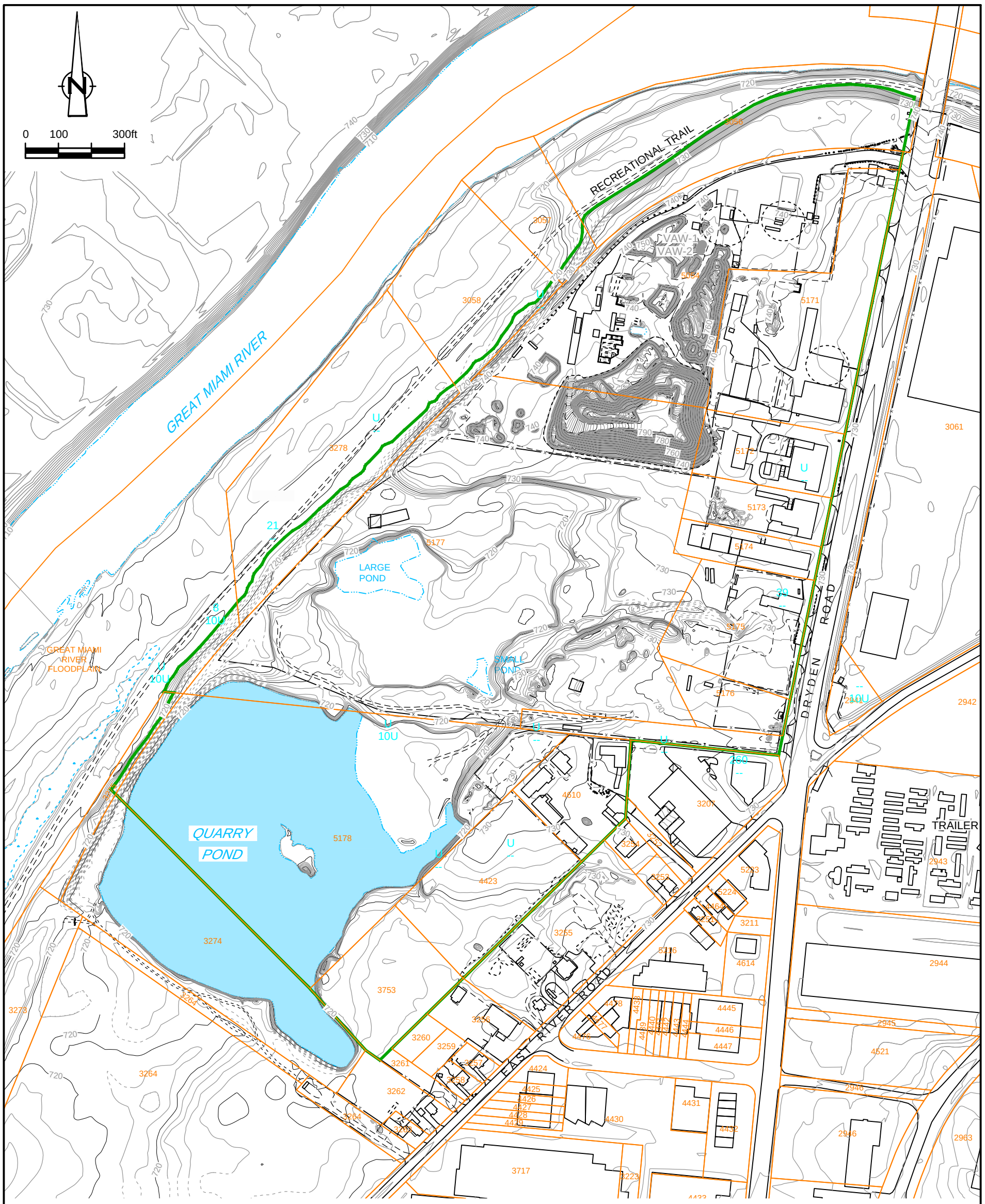


Base Data: Dayton South USGS Quad Image
Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

figure 1.1

SITE LOCATION MAP
SOUTH DAYTON DUMP & LANDFILL SITE
Moraine, Ohio

038443(037)GIS003 Dec 17/2019



LEGEND

- OPERABLE UNIT ONE (OU1) BOUNDARY (APPROXIMATE)
- EDGE OF WATER
- PARCEL BOUNDARY
- 730 EXISTING GROUND CONTOUR
- QUARRY POND

figure 1.2

SITE TOPOGRAPHIC MAP
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

SOURCES:
THE PAYNE FIRM, INC., PROJECT 0279.44.05, FIGURE 1, DATED 9/12/05;
TETRA TECH EM INC., PROJECT L0312006-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AASI 29610, 04/02/2008

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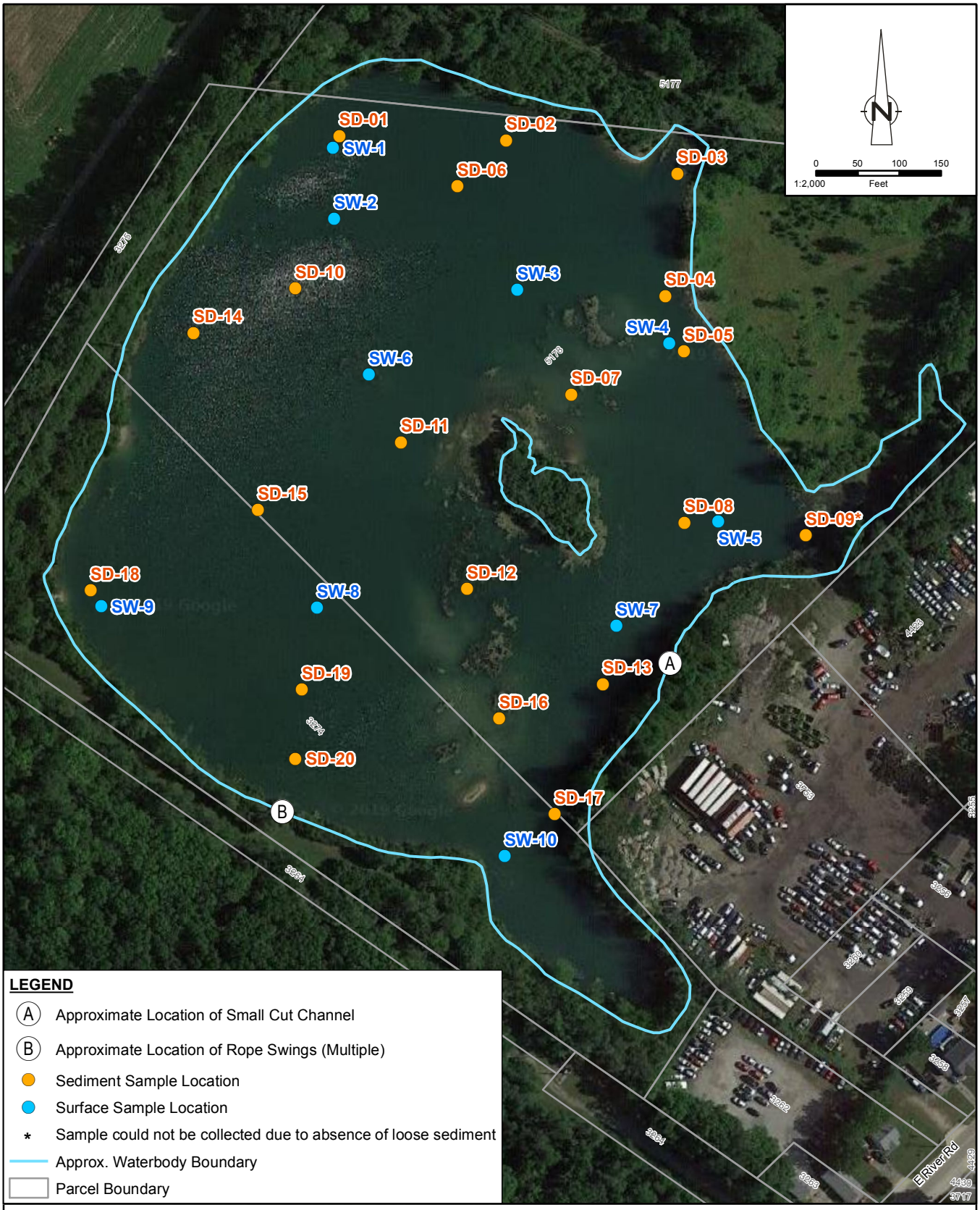


LEGEND

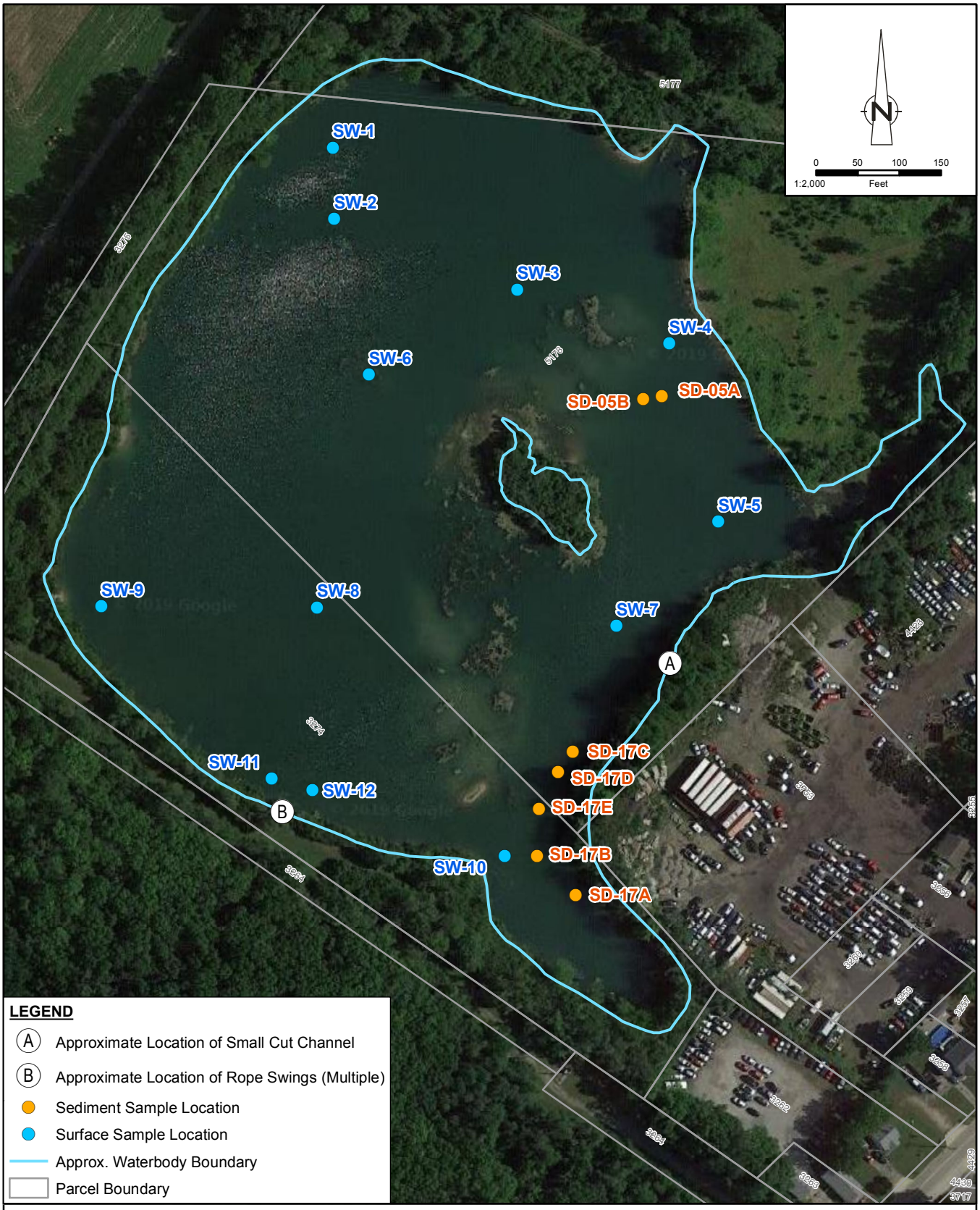
- (A) Approximate Location of Small Cut Channel
- (B) Approximate Location of Rope Swings (Multiple)
- Sediment Sample Location
- Surface Sample Location
- * Sample could not be collected due to absence of loose sediment
- Approx. Waterbody Boundary
- Parcel Boundary

Source: Image ©2019 Google, 07/10/2018
Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

figure 2.1

2018 SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS
QUARRY POND
SOUTH DAYTON DUMP & LANDFILL SITE
Moraine, Ohio

038443(037)GIS001 Dec 16/2019



Source: Image ©2019 Google, 07/10/2018
Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

figure 2.2

2019 SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS
QUARRY POND
SOUTH DAYTON DUMP & LANDFILL SITE
Moraine, Ohio

038443(037)GIS002 Dec 16/2019

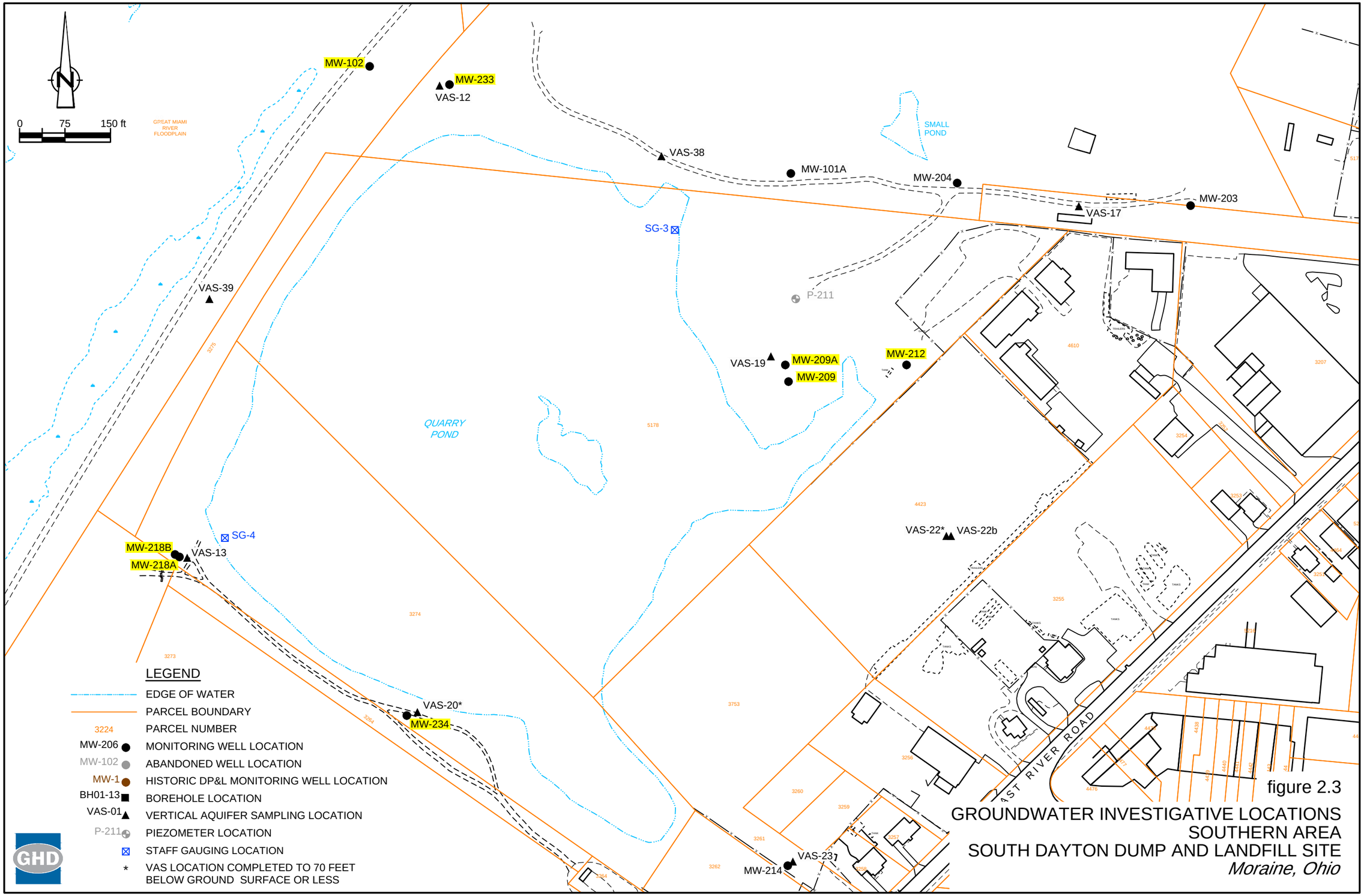


figure 2.3

GROUNDWATER INVESTIGATIVE LOCATIONS
SOUTHERN AREA
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

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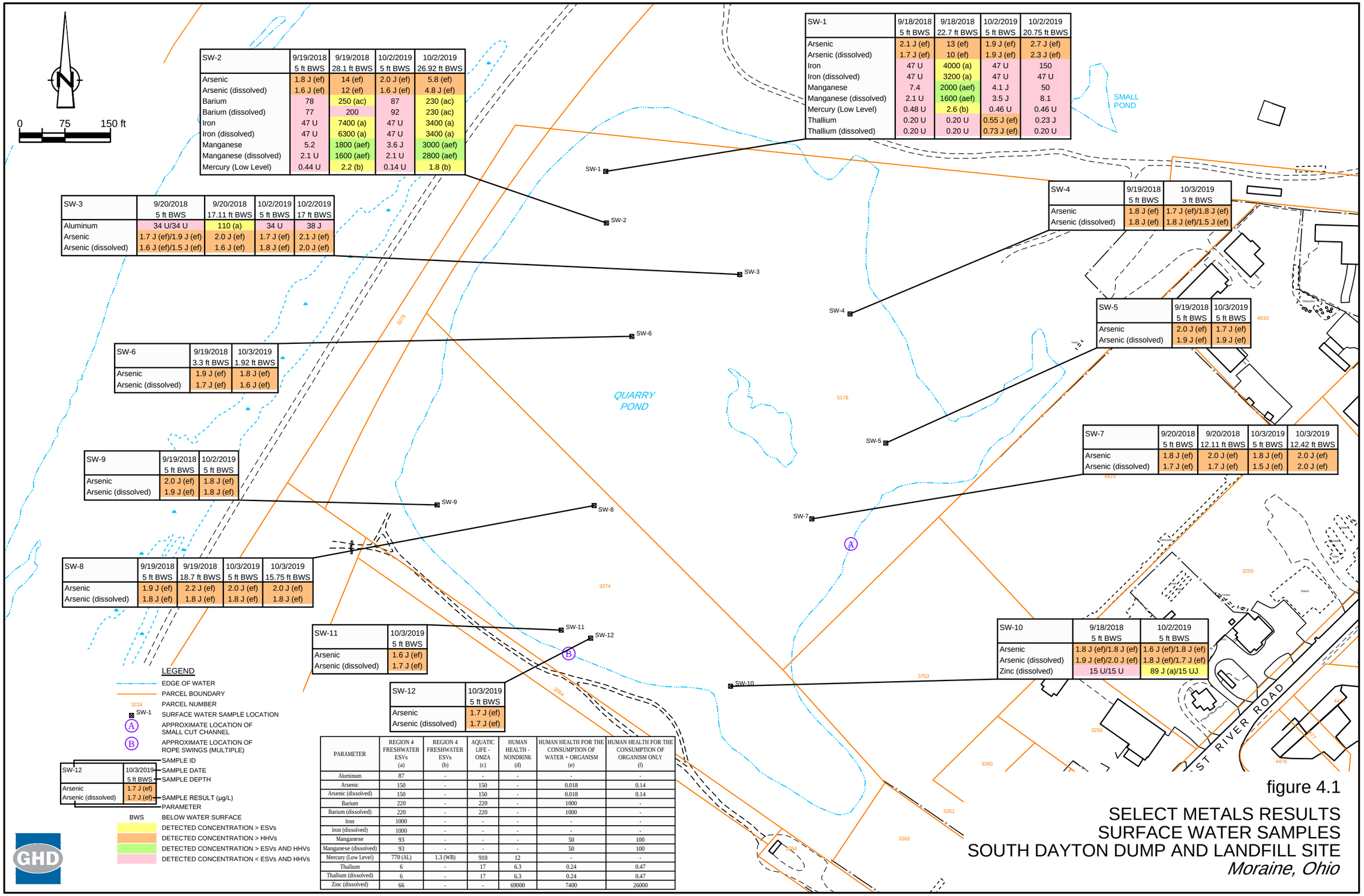

SW-1	9/18/2018 5 ft BWS	9/18/2018 22.7 ft BWS	10/2/2019 5 ft BWS	10/2/2019 20.75 ft BWS
Arsenic	2.1 J (ef)	13 (ef)	1.9 J (ef)	2.7 J (ef)
Arsenic (dissolved)	1.7 J (ef)	10 (ef)	1.9 J (ef)	2.3 J (ef)
Iron	47 U	4000 (a)	47 U	150
Iron (dissolved)	47 U	3200 (a)	47 U	47 U
Manganese	7.4	2000 (aef)	4.1 J	50
Manganese (dissolved)	2.1 U	1600 (aef)	3.5 J	8.1
Mercury (Low Level)	0.48 U	2.6 (b)	0.46 U	0.46 U
Thallium	0.20 U	0.20 U	0.55 J (ef)	0.23 J
Thallium (dissolved)	0.20 U	0.20 U	0.73 J (ef)	0.20 U

SW-2	9/19/2018 5 ft BWS	9/19/2018 28.1 ft BWS	10/2/2019 5 ft BWS	10/2/2019 26.92 ft BWS
Arsenic	1.8 J (ef)	14 (ef)	2.0 J (ef)	5.8 (ef)
Arsenic (dissolved)	1.6 J (ef)	12 (ef)	1.6 J (ef)	4.8 J (ef)
Barium	78	250 (ac)	87	230 (ac)
Barium (dissolved)	77	200	92	230 (ac)
Iron	47 U	7400 (a)	47 U	3400 (a)
Iron (dissolved)	47 U	6300 (a)	47 U	3400 (a)
Manganese	5.2	1800 (aef)	3.6 J	3000 (aef)
Manganese (dissolved)	2.1 U	1600 (aef)	2.1 U	2800 (aef)
Mercury (Low Level)	0.44 U	2.2 (b)	0.14 U	1.8 (b)

SW-3	9/20/2018 5 ft BWS	9/20/2018 17.11 ft BWS	10/2/2019 5 ft BWS	10/2/2019 17 ft BWS
Aluminum	34 U/34 U	110 (a)	34 U	38 J
Arsenic	1.7 J (ef)/1.9 J (ef)	2.0 J (ef)	1.7 J (ef)	2.1 J (ef)
Arsenic (dissolved)	1.6 J (ef)/1.5 J (ef)	1.6 J (ef)	1.8 J (ef)	2.0 J (ef)

SW-4	9/19/2018 5 ft BWS	10/3/2019 3 ft BWS
Arsenic	1.8 J (ef)	1.7 J (ef)/1.8 J (ef)
Arsenic (dissolved)	1.8 J (ef)	1.8 J (ef)/1.5 J (ef)

SW-5	9/19/2018 5 ft BWS	10/3/2019 5 ft BWS
Arsenic	2.0 J (ef)	1.7 J (ef)
Arsenic (dissolved)	1.9 J (ef)	1.9 J (ef)

SW-6	9/19/2018 3.3 ft BWS	10/3/2019 1.92 ft BWS
Arsenic	1.9 J (ef)	1.8 J (ef)
Arsenic (dissolved)	1.7 J (ef)	1.6 J (ef)

SW-7	9/20/2018 5 ft BWS	9/20/2018 12.11 ft BWS	10/3/2019 5 ft BWS	10/3/2019 12.42 ft BWS
Arsenic	1.8 J (ef)	2.0 J (ef)	1.8 J (ef)	2.0 J (ef)
Arsenic (dissolved)	1.7 J (ef)	1.7 J (ef)	1.5 J (ef)	2.0 J (ef)

SW-9	9/19/2018 5 ft BWS	10/2/2019 5 ft BWS
Arsenic	2.0 J (ef)	1.8 J (ef)
Arsenic (dissolved)	1.9 J (ef)	1.8 J (ef)

SW-8	9/19/2018 5 ft BWS	9/19/2018 18.7 ft BWS	10/3/2019 5 ft BWS	10/3/2019 15.75 ft BWS
Arsenic	1.9 J (ef)	2.2 J (ef)	2.0 J (ef)	2.0 J (ef)
Arsenic (dissolved)	1.8 J (ef)	1.8 J (ef)	1.8 J (ef)	1.8 J (ef)

SW-10	9/18/2018 5 ft BWS	10/2/2019 5 ft BWS
Arsenic	1.8 J (ef)/1.8 J (ef)	1.6 J (ef)/1.8 J (ef)
Arsenic (dissolved)	1.9 J (ef)/2.0 J (ef)	1.8 J (ef)/1.7 J (ef)
Zinc (dissolved)	15 U/15 U	89 J (a)/15 UJ

SW-11	10/3/2019 5 ft BWS
Arsenic	1.6 J (ef)
Arsenic (dissolved)	1.7 J (ef)

SW-12	10/3/2019 5 ft BWS
Arsenic	1.7 J (ef)
Arsenic (dissolved)	1.7 J (ef)

LEGEND

- EDGE OF WATER
- PARCEL BOUNDARY
- 3224 PARCEL NUMBER
- SW-1 SURFACE WATER SAMPLE LOCATION
- A APPROXIMATE LOCATION OF SMALL CUT CHANNEL
- B APPROXIMATE LOCATION OF ROPE SWINGS (MULTIPLE)

SW-12	10/3/2019 5 ft BWS
Arsenic	1.7 J (ef)
Arsenic (dissolved)	1.7 J (ef)

- SAMPLE ID
- SAMPLE DATE
- SAMPLE DEPTH
- SAMPLE RESULT (µg/L)
- PARAMETER

BWS BELOW WATER SURFACE

- DETECTED CONCENTRATION > ESVs
- DETECTED CONCENTRATION > HHVs
- DETECTED CONCENTRATION > ESVs AND HHVs
- DETECTED CONCENTRATION < ESVs AND HHVs

PARAMETER	REGION 4 FRESHWATER ESVs (a)	REGION 4 FRESHWATER ESVs (b)	AQUATIC LIFE - OMZA (c)	HUMAN HEALTH - NONDRINK (d)	HUMAN HEALTH FOR THE CONSUMPTION OF WATER + ORGANISM (e)	HUMAN HEALTH FOR THE CONSUMPTION OF ORGANISM ONLY (f)
Aluminum	87	-	-	-	-	-
Arsenic	150	-	150	-	0.018	0.14
Arsenic (dissolved)	150	-	150	-	0.018	0.14
Barium	220	-	220	-	1000	-
Barium (dissolved)	220	-	220	-	1000	-
Iron	1000	-	-	-	-	-
Iron (dissolved)	1000	-	-	-	-	-
Manganese	93	-	-	-	50	100
Manganese (dissolved)	93	-	-	-	50	100
Mercury (Low Level)	770 (AL)	1.3 (WB)	910	12	-	-
Thallium	6	-	17	6.3	0.24	0.47
Thallium (dissolved)	6	-	17	6.3	0.24	0.47
Zinc (dissolved)	66	-	-	69000	7400	26000

figure 4.1

SELECT METALS RESULTS
SURFACE WATER SAMPLES
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

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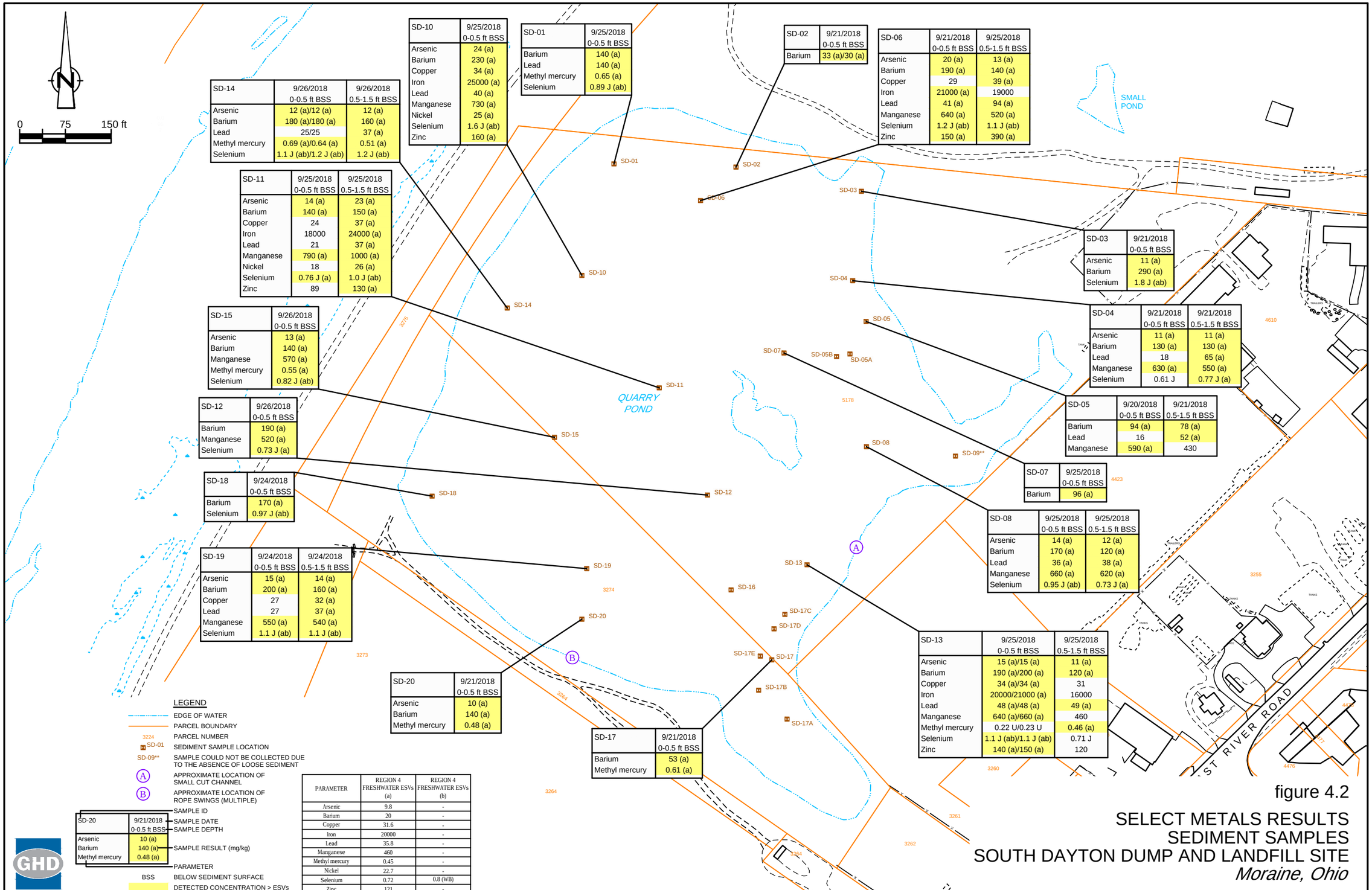

SD-10	9/25/2018 0-0.5 ft BSS
Arsenic	24 (a)
Barium	230 (a)
Copper	34 (a)
Iron	25000 (a)
Lead	40 (a)
Manganese	730 (a)
Nickel	25 (a)
Selenium	1.6 J (ab)
Zinc	160 (a)

SD-01	9/25/2018 0-0.5 ft BSS
Barium	140 (a)
Lead	140 (a)
Methyl mercury	0.65 (a)
Selenium	0.89 J (ab)

SD-02	9/21/2018 0-0.5 ft BSS
Barium	33 (a)/30 (a)

SD-06	9/21/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Arsenic	20 (a)	13 (a)
Barium	190 (a)	140 (a)
Copper	29	39 (a)
Iron	21000 (a)	19000
Lead	41 (a)	94 (a)
Manganese	640 (a)	520 (a)
Selenium	1.2 J (ab)	1.1 J (ab)
Zinc	150 (a)	390 (a)

SD-14	9/26/2018 0-0.5 ft BSS	9/26/2018 0.5-1.5 ft BSS
Arsenic	12 (a)/12 (a)	12 (a)
Barium	180 (a)/180 (a)	160 (a)
Lead	25/25	37 (a)
Methyl mercury	0.69 (a)/0.64 (a)	0.51 (a)
Selenium	1.1 J (ab)/1.2 J (ab)	1.2 J (ab)

SD-11	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Arsenic	14 (a)	23 (a)
Barium	140 (a)	150 (a)
Copper	24	37 (a)
Iron	18000	24000 (a)
Lead	21	37 (a)
Manganese	790 (a)	1000 (a)
Nickel	18	26 (a)
Selenium	0.76 J (a)	1.0 J (ab)
Zinc	89	130 (a)

SD-03	9/21/2018 0-0.5 ft BSS
Arsenic	11 (a)
Barium	290 (a)
Selenium	1.8 J (ab)

SD-04	9/21/2018 0-0.5 ft BSS	9/21/2018 0.5-1.5 ft BSS
Arsenic	11 (a)	11 (a)
Barium	130 (a)	130 (a)
Lead	18	65 (a)
Manganese	630 (a)	550 (a)
Selenium	0.61 J	0.77 J (a)

SD-15	9/26/2018 0-0.5 ft BSS
Arsenic	13 (a)
Barium	140 (a)
Manganese	570 (a)
Methyl mercury	0.55 (a)
Selenium	0.82 J (ab)

SD-05	9/20/2018 0-0.5 ft BSS	9/21/2018 0.5-1.5 ft BSS
Barium	94 (a)	78 (a)
Lead	16	52 (a)
Manganese	590 (a)	430

SD-12	9/26/2018 0-0.5 ft BSS
Barium	190 (a)
Manganese	520 (a)
Selenium	0.73 J (a)

SD-07	9/25/2018 0-0.5 ft BSS
Barium	96 (a)

SD-18	9/24/2018 0-0.5 ft BSS
Barium	170 (a)
Selenium	0.97 J (ab)

SD-08	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Arsenic	14 (a)	12 (a)
Barium	170 (a)	120 (a)
Lead	36 (a)	38 (a)
Manganese	660 (a)	620 (a)
Selenium	0.95 J (ab)	0.73 J (a)

SD-19	9/24/2018 0-0.5 ft BSS	9/24/2018 0.5-1.5 ft BSS
Arsenic	15 (a)	14 (a)
Barium	200 (a)	160 (a)
Copper	27	32 (a)
Lead	27	37 (a)
Manganese	550 (a)	540 (a)
Selenium	1.1 J (ab)	1.1 J (ab)

SD-13	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Arsenic	15 (a)/15 (a)	11 (a)
Barium	190 (a)/200 (a)	120 (a)
Copper	34 (a)/34 (a)	31
Iron	20000/21000 (a)	16000
Lead	48 (a)/48 (a)	49 (a)
Manganese	640 (a)/660 (a)	460
Methyl mercury	0.22 U/0.23 U	0.46 (a)
Selenium	1.1 J (ab)/1.1 J (ab)	0.71 J
Zinc	140 (a)/150 (a)	120

SD-20	9/21/2018 0-0.5 ft BSS
Arsenic	10 (a)
Barium	140 (a)
Methyl mercury	0.48 (a)

SD-17	9/21/2018 0-0.5 ft BSS
Barium	53 (a)
Methyl mercury	0.61 (a)

PARAMETER	REGION 4 FRESHWATER ESVs (a)	REGION 4 FRESHWATER ESVs (b)
Arsenic	9.8	-
Barium	20	-
Copper	31.6	-
Iron	20000	-
Lead	35.8	-
Manganese	460	-
Methyl mercury	0.45	-
Nickel	22.7	-
Selenium	0.72	0.8 (WB)
Zinc	121	-

GHD

figure 4.2

SELECT METALS RESULTS
SEDIMENT SAMPLES
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

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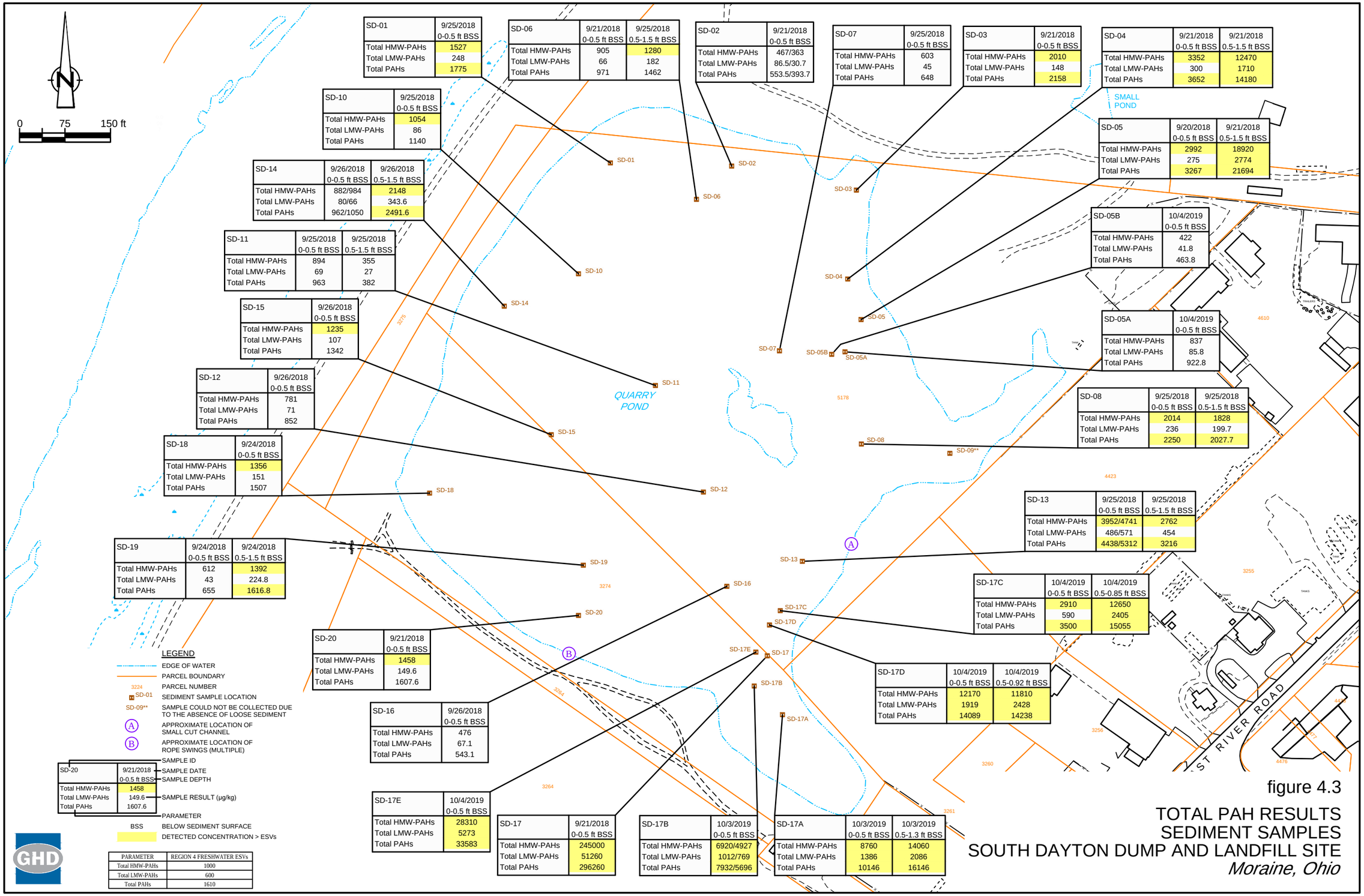

SD-01	9/25/2018 0-0.5 ft BSS
Total HMW-PAHs	1527
Total LMW-PAHs	248
Total PAHs	1775

SD-06	9/21/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Total HMW-PAHs	905	1280
Total LMW-PAHs	66	182
Total PAHs	971	1462

SD-02	9/21/2018 0-0.5 ft BSS
Total HMW-PAHs	467/363
Total LMW-PAHs	86.5/30.7
Total PAHs	553.5/393.7

SD-07	9/25/2018 0-0.5 ft BSS
Total HMW-PAHs	603
Total LMW-PAHs	45
Total PAHs	648

SD-03	9/21/2018 0-0.5 ft BSS
Total HMW-PAHs	2010
Total LMW-PAHs	148
Total PAHs	2158

SD-04	9/21/2018 0-0.5 ft BSS	9/21/2018 0.5-1.5 ft BSS
Total HMW-PAHs	3352	12470
Total LMW-PAHs	300	1710
Total PAHs	3652	14180

SD-10	9/25/2018 0-0.5 ft BSS
Total HMW-PAHs	1054
Total LMW-PAHs	86
Total PAHs	1140

SD-05	9/20/2018 0-0.5 ft BSS	9/21/2018 0.5-1.5 ft BSS
Total HMW-PAHs	2992	18920
Total LMW-PAHs	275	2774
Total PAHs	3267	21694

SD-14	9/26/2018 0-0.5 ft BSS	9/26/2018 0.5-1.5 ft BSS
Total HMW-PAHs	882/984	2148
Total LMW-PAHs	80/66	343.6
Total PAHs	962/1050	2491.6

SD-05B	10/4/2019 0-0.5 ft BSS
Total HMW-PAHs	422
Total LMW-PAHs	41.8
Total PAHs	463.8

SD-11	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Total HMW-PAHs	894	355
Total LMW-PAHs	69	27
Total PAHs	963	382

SD-15	9/26/2018 0-0.5 ft BSS
Total HMW-PAHs	1235
Total LMW-PAHs	107
Total PAHs	1342

SD-05A	10/4/2019 0-0.5 ft BSS
Total HMW-PAHs	837
Total LMW-PAHs	85.8
Total PAHs	922.8

SD-12	9/26/2018 0-0.5 ft BSS
Total HMW-PAHs	781
Total LMW-PAHs	71
Total PAHs	852

SD-08	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Total HMW-PAHs	2014	1828
Total LMW-PAHs	236	199.7
Total PAHs	2250	2027.7

SD-18	9/24/2018 0-0.5 ft BSS
Total HMW-PAHs	1356
Total LMW-PAHs	151
Total PAHs	1507

SD-13	9/25/2018 0-0.5 ft BSS	9/25/2018 0.5-1.5 ft BSS
Total HMW-PAHs	3952/4741	2762
Total LMW-PAHs	486/571	454
Total PAHs	4438/5312	3216

SD-19	9/24/2018 0-0.5 ft BSS	9/24/2018 0.5-1.5 ft BSS
Total HMW-PAHs	612	1392
Total LMW-PAHs	43	224.8
Total PAHs	655	1616.8

SD-17C	10/4/2019 0-0.5 ft BSS	10/4/2019 0.5-0.85 ft BSS
Total HMW-PAHs	2910	12650
Total LMW-PAHs	590	2405
Total PAHs	3500	15055

SD-20	9/21/2018 0-0.5 ft BSS
Total HMW-PAHs	1458
Total LMW-PAHs	149.6
Total PAHs	1607.6

SD-17D	10/4/2019 0-0.5 ft BSS	10/4/2019 0.5-0.92 ft BSS
Total HMW-PAHs	12170	11810
Total LMW-PAHs	1919	2428
Total PAHs	14089	14238

SD-16	9/26/2018 0-0.5 ft BSS
Total HMW-PAHs	476
Total LMW-PAHs	67.1
Total PAHs	543.1

SD-17E	10/4/2019 0-0.5 ft BSS
Total HMW-PAHs	28310
Total LMW-PAHs	5273
Total PAHs	33583

SD-17	9/21/2018 0-0.5 ft BSS
Total HMW-PAHs	245000
Total LMW-PAHs	51260
Total PAHs	296260

SD-17B	10/3/2019 0-0.5 ft BSS
Total HMW-PAHs	6920/4927
Total LMW-PAHs	1012/769
Total PAHs	7932/5696

SD-17A	10/3/2019 0-0.5 ft BSS	10/3/2019 0.5-1.3 ft BSS
Total HMW-PAHs	8760	14060
Total LMW-PAHs	1386	2086
Total PAHs	10146	16146

PARAMETER	REGION 4 FRESHWATER ESVs
Total HMW-PAHs	1000
Total LMW-PAHs	600
Total PAHs	1610

figure 4.3

TOTAL PAH RESULTS SEDIMENT SAMPLES SOUTH DAYTON DUMP AND LANDFILL SITE

Moraine, Ohio

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Table 2.1

Surface Water Sample Collection Summary
South Dayton Dump and landfill Site
Moraine, Ohio

Sample Location	Sample Interval	Sample ID	Sample Date	Sample Time	Water Column Depth (ft BWS)	Depth to Water Quality Sonde (ft BWS)	Coordinates		Notes
							X (ft)	Y (ft)	
SW-1	Depth	SW-38443-091818-JPF-001	18-Sep-18	13:46	27.6	22.6	1483729	633020	Sulfur odor in preserved amber bottles
SW-1	Shallow	SW-38443-091818-JPF-002	18-Sep-18	14:10	27.6	5.0	1483729	633020	-
SW-2	Shallow	SW-38443-091918-JPF-008	19-Sep-18	10:55	33.8	5.0	1483730	632935	Clear, colorless, earthy odor, no visible particulate
SW-2	Depth	SW-38443-091918-JPF-009	19-Sep-18	11:30	33.8	28.8	1483730	632935	Clear, colorless, sulfur odor, no visible particulate , water is noticeably cooler
SW-3	Depth	SW-38443-092018-JPF-013	20-Sep-18	9:10	22.9	17.9	1483950	632850	Clear, colorless, slight earthy odor, trace visible particulate
SW-3	Shallow	SW-38443-092018-JPF-014	20-Sep-18	9:12	22.9	5.0	1483950	632850	Clear, colorless, odorless, no visible particulate
SW-3 (duplicate)	Duplicate of -014	SW-38443-092018-JPF-015	20-Sep-18	9:30	22.9	5.0	1483950	632850	Duplicate sample
SW-4	Shallow	SW-38443-091918-JPF-012	19-Sep-18	15:30	11.7	5.0	1484132	632785	Clear, colorless, odorless with no visible particulate
SW-5	Shallow	SW-38443-091918-JPF-011	19-Sep-18	14:10	18.7	5.0	1484191	632572	Clear, colorless, very slight "chemical" odor, no visible particulate, MS/MSD
SW-6	Shallow	SW-38443-091918-JPF-010	19-Sep-18	12:15	6.5	3.3	1483772	632748	Sample collected at midpoint of water column
SW-7	Shallow	SW-38443-092018-JPF-016	20-Sep-18	10:30	17.9	5.0	1484069	632447	Clear, colorless, odorless, no visible particulate, approximately 40' from small cut channel adjacent Jim City Automotive
SW-7	Depth	SW-38443-092018-JPF-017	20-Sep-18	10:35	17.9	12.9	1484069	632447	Clear, colorless, odorless, no visible particulate, approximately 40' from small cut channel adjacent Jim City Automotive
SW-8	Shallow	SW-38443-091918-JPF-006	19-Sep-18	9:16	23.6	5.0	1483710	632469	Clear, colorless, odorless, no visible particulate
SW-8	Depth	SW-38443-091918-JPF-007	19-Sep-18	9:43	23.6	18.6	1483710	632469	Clear, colorless, slight earthy odor, no visible particulate
SW-9	Shallow	SW-38443-091918-JPF-005	19-Sep-18	8:35	12.7	5.0	1483451	632470	Clear, colorless, odorless, no visible particulate
SW-10	Shallow	SW-38443-091818-JPF-003	18-Sep-18	15:00	14.8	5.0	1483935	632171	-
SW-10 (duplicate)	Duplicate of -003	SW-38443-091818-JPF-004	18-Sep-18	15:15	14.8	5.0	1483935	632171	Duplicate sample
SW-1	Depth	SW-38443-100219-JPF-002	2-Oct-19	9:30	25.8	20.8	1483729	633020	Clear; colorless; odorless; no visible particulate
SW-1	Shallow	SW-38443-100219-JPF-001	2-Oct-19	9:25	25.8	5.0	1483729	633020	Clear; colorless; odorless; no visible particulate; additional Methyl Hg bottle filled
SW-2	Shallow	SW-38443-100219-JPF-003	2-Oct-19	11:20	31.9	5.0	1483730	632935	Clear; colorless; odorless; no visible particulate
SW-2	Depth	SW-38443-100219-JPF-004	2-Oct-19	11:30	31.9	26.9	1483730	632935	Clear; colorless; strong sulphur odor; no visible particulate; water is noticeably cooler to the touch
SW-3	Shallow	SW-38443-100219-JPF-005	2-Oct-19	12:25	22.0	5.0	1483950	632850	Clear; colorless; odorless; no visible particulate
SW-3	Deep	SW-38443-100219-JPF-006	2-Oct-19	12:55	22.0	17.0	1483950	632850	Clear, colorless, odorless, no visible particulate; strong wind
SW-4	Shallow	SW-38443-100319-JPF-016	3-Oct-19	12:30	6.0	3.0	1484132	632785	Clear; colorless; odorless; trace visible particulate
SW-5	Shallow	SW-38443-100319-JPF-015	3-Oct-19	11:20	18.1	5.0	1484191	632572	Clear; colorless; odorless; no visible particulate
SW-6	Shallow	SW-38443-100319-JPF-014	3-Oct-19	9:55	3.8	1.9	1483772	632748	Sample collected at midpoint of water column; clear; colorless; odorless; trace visible particulate; over rocky mound; additional material for MS/MSD collected
SW-7	Shallow	SW-38443-100319-JPF-012	3-Oct-19	8:45	17.4	5.0	1484069	632447	Clear; colorless; odorless; no visible particulate
SW-7	Depth	SW-38443-100319-JPF-013	3-Oct-19	8:55	17.4	12.4	1484069	632447	Clear; colorless; odorless; no visible particulate
SW-8	Shallow	SW-38443-100319-JPF-010	3-Oct-19	7:55	20.8	5.0	1483710	632469	Clear; colorless; odorless; no visible particulate
SW-8	Depth	SW-38443-100319-JPF-011	3-Oct-19	8:00	20.8	15.8	1483710	632469	Clear; colorless; slight "earthy" odor; no visible particulate
SW-9	Shallow	SW-38443-100219-JPF-009	2-Oct-19	15:40	9.4	5.0	1483451	632470	Clear; colorless; odorless; no visible particulate; vegetation visible on substrate
SW-10	Shallow	SW-38443-100219-JPF-007	2-Oct-19	14:30	17.3	5.0	1483935	632171	Clear; colorless; odorless; no visible particulate; vegetation visible on substrate; submerged logs on substrate
SW-11	Shallow	SW-38443-100319-JPF-018	3-Oct-19	13:25	11.5	5.0	1483656	632264	Clear; colorless; odorless; no visible particulate; North of rope swing
SW-12	Shallow	SW-38443-100319-JPF-019	3-Oct-19	14:05	15.3	5.0	1483704	632250	Clear; colorless; odorless; no visible particulate; South of rope swing
Field Duplicate 1	Duplicate of -007	SW-38443-100219-JPF-008	2-Oct-19	14:30	17.3	5.0	-	-	-
Field Duplicate 2	Duplicate of -016	SW-38443-100319-JPF-017	3-Oct-19	12:30	6.0	3.0	-	-	-
Field Blank 1	-	SW-38443-100319-JPF-020	3-Oct-19	15:00	-	-	-	-	-

Notes:

ft BWS - feet below water surface

Table 2.2

Surface Water Field Parameter Data Summary
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location	Date	Time	Sample Interval	Water Column Depth at Sample Location (ft BWS)	Depth to Water Quality Sonde (ft BWS)	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)
SW-1	18-Sep-18	13:46	Depth	27.6	22.6	6.39	20.18	0.546	1.00	5.00	0.00
SW-1	18-Sep-18	14:10	Shallow	27.6	5.0	8.31	24.88	0.446	9.34	26.60	0.00
SW-2	19-Sep-18	10:55	Shallow	33.8	5.0	8.43	25.14	0.463	10.21	186.2	0.00
SW-2	19-Sep-18	11:30	Depth	33.8	28.8	6.26	12.29	0.764	0.49	-98.90	8.50
SW-3	20-Sep-18	9:10	Depth	22.9	17.9	6.76	21.71	0.553	2.23	153.9	3.00
SW-3	20-Sep-18	9:12	Shallow	22.9	5.0	8.19	25.55	0.485	10.29	174.6	0.00
SW-4	19-Sep-18	15:30	Shallow	11.7	5.0	7.58	25.58	0.467	9.94	162.5	0.30
SW-5	19-Sep-18	14:10	Shallow	18.7	5.0	8.28	25.57	0.465	10.38	149.4	0.10
SW-6	19-Sep-18	12:15	Shallow	6.5	3.3	8.4	25.37	0.463	10.26	112.0	0.00
SW-7	20-Sep-18	10:30	Shallow	17.9	5.0	8.19	25.55	0.483	10.26	156.0	0.00
SW-7	20-Sep-18	10:35	Depth	17.9	12.9	7.46	23.61	0.494	3.82	152.3	0.80
SW-8	19-Sep-18	9:16	Shallow	23.6	5.0	8.34	25.06	0.463	9.92	194.5	0.00
SW-8	19-Sep-18	9:43	Depth	23.6	18.6	6.89	21.79	0.531	3.14	221.0	1.60
SW-9	19-Sep-18	8:35	Shallow	12.7	5.0	8.39	25.09	0.462	9.67	164.6	0.00
SW-10	18-Sep-18	15:00	Shallow	14.8	5.0	7.03	25.21	0.447	9.56	130.6	0.00
SW-1	2-Oct-19	9:30	Deep	25.8	20.8	7.54	22.16	0.533	6.17	124.60	8.60
SW-1	2-Oct-19	9:25	Shallow	25.8	5.0	8.29	24.8	0.476	9.29	89.90	0.00
SW-2	2-Oct-19	11:20	Shallow	31.9	5.0	8.28	24.97	0.477	9.17	75.6	0.00
SW-2	2-Oct-19	11:30	Deep	31.9	26.9	6.82	14.22	0.776	0.36	-84.40	6.70
SW-3	2-Oct-19	12:25	Shallow	22.0	5.0	8.31	25.14	0.476	9.45	83.3	0.00
SW-3	2-Oct-19	12:55	Deep	22.0	17.0	7.77	23.94	0.495	7.37	131.1	2.80
SW-4	3-Oct-19	12:30	Shallow	6.0	3.0	8.16	25.38	0.476	9.20	150.4	0.00
SW-5	3-Oct-19	11:20	Shallow	18.1	5.0	8.16	25.29	0.477	9.05	190.8	0.00
SW-6	3-Oct-19	9:55	Shallow	3.8	1.9	8.26	25.06	0.476	9.44	168.8	0.00
SW-7	3-Oct-19	8:45	Shallow	17.4	5.0	8.12	25.03	0.477	8.63	179.5	0.00
SW-7	3-Oct-19	8:55	Deep	17.4	12.4	7.79	24.5	0.486	5.18	177.0	0.20
SW-8	3-Oct-19	7:55	Shallow	20.8	5.0	8.14	25.07	0.477	9.18	190.1	0.00
SW-8	3-Oct-19	8:00	Deep	20.8	15.8	8.02	24.14	0.489	8.74	188.8	0.90
SW-9	2-Oct-19	15:40	Shallow	9.4	5.0	8.17	25.28	0.476	9.65	142.6	0.00
SW-10	2-Oct-19	14:30	Shallow	17.3	5.0	8.21	25.21	0.473	9.22	133.5	0.00
SW-11	3-Oct-19	13:25	Shallow	11.5	5.0	8.22	25.25	0.476	9.32	180.5	0.00
SW-12	3-Oct-19	14:05	Shallow	15.3	5.0	9.19	25.43	0.477	9.17	203.6	0.00
Field Duplicate 1	2-Oct-19	14:30	Duplicate of -007	17.3	5.0	8.21	25.21	0.473	9.22	133.5	0.00
Field Duplicate 2	3-Oct-19	12:30	Duplicate of -016	6.0	3.0	8.16	25.38	0.476	9.20	150.4	0.00

Notes:

ft BWS - feet below water surface
mS/cm - millisiemens per centimeter
mg/L - micrograms per liter
mV - millivolt
NTU - Nephelometric Turbidity Unit

Table 2.3

Sediment Sample Collection Summary
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location	Sample Interval	Sample Depth Below Substrate Surface (inches BSS)	Water Depth (ft)	Water Column Depth at Sample Location (ft BWS)	Sample ID	Sample Date	Sample Time	Coordinates		Notes
								X (ft)	Y (ft)	
SD-01	Shallow/Surficial	0-6	23'6"	23.5	SED-38443-092518-JPF-021	25-Sep-18	14:24	633033.959	1483736.332	
SD-02	Shallow/Surficial	0-6	19'9"	19.8	SED-38443-092118-JPF-006	21-Sep-18	11:42	633028.735	1483936.334	Sample location shifted twice due to hard substrate
SD-02 (duplicate)	Duplicate of -006	0-6	26'1"	19.8	SED-38443-092118-JPF-007	21-Sep-18	11:50	633028.735	1483936.334	Duplicate sample
SD-03	Shallow/Surficial	0-6	7'9"	7.8	SED-38443-092118-JPF-005	21-Sep-18	10:52	632989.092	1484141.952	
SD-04	Shallow/Surficial	0-6	12'11"	12.9	SED-38443-092118-JPF-003	21-Sep-18	8:50	632842.574	1484127.672	Sample location shifted west due to hard substrate
SD-04	Depth/Core	6-18	12'11"	12.9	SED-38443-092118-JPF-004	21-Sep-18	9:30	632842.574	1484127.672	
SD-05	Shallow/Surficial	0-6	-	N/M	SED-38443-092018-JPF-001	20-Sep-18	15:45	632775.720	1484149.600	
SD-05	Depth/Core	6-18	-	N/M	SED-38443-092118-JPF-002	21-Sep-18	8:20	632775.720	1484149.600	
SD-06	Shallow/Surficial	0-6	26'1"	26.1	SED-38443-092118-JPF-008	21-Sep-18	12:30	632973.914	1483878.107	
SD-06	Depth/Core	6-18	26'1"	26.1	SED-38443-092518-JPF-018	25-Sep-18	11:50	632973.914	1483878.107	
SD-07	Shallow/Surficial	0-6	4'8"	4.7	SED-38443-092518-JPF-017	25-Sep-18	10:52	632724.000	1484015.000	
SD-08	Shallow/Surficial	0-6	20'2"	20.2	SED-38443-092518-JPF-015	25-Sep-18	8:55	632570.384	1484150.170	
SD-08	Depth/Core	6-17	20'2"	20.2	SED-38443-092518-JPF-014	25-Sep-18	8:50	632570.384	1484150.170	
SD-09	Shallow/Surficial	0-6	-	-	No sample	-	-	-	-	Unable to collect sample due to boulders, cobble; refusal
SD-10	Shallow/Surficial	0-6	29'9"	29.8	SED-38443-092518-JPF-016	25-Sep-18	10:30	632851.126	1483683.653	
SD-11	Shallow/Surficial	0-6	20'9"	20.8	SED-38443-092518-JPF-019	25-Sep-18	12:50	632666.874	1483810.496	
SD-11	Depth/Core	6-18	20'9"	20.8	SED-38443-092518-JPF-020	25-Sep-18	13:40	632666.874	1483810.496	
SD-12	Shallow/Surficial	0-6	8'5"	8.4	SED-38443-092618-JPF-030	26-Sep-18	12:35	632491.164	1483889.720	Sample location shifted west due to hard, gravel substrate with vegetation
SD-13	Shallow/Surficial	0-6	19'11"	19.9	SED-38443-092518-JPF-022	25-Sep-18	15:00	632377.003	1484052.723	
SD-13 (duplicate)	Duplicate of -022	0-6	19'11"	19.9	SED-38443-092518-JPF-023	25-Sep-18	15:15	632377.003	1484052.723	Duplicate sample
SD-13	Depth/Core	6-18	19'11"	19.9	SED-38443-092518-JPF-024	25-Sep-18	15:48	632377.003	1484052.723	
SD-14	Shallow/Surficial	0-6	26'3.5"	26.3	SED-38443-092618-JPF-026	26-Sep-18	9:15	632797.836	1483561.352	Sample location shifted south due to hard substrate
SD-14 (duplicate)	Duplicate of -026	0-6	26'3.5"	26.3	SED-38443-092618-JPF-027	26-Sep-18	9:30	632797.836	1483561.352	Duplicate sample
SD-14	Depth/Core	6-18	26'3.5"	26.3	SED-38443-092618-JPF-028	26-Sep-18	10:50	632797.836	1483561.352	
SD-15	Shallow/Surficial	0-6	26'0"	26.0	SED-38443-092618-JPF-029	26-Sep-18	11:38	632585.782	1483638.778	
SD-16	Shallow/Surficial	0-6	4'3.5"	4.3	SED-38443-092618-JPF-025	26-Sep-18	8:30	632335.689	1483928.248	
SD-17	Shallow/Surficial	0-6	14'5"	14.4	SED-38443-092118-JPF-009	21-Sep-18	13:26	632221.083	1483995.000	Sample location shifted slightly due to hard substrate
SD-18	Shallow/Surficial	0-6	10'7.5"	10.6	SED-38443-092418-JPF-013	24-Sep-18	14:30	632489.439	1483438.248	Sample location shifted east, proposed sample location was on/near shore
SD-19	Shallow/Surficial	0-6	24'2"	27.1	SED-38443-092418-JPF-011	24-Sep-18	12:40	632370.573	1483691.727	
SD-19	Depth/Core	6-18	27'1"	27.1	SED-38443-092418-JPF-012	24-Sep-18	13:45	632370.573	1483691.727	
SD-20	Shallow/Surficial	0-6	24'10"	24.8	SED-38443-092118-JPF-010	21-Sep-18	14:50	632287.687	1483683.690	Sample location shifted due east of rope swing
SD-17A	Shallow/Surficial	0-6	15'5"	15.4	SED-38443-100319-JPF-001	10/3/2019	14:00	1484020.03	632123.99	
SD-17A	Deep	6-18	15'5"	15.4	SED-38443-100319-JPF-002	10/3/2019	14:05	1484020.03	632123.99	
SD-17B	Shallow/Surficial	0-6	14'7	14.6	SED-38443-100319-JPF-003	10/3/2019	16:30	1483973.46	632171.38	
SD-17B	Duplicate of -003	0-6	14'7	14.6	SED-38443-100319-JPF-004	10/3/2019	16:30	1483973.46	632171.38	
SD-17C	Shallow/Surficial	0-6	16'8"	16.7	SED-38443-100419-JPF-005	10/4/2019	8:05	1484016.38	632295.61	
SD-17C	Deep	6-10	16'8"	16.7	SED-38443-100419-JPF-006	10/4/2019	8:10	1484016.38	632295.61	
SD-17D	Shallow/Surficial	0-6	17'3"	17.3	SED-38443-100419-JPF-007	10/4/2019	9:00	1483998.69	632271.95	
SD-17D	Deep	6-11	17'3"	17.3	SED-38443-100419-JPF-008	10/4/2019	9:10	1483998.69	632271.95	
SD-17E	Shallow/Surficial	0-6	12'4"	12.3	SED-38443-100419-JPF-009	10/4/2019	10:45	1483976.20	632227.20	New sample location; approximately 30' from concrete debris
SD-05A	Shallow/Surficial	0-6	12'6"	12.5	SED-38443-100419-JPF-010	10/4/2019	11:50	1484123.18	632722.43	New sample location - significant vegetation on substrate in area
SD-05B	Shallow/Surficial	0-6	12'3"	12.3	SED-38443-100419-JPF-011	10/4/2019	12:25	1484101.15	632718.34	New sample location - significant vegetation on substrate in area

Notes:

ft BSS - feet below substrate surface
ft BWS - feet below water surface

Table 2.4

Sediment Sample Description
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location	Sample Interval	Sample ID	Sediment Sample Depth (inches BSS)	Notes
SD-01	Shallow/Surficial	SED-38443-092518-JPF-021	0-6	Sample collected with Ponar; composite of 2 drops; black silt with well-graded angular sand and trace gravel, charcoal grey when homogenized; trace specks of silver sheen; earthy odor; soupy consistency, high moisture content
SD-02	Shallow/Surficial	SED-38443-092118-JPF-006	0-6	Sample collected with Ponar; composite of 7 drops; dark grey medium sand with silt and decayed organic debris, shell fragments; sand is uniform with brownish mottles; slight earthy odor
SD-02 (duplicate)	Duplicate of -006	SED-38443-092118-JPF-007	0-6	Duplicate sample
SD-03	Shallow/Surficial	SED-38443-092118-JPF-005	0-6	Sample collected with Ponar; composite of 4 drops; heavy vegetation on substrate; homogenous black silt with trace fine sand and vegetation debris, rootlets present; organic decay odor; high moisture content
SD-04	Shallow/Surficial	SED-38443-092118-JPF-003	0-6	Sample collected with Ponar; dark grey silt with trace fine sand; vegetation debris removed from sample; organic odor; high moisture content
SD-04	Depth/Core	SED-38443-092118-JPF-004	6-18	Sample collected with corer; composite of 3 cores; 28-30" recovery; homogenous dark grey silt with trace fine sand; slight earthy odor; consistency of toothpaste when homogenized
SD-05	Shallow/Surficial	SED-38443-092018-JPF-001	0-6	Sample collected with Ponar; composite of 10 drops; minimal recovery due to vegetation on substrate; dark grey silt with sand and organic debris; earthy odor; high moisture content
SD-05	Depth/Core	SED-38443-092118-JPF-002	6-18	Sample collected with corer; composite of 2 cores; 16-30" recovery; dark grey silt with sand when homogenized; slight PHC odor; few pieces of 1/2" gravel removed from sample
SD-06	Shallow/Surficial	SED-38443-092118-JPF-008	0-6	Sample collected with Ponar; composite of 3 drops; homogenous black silt with no vegetation; cannot feel any sand grains; few brownish mottles; slight earthy odor; consistency of pudding when homogenized
SD-06	Depth/Core	SED-38443-092518-JPF-018	6-18	Sample collected with corer; composite of 4 cores; 17-21" recovery; dark grey to black silt (charcoal grey when homogenized) with sand and clay; slight earthy odor; consistency of toothpaste when homogenized
SD-07	Shallow/Surficial	SED-38443-092518-JPF-017	0-6	Sample collected with Ponar; composite of 3 drops; homogenous black silt with well-graded sand (angular) and stiff clay at bottom of ponar (light grey color); significant vegetation removed from sample; shell fragments; organic earthy odor; high moisture content
SD-08	Shallow/Surficial	SED-38443-092518-JPF-015	0-6	Sample collected with Ponar; composite of 2 drops; homogenous charcoal grey to black silt with no sand and few brownish mottles/swirls; no vegetation or rooty debris present; earthy odor; consistency of pudding when homogenized
SD-08	Depth/Core	SED-38443-092518-JPF-014	6-17	Sample collected with corer; composite of 5 cores; 15.5-17" recovery, cores are consistent; charcoal dark grey silt with sand from lower core interval and minor gravel up to 1" diameter; no vegetation present; earthy odor; consistency of toothpaste when homogenized
SD-09	Shallow/Surficial	No sample	0-6	-
SD-10	Shallow/Surficial	SED-38443-092518-JPF-016	0-6	Sample collected with Ponar; composite of 4 drops; homogenous black silt with no sand, few brownish mottles/swirls; no vegetation or rooty debris present; organic earthy odor; consistency of pudding when homogenized
SD-11	Shallow/Surficial	SED-38443-092518-JPF-019	0-6	Sample collected with Ponar; composite of 2 drops; homogenous black silt with brown mottles/swirls, dark charcoal grey when homogenized; no vegetation present; cannot feel any sand grains; few brownish mottles; earthy odor; consistency of pudding when homogenized
SD-11	Depth/Core	SED-38443-092518-JPF-020	6-18	Sample collected with corer; composite of 4 cores; 19-23" recovery; dark charcoal grey silt; cannot feel any sand; organic earthy odor; clay layer observed between 17.5-21" below substrate
SD-12	Shallow/Surficial	SED-38443-092618-JPF-030	0-6	Sample collected with Ponar; significant vegetation observed on substrate; black silt with trace fine sand and vegetation and rootlets, dark charcoal grey when homogenized; strong earthy odor; consistency of pudding when homogenized; fine sand may be shell fragments
SD-13	Shallow/Surficial	SED-38443-092518-JPF-022	0-6	Sample collected with Ponar; composite of 3 drops; homogenous black silt with light brown mottles/swirls, dark charcoal grey to black when homogenized; few pieces of woody debris present; cannot feel any sand grains; few brownish mottles; organic earthy odor; consistency of pudding when homogenized
SD-13 (duplicate)	Duplicate of -022	SED-38443-092518-JPF-023	0-6	Duplicate sample
SD-13	Depth/Core	SED-38443-092518-JPF-024	6-18	Sample collected with corer; composite of 4 cores; 17.5-27" recovery, underlying substrate felt variable; black silt with coarse sand and few pieces of gravel, dark charcoal grey when homogenized; earthy odor

Table 2.4

Sediment Sample Description
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location	Sample Interval	Sample ID	Sediment Sample Depth (inches BSS)	Notes
SD-14	Shallow/Surficial	SED-38443-092618-JPF-026	0-6	Sample collected with Ponar; composite of 3 drops; homogenous dark charcoal grey to black silt with few brown mottles/swirls; no vegetation or rootlets present; cannot feel any sand grains; few brownish mottles; decay-like odor; consistency of pudding when homogenized
SD-14 (duplicate)	Duplicate of -026	SED-38443-092618-JPF-027	0-6	Duplicate sample
SD-14	Depth/Core	SED-38443-092618-JPF-028	6-18	Sample collected with corer; composite of 4 cores; 17-22" recovery; homogenous black silt with no sand or vegetation present, dark charcoal grey when homogenized; few pieces of woody debris; strong earthy odor; consistency of toothpaste when homogenized
SD-15	Shallow/Surficial	SED-38443-092618-JPF-029	0-6	Sample collected with Ponar; composite of 2 drops; black silt with subround gravel and coarse sand; brown mottles in silt material; strong organic earthy odor; consistency of pudding when homogenized; gravel up to 3/4" in diameter
SD-16	Shallow/Surficial	SED-38443-092618-JPF-025	0-6	Sample collected with Ponar; composite of 5 drops, coarse subangular to subround sand with grey-black silt, medium grey when homogenized; significant shell fragments and vegetation present; vegetation removed from sample; fishy odor; some gravel removed from sample; sample location adjacent a submerged log
SD-17	Shallow/Surficial	SED-38443-092118-JPF-009	0-6	Sample collected with Ponar; composite of 3 drops; greyish-brown silt with fine sand and fine gravel; woody debris; trace vegetation debris; organic earthy odor
SD-18	Shallow/Surficial	SED-38443-092418-JPF-013	0-6	Sample collected with Ponar; composite of 2 drops, heavy vegetation on substrate; dark grey to black silt with fine and uniform sand; detritus, woody debris present; vegetation removed from sample; earthy odor; underlying substrate feels hard when probed
SD-19	Shallow/Surficial	SED-38443-092418-JPF-011	0-6	Sample collected with Ponar; composite of 2 drops; black silt with trace fine sand, soft, saturated, very dark color with few brown swirls; strong organic/earthy odor
SD-19	Depth/Core	SED-38443-092418-JPF-012	6-18	Sample collected with corer; composite of 3 cores; 19-33" recovery; black silt with trace sand; earthy odor; clay layer observed between 29-33" below substrate; hard substrate below 33"
SD-20	Shallow/Surficial	SED-38443-092118-JPF-010	0-6	Sample collected with Ponar; composite of 2 drops; dark grey silt with trace fine sand, black silty fines present; detritus and leaf debris; organic earthy odor; consistency of pudding when homogenized
SD-17A	Shallow	SED-38443-100319-JPF-001	0-6	Sample collected with corer; dark grey-black silt with trace sand, some brownish swirls; earthy odor; consistency of pudding; no vegetation debris; 3 cores attempted in area, pockets of soft material between rock; recovery 17-18"; hard substrate below 18"
SD-17A	Deep	SED-38443-100319-JPF-002	6-18	Sample collected with corer; dark grey-black silt with some brownish swirls; earthy odor; consistency of pudding; no vegetation debris; 3 cores attempted in area, pockets of soft material between rock; recovery 17-18"; hard substrate below 18"
SD-17B	Shallow	SED-38443-100319-JPF-003	0-6	Sample collected with ponar; composite of one ponar drop; dark greyish-brown silt with trace fine sand; consistency of toothpaste; earthy odor; no vegetation debris; attempted numerous cores in area with approximately 6" recovery due to harder substrate below 6"
SD-17B	Duplicate of -003	SED-38443-100319-JPF-004	0-6	Sample collected with ponar; composite of one ponar drop; dark greyish-brown silt with trace fine sand; consistency of toothpaste; earthy odor; no vegetation debris; attempted numerous cores in area with approximately 6" recovery due to harder substrate below 6"
SD-17C	Shallow	SED-38443-100419-JPF-005	0-6	Sample collected with corer; dark grey-black silt with trace fine sand; slight PHC odor; consistency of pudding; no vegetation debris; 3 cores collected, sample composite of 3 cores, recovery 9-10"; gravel underlying sediment
SD-17C	Deep	SED-38443-100419-JPF-006	6-10	Sample collected with corer; dark greyish-brown silt with trace sand and angular gravel; gravel up to 1/2" diameter earthy odor; slightly lighter in color than sample -005; 3 cores collected, sample composite of 3 cores, recovery 9-10"; gravel underlying sediment
SD-17D	Shallow	SED-38443-100419-JPF-007	0-6	Sample collected with corer; dark brown-grey silt with trace sand; consistency of toothpaste; earthy odor; attempted 5 cores in area with 10.5-11" recovery; sample a composite of two cores;sediment feels very soft with underlying gravel/rock when probed
SD-17D	Deep	SED-38443-100419-JPF-008	6-11	Sample collected with corer; dark brown-grey silt with clay and sand; consistency of toothpaste; earthy odor; attempted 5 cores in area with 10.5-11" recovery; sample a composite of two cores;sediment feels very soft with underlying gravel/rock when probed
SD-17E	Shallow	SED-38443-100419-JPF-009	0-6	Sample collected with ponar; sample a composite of two ponar drops (MS/MSD sample) dark brownish-grey sandy silt with trace fine gravel; sand is fine to medium; gravel is subangular to angular; earthy odor; vegetation and shell fragments present; attempted 6 cores west of SD-17 with gravel/rock refusal and maximum 8" recovery; ponar used to collect sample
SD-05A	Shallow	SED-38443-100419-JPF-010	0-6	Sample collected with ponar; black silt with clay; cannot feel any sand grains; significant vegetation; consistency of pudding when homogenized; also attempted 2 cores with 9.5" recovery, but feels more like 18" of sediment when probed
SD-05B	Shallow	SED-38443-100419-JPF-011	0-6	Sample collected with ponar; dark black-grey sand silt; sand grains feel fine, uniform; odorless; vegetation in area

Note:

ft BSS - feet below substrate surface

Table 2.5

Water Level Data
South Dayton Dump Landfill Site
Moraine, Ohio

Location	Coordinates[1] Easting	Coordinates[1] Northing	Reference Top of Riser feet	October 2, 2017 Depth to Water ft BREF*	October 2, 2017 Groundwater Elevation feet	March 22, 2018 Depth to Water ft BREF*	March 22, 2018 Groundwater Elevation feet	June 29, 2018 Depth to Water ft BREF*	June 29, 2018 Groundwater Elevation feet	September 26, 2018 Depth to Water ft BREF*	September 26, 2018 Groundwater Elevation ft	October 1, 2018 Depth to Water ft BREF*	October 1, 2018 Groundwater Elevation feet	December 5-6, 2018 Depth to Water ft BREF	December 5-6, 2018 Groundwater Elevation feet	October 3, 2019 Depth to Water ft BREF	October 3, 2019 Groundwater Elevation feet	October 4, 2019 Depth to Water ft BREF	October 4, 2019 Groundwater Elevation feet
MW-101A	1484347.13	633062.05	725.00	16.68	708.32	13.96	711.04	14.80	710.20			15.61	709.39	13.68	711.32			16.69	708.31
MW-102	1483652.72	633238.74	717.63	9.64	707.99	7.09	710.54	7.51	710.12			8.31	709.32	6.10	711.53			n/a	n/a
MW-204	1484621.37	633046.28	722.69	13.89	708.80	11.34	711.35	12.06	710.63			13.16	709.53	11.36	711.33			13.89	708.80
MW-209	1484343.34	632718.83	714.26	5.73	708.53	3.38	710.88	4.03	710.23			5.16	709.10	3.21	711.05			5.67	708.59
MW-209A	1484337.98	632746.34	714.64	6.09	708.55	3.79	710.85	4.40	710.24			5.56	709.08	3.67	710.97			6.01	708.63
MW-212	1484537.84	632746.38	728.83	20.4	708.43	17.95	710.88	18.58	710.25			19.67	709.16	17.88	710.95			20.22	708.61
MW-218A	1483339.09	632429.81	722.70	14.85	707.85	12.46	710.24	12.79	709.91			13.57	709.13	11.42	711.28			14.85	707.85
MW-218B	1483331.81	632433.77	722.97	14.53	708.44	12.61	710.36	13.14	709.83			14.09	708.88	12.38	710.59			14.46	708.51
MW-233	1483784.00	633208.70	730.08	n/a	n/a	19.37	710.71	19.9	710.18			20.8	709.28	18.50	711.58			22.00	708.08
MW-234	1483714.22	632168.22	724.07	n/a	n/a	n/a	n/a	n/a	n/a			14.65	709.42	12.75	711.32			15.82	708.25
			Reference Staff Gauge feet	**October 2, 2017 Water Depth**	**October 2, 2017 Surface Water Elevation**	**March 22, 2018 Water Depth**	**March 22, 2018 Surface Water Elevation**	**June 29, 2018 Water Depth**	**June 29, 2018 Surface Water Elevation**	**September 26, 2018 Water Depth feet**	**September 26, 2018 Surface Water Elevation feet**	**October 1, 2018 Water Depth**	**October 1, 2018 Surface Water Elevation**	**December 5-6, 2018 Water Depth**	**December 5-6, 2018 Surface Water Elevation**	**October 3, 2019 Water Depth feet**	**October 3, 2019 Surface Water Elevation feet**	**October 4, 2019 Water Depth feet**	**October 4, 2019 Surface Water Elevation feet**
SG-4 (QP SW)	1483414.07	632461.09	708.59	n/a[2]		n/a[2]		n/a[2]		1.83	710.42	n/a[3]		n/a[3]		0.35	708.94	n/a[4]	

Notes:

[1] - North American Datum of 1983 (NAD83), U.S. Survey feet
[2] - Not installed
[3] - Submerged in Quarry Pond
[4] -Not measured
ft BREF - feet below reference
Reference point is Top of Riser at each monitoring well

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-3**	**SW-4**	**SW-5**
Sample ID:		**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
Sample Date:		**9/18/2018**	**9/18/2018**	**9/19/2018**	**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**
Sample Depth:		**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
							Duplicate			
Parameters	**Units**									
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 U	0.13 UJ	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	**0.41 J**	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	**2.9 J**	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	**1.1 J**	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	**0.88 J**	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	13 U	5.4 U	5.4 U	**5.7 J**	**17 J**	5.4 U	5.4 U	5.4 U
Benzene	µg/L	0.13 U	**0.21 J**	0.13 U	0.36 U	0.13 U	0.13 U	0.13 U	0.21 U	0.21 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 U	0.76 UJ	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	**0.21 J**	0.16 U	**0.22 J**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 UJ	0.61 U	0.61 U	0.61 U	0.61 UJ	0.61 UJ
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	**0.17 J**	**0.34 J**	0.11 U	**0.11 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	**0.58 J**	**1.2 J**	**0.29 J**	**0.40 J**	**0.27 J**	**0.23 J**	**0.24 J**	**0.31 J**	**0.23 J**
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	**0.28 J**	**0.56 J**	**0.12 J**	**0.20 J**	0.090 U	**0.18 J**	0.090 U	**0.14 J**	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	**0.82 J**	**2.6**	**0.35 J**	**3.6**	**0.24 J**	**0.22 J**	**0.35 J**	**0.46 J**	**0.30 J**
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 UJ	0.67 U	0.67 U	0.67 U	0.67 UJ	0.67 UJ
Trichloroethene	µg/L	0.10 U	**0.21 J**	0.10 U	**0.29 J**	0.10 U	0.10 U	**0.20 J**	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	**0.86 J**	**1.8 J**	**0.41 J**	**0.60 J**	**0.27 J**	**0.41 J**	**0.24 J**	**0.45 J**	**0.23 J**
Semivolatile Organic Compounds										
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.55 U	0.54 U	0.55 U	0.53 UJ	0.55 U	0.53 U	0.55 U	0.55 UJ	0.55 U
2,4,5-Trichlorophenol	µg/L	2.0 U	1.9 U	2.0 U	1.9 U	2.0 U	1.9 U	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.8 U	1.8 U	1.7 U	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U
2,4-Dichlorophenol	µg/L	0.26 U	0.26 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U	0.26 U	0.26 U
2,4-Dimethylphenol	µg/L	0.51 U	0.51 U	0.52 U	0.50 U	0.52 U	0.50 U	0.52 U	0.52 U	0.52 U
2,4-Dinitrophenol	µg/L	6.1 U	6.1 U	6.2 U	6.0 U	6.2 U	6.0 U	6.2 U	6.2 U	6.2 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.1 U	2.0 U	2.1 U	2.0 U	2.1 U	2.1 U	2.1 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.0 U	2.1 U	2.1 U	2.1 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-3**	**SW-4**	**SW-5**
Sample ID:		**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
Sample Date:		**9/18/2018**	**9/18/2018**	**9/19/2018**	**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**
Sample Depth:		**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
							Duplicate			
Parameters	**Units**									
2-Chloronaphthalene	µg/L	0.48 U	0.47 U	0.48 U	0.47 U	0.48 U	0.46 U	0.48 U	0.48 U	0.48 U
2-Chlorophenol	µg/L	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.26 U	0.27 U	0.27 U	0.27 U
2-Methylnaphthalene	µg/L	0.11 U	**0.12 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.21 U	0.20 U	0.21 U	0.20 U	0.21 U	0.20 U	0.21 U	0.21 U	0.21 U
2-Nitroaniline	µg/L	0.50 U	0.50 U	0.51 U	0.50 U	0.51 U	0.49 U	0.51 U	0.51 U	0.51 U
2-Nitrophenol	µg/L	0.56 U	0.55 U	0.56 U	0.55 U	0.56 U	0.54 U	0.56 U	0.56 U	0.56 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	1.2 U
3-Nitroaniline	µg/L	0.56 U	0.55 U	0.57 U	0.55 U	0.57 U	0.54 U	0.57 U	0.57 U	0.57 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.8 U	2.8 U	2.7 U	2.8 U	2.7 U	2.8 U	2.8 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.49 U	0.49 U	0.50 U	0.48 U	0.50 U	0.48 U	0.50 U	0.50 U	0.50 U
4-Chloro-3-methylphenol	µg/L	0.29 U	0.29 U	0.30 U	0.29 U	0.30 U	0.28 U	0.30 U	0.30 U	0.30 U
4-Chloroaniline	µg/L	0.31 U	0.31 U	0.32 U	0.31 U	0.32 U	0.30 U	0.32 U	0.32 U	0.32 U
4-Chlorophenyl phenyl ether	µg/L	0.55 U	0.54 U	0.55 U	0.53 U	0.55 U	0.53 U	0.55 U	0.55 U	0.55 U
4-Nitroaniline	µg/L	0.91 U	0.90 U	0.92 U	0.89 U	0.92 U	0.88 U	0.92 U	0.92 U	0.92 U
4-Nitrophenol	µg/L	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.2 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.13 U	0.13 U
Acetophenone	µg/L	0.36 U	0.36 U	0.37 U	0.36 U	0.37 U	0.35 U	0.37 U	0.37 U	0.37 U
Anthracene	µg/L	0.13 U	0.13 U	0.14 U	0.13 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
Atrazine	µg/L	0.94 U	0.93 U	0.95 U	0.92 U	0.95 U	0.92 U	0.95 U	0.95 U	0.95 U
Benzaldehyde	µg/L	0.75 U	0.74 U	0.76 U	0.74 U	0.76 U	0.73 U	0.76 U	0.76 U	0.76 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U	0.17 U	0.17 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.17 U	0.18 U	0.17 U	0.18 U	0.17 U	0.18 U	0.18 U	0.18 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.49 U	0.48 U	0.49 U	0.48 U	0.49 U	0.47 U	0.49 U	0.49 U	0.49 U
bis(2-Chloroethoxy)methane	µg/L	0.45 U	0.45 U	0.46 U	0.44 U	0.46 U	0.44 U	0.46 U	0.46 U	0.46 U
bis(2-Chloroethyl)ether	µg/L	0.40 U	0.39 U	0.40 U	0.39 U	0.40 U	0.39 U	0.40 U	0.40 U	0.40 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.1 U	2.2 U	2.2 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.66 U	0.65 U	0.67 U	0.65 U	0.67 U	0.64 U	0.67 U	0.67 U	0.67 U
Caprolactam	µg/L	0.92 U	0.92 U	0.93 U	0.91 U	0.93 U	0.90 U	0.93 U	0.93 U	R
Carbazole	µg/L	0.49 U	0.48 U	0.49 U	0.48 U	0.49 U	0.47 U	0.49 U	0.49 U	0.49 U
Chrysene	µg/L	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.56 U	0.55 U	0.56 U	0.54 U	0.56 U	0.54 U	0.56 U	0.56 U	0.56 U
Diethyl phthalate	µg/L	3.8 U	3.7 U	3.8 U	3.7 U	3.8 U	3.7 U	3.8 U	3.8 U	3.8 U
Dimethyl phthalate	µg/L	0.51 U	0.50 U	0.52 U	0.50 U	0.52 U	0.50 U	0.52 U	0.52 U	0.52 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.81 U	0.80 U	0.82 U	0.80 U	0.82 U	0.79 U	0.82 U	0.82 U	0.82 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U
Fluorene	µg/L	0.17 U	0.17 U	0.17 U	0.16 U	0.17 U	0.16 U	0.17 U	0.17 U	0.17 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U
Hexachlorobutadiene	µg/L	0.54 U	0.53 U	0.54 U	0.53 U	0.54 U	0.52 U	0.54 U	0.54 U	0.54 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.8 U	1.7 U	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U
Hexachloroethane	µg/L	0.39 U	0.39 U	0.40 U	0.38 U	0.40 U	0.38 U	0.40 U	0.40 U	0.40 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.14 U	0.13 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
Isophorone	µg/L	0.32 U	0.32 U	0.32 U	0.31 U	0.32 U	0.31 U	0.32 U	0.32 U	0.32 U
Naphthalene	µg/L	0.11 U	**0.17 J**	0.11 U	0.11 U	0.11 U	0.10 U	0.11 U	0.11 U	0.11 U
Nitrobenzene	µg/L	0.51 U	0.50 U	0.51 U	0.50 U	0.51 U	0.49 U	0.51 U	0.51 U	0.51 U
N-Nitrosodi-n-propylamine	µg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.24 U	0.25 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.43 U	0.44 U	0.43 U	0.44 U	0.42 U	0.44 U	0.44 U	0.44 U
Pentachlorophenol	µg/L	3.1 U	3.0 U	3.1 U	3.0 U	3.1 U	3.0 U	3.1 U	3.1 U	3.1 U
Phenanthrene	µg/L	0.17 U	0.16 U	0.17 U	0.16 U	0.17 U	0.16 U	0.17 U	0.17 U	0.17 U
Phenol	µg/L	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.13 U	0.13 U
Pyrene	µg/L	0.17 U	0.17 U	0.18 U	0.17 U	0.18 U	0.17 U	0.18 U	0.18 U	0.18 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-3**	**SW-4**	**SW-5**
Sample ID:		**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
Sample Date:		**9/18/2018**	**9/18/2018**	**9/19/2018**	**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**
Sample Depth:		**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
							Duplicate			
Parameters	**Units**									
Metals										
Aluminum	µg/L	34 U	**39 J**	34 U	34 U	34 U	34 U	**110**	**42 J**	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	**2.1 J**	**13**	**1.8 J**	**14**	**1.7 J**	**1.9 J**	**2.0 J**	**1.8 J**	**2.0 J**
Arsenic (dissolved)	µg/L	**1.7 J**	**10**	**1.6 J**	**12**	**1.6 J**	**1.5 J**	**1.6 J**	**1.8 J**	**1.9 J**
Barium	µg/L	**86**	**180**	**78**	**250**	**76**	**77**	**79**	**81**	**82**
Barium (dissolved)	µg/L	**79**	**150**	**77**	**200**	**79**	**76**	**74**	**80**	**79**
Beryllium	µg/L	0.31 U	**0.67 J**	0.31 U	0.31 U	0.31 U	0.31 U	**0.47 J**	0.31 U	**0.55 J**
Beryllium (dissolved)	µg/L	0.31 U	**0.57 J**	0.31 U	0.31 U	0.31 U	0.31 U	**0.88 J**	0.31 U	**0.75 J**
Cadmium	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Calcium	µg/L	**40000**	**70000**	**36000**	**80000**	**36000**	**36000**	**46000**	**37000**	**37000**
Calcium (dissolved)	µg/L	**37000**	**64000**	**35000**	**71000**	**37000**	**35000**	**45000**	**37000**	**36000**
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	**0.60 J**	0.19 U	**0.64 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	**0.41 J**	0.19 U	**0.43 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	**4000**	47 U	**7400**	47 U	47 U	**150**	**60 J**	**49 J**
Iron (dissolved)	µg/L	47 U	**3200**	47 U	**6300**	47 U	47 U	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	**27000**	**30000**	**24000**	**32000**	**24000**	**24000**	**26000**	**25000**	**25000**
Magnesium (dissolved)	µg/L	**25000**	**29000**	**24000**	**29000**	**25000**	**24000**	**26000**	**25000**	**24000**
Manganese	µg/L	**7.4**	**2000**	**5.2**	**1800**	**4.7 J**	**4.9 J**	**17**	**7.6**	**7.4**
Manganese (dissolved)	µg/L	2.1 U	**1600**	2.1 U	**1600**	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	0.48 U	**2.6**	0.44 U	**2.2**	0.21 U	0.28 U	0.34 U	0.38 U	0.35 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	**5900**	**6300**	**5400**	**6500**	**5300**	**5400**	**5600**	**5500**	**5600**
Potassium (dissolved)	µg/L	**5600**	**6200**	**5400**	**6100**	**5500**	**5300**	**5500**	**5600**	**5500**
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	**22000**	**25000**	**20000**	**27000**	**24000**	**20000**	**21000**	**21000**	**21000**
Sodium (dissolved)	µg/L	**21000**	**24000**	**20000**	**25000**	**21000**	**20000**	**21000**	**21000**	**21000**
Thallium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	**1.0 J**	0.82 U	**1.4 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	**1.1 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
PCBs										
Aroclor-1016 (PCB-1016)	µg/L	0.056 U	0.58 U	0.054 U	0.055 U	0.058 U	0.057 U	0.058 U	0.055 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.057 U	0.59 U	0.055 U	0.056 U	0.059 U	0.058 U	0.059 U	0.056 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.074 U	0.76 U	0.071 U	0.073 U	0.076 U	0.076 U	0.077 U	0.073 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.076 U	0.78 U	0.073 U	0.075 U	0.078 U	0.078 U	0.079 U	0.075 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.050 U	0.52 U	0.048 U	0.049 U	0.052 U	0.051 U	0.052 U	0.050 U	0.049 U
Aroclor-1254 (PCB-1254)	µg/L	0.040 U	0.41 U	**0.074 J**	0.039 U	0.041 U	0.041 U	0.042 U	0.040 U	0.039 U
Aroclor-1260 (PCB-1260)	µg/L	0.046 U	0.47 U	0.044 U	0.045 U	0.047 U	0.047 U	0.048 U	0.046 U	0.045 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-3**	**SW-4**	**SW-5**
Sample ID:		**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
Sample Date:		**9/18/2018**	**9/18/2018**	**9/19/2018**	**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**
Sample Depth:		**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
							Duplicate			
Parameters	**Units**									
Herbicides										
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Pesticides										
4,4'-DDD	µg/L	0.0053 U	0.27 U	0.0051 U	0.26 U	0.0055 U	0.0054 U	0.0055 U	0.0054 U	0.0052 U
4,4'-DDE	µg/L	0.0043 U	0.22 U	0.0041 U	0.21 U	0.0044 U	0.0044 U	0.0045 U	0.0044 U	0.0042 U
4,4'-DDT	µg/L	0.0048 U	0.25 U	0.0046 U	0.24 U	0.0049 U	0.0049 U	0.0050 U	0.0049 U	0.0047 U
Aldrin	µg/L	0.0024 U	0.0025 U	0.0023 U	0.12 U	0.0025 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U
alpha-BHC	µg/L	0.0020 U	0.10 U	0.0019 U	0.098 U	0.0021 U	0.0020 U	0.0021 U	0.0020 U	0.0020 U
alpha-Chlordane	µg/L	0.0032 U	0.0033 U	0.0031 U	0.16 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0031 U
beta-BHC	µg/L	0.0046 U	0.24 U	0.0044 U	0.23 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0045 U
delta-BHC	µg/L	0.0043 U	0.22 U	0.0041 U	0.21 U	0.0044 U	0.0044 U	0.0045 U	0.0044 U	0.0042 U
Dieldrin	µg/L	0.0023 U	0.0024 U	0.0022 U	0.11 U	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0023 U
Endosulfan I	µg/L	0.0037 U	0.0038 U	0.0036 U	0.18 U	0.0038 U	0.0038 U	0.0039 U	0.0038 U	0.0036 U
Endosulfan II	µg/L	0.0023 U	0.12 U	0.0022 U	0.11 U	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0023 U
Endosulfan sulfate	µg/L	0.0037 U	0.19 U	0.0036 U	0.18 U	0.0038 U	0.0038 U	0.0039 U	0.0038 U	0.0036 U
Endrin	µg/L	0.0025 U	0.0026 U	0.0024 U	0.12 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0025 U
Endrin aldehyde	µg/L	0.0046 U	0.24 U	0.0044 U	0.23 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U	0.0045 U
Endrin ketone	µg/L	0.0040 U	0.21 U	0.0038 U	0.20 U	0.0041 U	0.0041 U	0.0042 U	0.0041 U	0.0039 U
gamma-BHC (lindane)	µg/L	0.0025 U	0.13 U	0.0024 U	0.12 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0025 U
gamma-Chlordane	µg/L	0.0050 U	0.0052 U	0.0048 U	0.25 U	0.0052 U	0.0051 U	0.0052 U	0.0051 U	0.0049 U
Heptachlor	µg/L	0.0033 U	0.0034 U	0.0032 U	0.16 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0032 U
Heptachlor epoxide	µg/L	0.0026 U	0.0027 U	0.0025 U	0.13 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0047 U	0.24 U	0.0045 U	0.23 U	0.0048 U	0.0048 U	0.0049 U	0.0048 U	0.0046 U
Toxaphene	µg/L	0.058 U	0.060 U	0.056 U	2.8 U	0.060 U	0.059 U	0.061 U	0.059 U	0.057 U
General Chemistry										
Chloride	mg/L	**30**	**34**	**30**	**36**	**30**	**30**	**31**	**30**	**30**
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	**0.15**	**0.17**	**0.19**	**0.19**	**0.16**	**0.16**	**0.17**	**0.17**	**0.17**
Hardness	mg/L	**210**	**300**	**190**	**330**	**190**	**190**	**220**	**200**	**200**
Hardness, carbonate	mg/L	**99**	**170**	**89**	**200**	**89**	**90**	**110**	**92**	**93**
Hardness, magnesium	mg/L	**110**	**120**	**100**	**130**	**99**	**100**	**110**	**100**	**100**
Nitrate (as N)	µg/L	14 U	14 U	14 U	14 U	14 U	14 U	**410**	**14 J**	14 U
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
Sulfate	mg/L	**22**	**8.7**	**22**	**9.9**	**22**	**22**	**25**	**22**	**22**
Sulfide	mg/L	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	**250**	**360**	**240**	**390**	**260**	**250**	**280**	**240**	**250**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-6**	**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**
Sample ID:		**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
Sample Date:		**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**	**9/19/2018**	**9/18/2018**	**9/18/2018**
Sample Depth:		**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS Duplicate**
Parameters	**Units**								
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 U	0.13 U	0.13 UJ	0.13 UJ	0.13 UJ	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	**36**	**5.4 J**	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 U	0.76 U	0.76 UJ	0.76 UJ	0.76 UJ	0.76 UJ	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U	**0.11 J**	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	**0.15 J**	**0.26 J**	**0.16 J**	**0.31 J**	**0.38 J**	**0.28 J**	**0.33 J**	**0.30 J**
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	**0.12 J**	0.090 U	**0.10 J**	**0.18 J**	**0.12 J**	**0.13 J**	**0.11 J**
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	**0.20 J**	**0.31 J**	**0.29 J**	**0.40 J**	**0.72 J**	**0.35 J**	**0.45 J**	**0.42 J**
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	**0.23 J**	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	**0.15 J**	**0.38 J**	**0.16 J**	**0.41 J**	**0.56 J**	**0.40 J**	**0.46 J**	**0.41 J**
Semivolatile Organic Compounds									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.56 U	0.56 U	0.59 U	0.53 U	0.55 U	0.53 U	0.57 U	0.53 U
2,4,5-Trichlorophenol	µg/L	2.0 U	2.0 U	2.1 U	1.9 U	2.0 U	1.9 U	2.0 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.8 U	1.9 U	1.7 U	1.8 U	1.7 U	1.9 U	1.7 U
2,4-Dichlorophenol	µg/L	0.26 U	0.27 U	0.28 U	0.25 U	0.26 U	0.25 U	0.27 U	0.25 U
2,4-Dimethylphenol	µg/L	0.52 U	0.53 U	0.56 U	0.50 U	0.51 U	0.50 U	0.53 U	0.50 U
2,4-Dinitrophenol	µg/L	6.3 U	6.3 U	6.7 U	6.0 U	6.1 U	6.0 U	6.4 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.2 U	2.3 U	2.0 U	2.1 U	2.1 U	2.2 U	2.0 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-6**	**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**
Sample ID:		**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
Sample Date:		**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**	**9/19/2018**	**9/18/2018**	**9/18/2018**
Sample Depth:		**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS Duplicate**
Parameters	**Units**								
2-Chloronaphthalene	µg/L	0.49 U	0.49 U	0.52 U	0.46 U	0.48 U	0.47 U	0.50 U	0.46 U
2-Chlorophenol	µg/L	0.28 U	0.28 U	0.29 U	0.26 U	0.27 U	0.27 U	0.28 U	0.26 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.12 U	**0.14 J**	0.11 U	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.21 U	0.21 U	0.22 U	0.20 U	0.21 U	0.20 U	0.22 U	0.20 U
2-Nitroaniline	µg/L	0.52 U	0.52 U	0.55 U	0.49 U	0.50 U	0.50 U	0.53 U	0.49 U
2-Nitrophenol	µg/L	0.57 U	0.58 U	0.61 U	0.54 U	0.56 U	0.55 U	0.58 U	0.54 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.21 U	0.18 U	0.19 U	0.19 U	0.20 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U
3-Nitroaniline	µg/L	0.57 U	0.58 U	0.61 U	0.54 U	0.56 U	0.55 U	0.58 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.9 U	3.0 U	2.7 U	2.8 U	2.7 U	2.9 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.50 U	0.51 U	0.54 U	0.48 U	0.49 U	0.48 U	0.51 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.30 U	0.30 U	0.32 U	0.28 U	0.29 U	0.29 U	0.31 U	0.28 U
4-Chloroaniline	µg/L	0.32 U	0.32 U	0.34 U	0.30 U	0.31 U	0.31 U	0.33 U	0.30 U
4-Chlorophenyl phenyl ether	µg/L	0.56 U	0.56 U	0.59 U	0.53 U	0.55 U	0.53 U	0.57 U	0.53 U
4-Nitroaniline	µg/L	0.93 U	0.94 U	0.99 U	0.88 U	0.91 U	0.89 U	0.95 U	0.88 U
4-Nitrophenol	µg/L	2.2 U	2.2 U	2.3 U	2.1 U	2.2 U	2.1 U	2.2 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.18 U	0.18 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U
Acenaphthylene	µg/L	0.13 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U
Acetophenone	µg/L	0.37 U	0.37 U	0.39 U	0.35 U	0.36 U	0.36 U	0.38 U	0.35 U
Anthracene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U
Atrazine	µg/L	0.96 U	0.97 U	1.0 U	0.92 U	0.94 U	0.92 U	0.98 U	0.92 U
Benzaldehyde	µg/L	0.77 U	0.77 U	0.82 U	0.73 U	0.75 U	0.74 U	0.78 U	0.73 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U	0.17 U	0.17 U	0.18 U	0.16 U
Benzo(a)pyrene	µg/L	0.17 U	0.18 U	0.19 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.18 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U	0.14 U	0.14 U	0.14 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.50 U	0.50 U	0.53 U	0.47 U	0.49 U	0.48 U	0.51 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.46 U	0.46 U	0.49 U	0.44 U	0.45 U	0.44 U	0.47 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.41 U	0.41 U	0.43 U	0.39 U	0.40 U	0.39 U	0.41 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.3 U	2.4 U	2.1 U	2.2 U	2.2 U	2.3 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.67 U	0.68 U	0.72 U	0.64 U	0.66 U	0.65 U	**7.9 J**	0.64 UJ
Caprolactam	µg/L	0.94 U	0.95 U	1.0 U	0.90 U	0.92 U	0.91 U	0.96 U	0.90 U
Carbazole	µg/L	0.49 U	0.50 U	0.53 U	0.47 U	0.49 U	0.48 U	0.51 U	0.47 U
Chrysene	µg/L	0.19 U	0.19 U	0.20 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
Dibenzofuran	µg/L	0.57 U	0.57 U	0.60 U	0.54 U	0.56 U	0.54 U	0.58 U	0.54 U
Diethyl phthalate	µg/L	3.9 U	3.9 U	4.1 U	3.7 U	3.8 U	3.7 U	3.9 U	3.7 U
Dimethyl phthalate	µg/L	0.52 U	0.53 U	0.55 U	0.50 U	0.51 U	0.50 U	0.53 U	0.50 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.9 U	1.7 U	1.8 U	1.8 U	1.9 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	0.83 U	0.84 U	0.88 U	0.79 U	0.81 U	0.80 U	0.85 U	0.79 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U	0.16 U	0.16 U	0.16 U	0.15 U
Fluorene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U	0.17 U	0.16 U	0.17 U	0.16 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U	0.16 U	0.16 U	0.17 U	0.15 U
Hexachlorobutadiene	µg/L	0.55 U	0.55 U	0.58 U	0.52 U	0.54 U	0.53 U	0.56 U	0.52 U
Hexachlorocyclopentadiene	µg/L	1.8 U	1.8 U	1.9 U	1.7 U	1.7 U	1.7 U	1.8 U	1.7 U
Hexachloroethane	µg/L	0.40 U	0.40 U	0.42 U	0.38 U	0.39 U	0.38 U	0.41 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U
Isophorone	µg/L	0.33 U	0.33 U	0.35 U	0.31 U	0.32 U	0.31 U	0.33 U	0.31 U
Naphthalene	µg/L	0.11 U	0.11 U	0.12 U	**0.17 J**	**0.15 J**	0.11 U	0.11 U	0.10 U
Nitrobenzene	µg/L	0.52 U	0.52 U	0.55 U	0.49 U	0.51 U	0.50 U	0.53 U	0.49 U
N-Nitrosodi-n-propylamine	µg/L	0.26 U	0.26 U	0.27 U	0.24 U	0.25 U	0.25 U	0.26 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.45 U	0.47 U	0.42 U	0.44 U	0.43 U	0.45 U	0.42 U
Pentachlorophenol	µg/L	3.1 U	3.2 U	3.3 U	3.0 U	3.1 U	3.0 U	3.2 U	3.0 U
Phenanthrene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U	0.17 U	0.16 U	0.17 U	0.16 U
Phenol	µg/L	0.13 U	0.13 U	0.14 U	0.12 U	0.13 U	0.12 U	0.13 U	0.12 U
Pyrene	µg/L	0.18 U	0.18 U	0.19 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-6**	**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**
Sample ID:		**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
Sample Date:		**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**	**9/19/2018**	**9/18/2018**	**9/18/2018**
Sample Depth:		**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS Duplicate**
Parameters	**Units**								
Metals									
Aluminum	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	**37 J**
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	**1.9 J**	**1.8 J**	**2.0 J**	**1.9 J**	**2.2 J**	**2.0 J**	**1.8 J**	**1.8 J**
Arsenic (dissolved)	µg/L	**1.7 J**	**1.7 J**	**1.7 J**	**1.8 J**	**1.8 J**	**1.9 J**	**1.9 J**	**2.0 J**
Barium	µg/L	**82**	**76**	**73**	**79**	**65**	**81**	**84**	**81**
Barium (dissolved)	µg/L	**81**	**77**	**69**	**82**	**62**	**75**	**83**	**82**
Beryllium	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	**0.67 J**	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Calcium	µg/L	**38000**	**35000**	**36000**	**36000**	**47000**	**37000**	**38000**	**37000**
Calcium (dissolved)	µg/L	**37000**	**35000**	**37000**	**38000**	**45000**	**35000**	**38000**	**38000**
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	47 U	**110**	47 U	**80 J**	47 U	**52 J**	**52 J**
Iron (dissolved)	µg/L	47 U	47 U	47 U	47 U	47 U	**91 J**	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	**26000**	**24000**	**24000**	**24000**	**26000**	**25000**	**26000**	**25000**
Magnesium (dissolved)	µg/L	**25000**	**24000**	**24000**	**26000**	**25000**	**23000**	**26000**	**26000**
Manganese	µg/L	**7.7**	**5.2**	**18**	**4.4 J**	**16**	**5.5**	**7.6**	**7.2**
Manganese (dissolved)	µg/L	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	0.45 U	0.27 U	0.40 U	0.44 U	0.50 U	0.41 U	0.35 U	0.35 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	**5600**	**5300**	**5200**	**5500**	**5700**	**5600**	**5800**	**5600**
Potassium (dissolved)	µg/L	**5500**	**5300**	**5300**	**5700**	**5600**	**5400**	**5700**	**5700**
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	**21000**	**20000**	**20000**	**21000**	**22000**	**21000**	**22000**	**21000**
Sodium (dissolved)	µg/L	**21000**	**20000**	**20000**	**22000**	**21000**	**20000**	**22000**	**22000**
Thallium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
PCBs									
Aroclor-1016 (PCB-1016)	µg/L	0.057 U	0.054 U	0.057 U	0.053 U	0.055 U	0.057 U	0.057 U	0.054 U
Aroclor-1221 (PCB-1221)	µg/L	0.058 U	0.055 U	0.058 U	0.054 U	0.056 U	0.058 U	0.058 U	0.055 U
Aroclor-1232 (PCB-1232)	µg/L	0.075 U	0.071 U	0.076 U	0.070 U	0.073 U	0.076 U	0.076 U	0.071 U
Aroclor-1242 (PCB-1242)	µg/L	0.077 U	0.073 U	0.078 U	0.072 U	0.075 U	0.078 U	0.078 U	0.073 U
Aroclor-1248 (PCB-1248)	µg/L	0.051 U	0.048 U	0.051 U	0.048 U	0.050 U	0.051 U	0.051 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.040 U	0.038 U	0.041 U	0.038 U	0.040 U	0.041 U	0.041 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.046 U	0.044 U	0.047 U	0.044 U	0.046 U	0.047 U	0.047 U	0.044 U

Table 3.1a

Summary of Analytical Results
Surface Water Samples
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SW-6**	**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**
Sample ID:		**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
Sample Date:		**9/19/2018**	**9/20/2018**	**9/20/2018**	**9/19/2018**	**9/19/2018**	**9/19/2018**	**9/18/2018**	**9/18/2018**
Sample Depth:		**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS Duplicate**
Parameters	**Units**								
Herbicides									
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Pesticides									
4,4'-DDD	µg/L	0.0054 U	0.0051 U	0.0054 U	0.0050 U	0.0052 U	0.0054 U	0.0054 U	0.0051 U
4,4'-DDE	µg/L	0.0043 U	0.0041 U	0.0044 U	0.0041 U	0.0043 U	0.0044 U	0.0044 U	0.0041 U
4,4'-DDT	µg/L	0.0048 U	0.0046 U	0.0049 U	0.0046 U	0.0048 U	0.0049 U	0.0049 U	0.0046 U
Aldrin	µg/L	0.0024 U	0.0023 U	0.0024 U	0.0023 U	0.0024 U	0.0024 U	0.0024 U	0.0023 U
alpha-BHC	µg/L	0.0020 U	0.0019 U	0.0020 U	0.0019 U	0.0020 U	0.0020 U	0.0020 U	0.0019 U
alpha-Chlordane	µg/L	0.0032 U	0.0031 U	0.0033 U	0.0030 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U
beta-BHC	µg/L	0.0046 U	0.0044 U	0.0047 U	0.0044 U	0.0046 U	0.0047 U	0.0047 U	0.0044 U
delta-BHC	µg/L	0.0043 U	0.0041 U	0.0044 U	0.0041 U	0.0043 U	0.0044 U	0.0044 U	0.0041 U
Dieldrin	µg/L	0.0023 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U	0.0023 U	0.0023 U	0.0022 U
Endosulfan I	µg/L	0.0037 U	0.0036 U	0.0038 U	0.0035 U	0.0037 U	0.0038 U	0.0038 U	0.0036 U
Endosulfan II	µg/L	0.0023 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U	0.0023 U	0.0023 U	0.0022 U
Endosulfan sulfate	µg/L	0.0037 U	0.0036 U	0.0038 U	0.0035 U	0.0037 U	0.0038 U	0.0038 U	0.0036 U
Endrin	µg/L	0.0025 U	0.0024 U	0.0026 U	0.0024 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U
Endrin aldehyde	µg/L	0.0046 U	0.0044 U	0.0047 U	0.0044 U	0.0046 U	0.0047 U	0.0047 U	0.0044 U
Endrin ketone	µg/L	0.0040 U	0.0038 U	0.0041 U	0.0038 U	0.0040 U	0.0041 U	0.0041 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0025 U	0.0024 U	0.0026 U	0.0024 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U
gamma-Chlordane	µg/L	0.0051 U	0.0048 U	0.0051 U	0.0048 U	0.0050 U	0.0051 U	0.0051 U	0.0048 U
Heptachlor	µg/L	0.0033 U	0.0032 U	0.0034 U	0.0031 U	0.0033 U	0.0034 U	0.0034 U	0.0032 U
Heptachlor epoxide	µg/L	0.0026 U	0.0025 U	0.0027 U	0.0025 U	0.0026 U	0.0027 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0047 U	0.0045 U	0.0048 U	0.0045 U	0.0047 U	0.0048 U	0.0048 U	0.0045 U
Toxaphene	µg/L	0.059 U	0.056 U	0.059 U	0.055 U	0.058 U	0.059 U	0.059 U	0.056 U
General Chemistry									
Chloride	mg/L	**30**	**30**	**30**	**30**	**31**	**30**	**30**	**30**
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	**0.19**	**0.16**	**0.17**	**0.17**	**0.18**	**0.17**	**0.15**	**0.15**
Hardness	mg/L	**200**	**190**	**190**	**190**	**230**	**190**	**200**	**200**
Hardness, carbonate	mg/L	**94**	**89**	**91**	**90**	**120**	**92**	**96**	**93**
Hardness, magnesium	mg/L	**110**	**99**	**98**	**100**	**110**	**100**	**110**	**100**
Nitrate (as N)	µg/L	14 U	14 U	**56 J**	**15 J**	**340**	**15 J**	**17 J**	**16 J**
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
Sulfate	mg/L	**22**	**22**	**22**	**22**	**24**	**22**	**22**	**22**
Sulfide	mg/L	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	**240**	**250**	**250**	**240**	**290**	**240**	**240**	**240**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Table 3.1b

Summary of Analytical Results
Surface Water Samples - Detected Parameters and ESVs
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater Chronic a	Region 4 Freshwater Chronic b	Aquatic Life – OMZA c	Detects	Max Detect	SW-1	SW-1	SW-2	SW-2	SW-3	SW-3	SW-3	SW-4	SW-5
Sample ID:							SW-38443-091818-GL-002	SW-38443-091818-GL-001	SW-38443-091918-JPF-008	SW-38443-091918-JPF-009	SW-092018-38443-GL-014	SW-092018-38443-GL-015	SW-092018-38443-GL-013	SW-38443-091918-JPF-012	SW-38443-091918-JPF-011
Sample Date:							9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/20/2018	9/20/2018	9/20/2018	9/19/2018	9/19/2018
Sample Depth:							5 ft BWS	22.7 ft BWS	5 ft BWS	28.1 ft BWS	5 ft BWS	5 ft BWS Duplicate	17.11 ft BWS	5 ft BWS	5 ft BWS
Volatile Organic Compounds															
1,2,4-Trichlorobenzene	µg/L	130	-	-	1	0.41	0.26 U	**0.41 J**	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	22000	-	22000	1	2.9	1.2 U	**2.9 J**	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	99	-	-	1	1.1	0.54 U	**1.1 J**	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	170	-	ID	1	0.88	0.42 U	**0.88 J**	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	1700	-	-	4	36	5.4 U	13 U	5.4 U	5.4 U	**5.7 J**	**17 J**	5.4 U	5.4 U	5.4 U
Benzene	µg/L	160	-	160	1	0.21	0.13 U	**0.21 J**	0.13 U	0.36 U	0.13 U	0.13 U	0.13 U	0.21 U	0.21 U
cis-1,2-Dichloroethene	µg/L	620	-	970	2	0.22	0.16 U	**0.21 J**	0.16 U	**0.22 J**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Ethylbenzene	µg/L	61	-	61	4	0.34	**0.17 J**	**0.34 J**	0.11 U	**0.11 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
m&p-Xylenes	µg/L	-	-	-	17	1.2	**0.58 J**	**1.2 J**	**0.29 J**	**0.40 J**	**0.27 J**	**0.23 J**	**0.24 J**	**0.31 J**	**0.23 J**
o-Xylene	µg/L	-	-	-	12	0.56	**0.28 J**	**0.56 J**	**0.12 J**	**0.20 J**	0.090 U	**0.18 J**	0.090 U	**0.14 J**	0.090 U
Toluene	µg/L	62	-	62	17	3.6	**0.82 J**	**2.6**	**0.35 J**	**3.6**	**0.24 J**	**0.22 J**	**0.35 J**	**0.46 J**	**0.30 J**
Trichloroethene	µg/L	220	-	220	4	0.29	0.10 U	**0.21 J**	0.10 U	**0.29 J**	0.10 U	0.10 U	**0.20 J**	0.10 U	0.10 U
Xylenes (total)	µg/L	27	-	27	17	1.8	**0.86 J**	**1.8 J**	**0.41 J**	**0.60 J**	**0.27 J**	**0.41 J**	**0.24 J**	**0.45 J**	**0.23 J**
Semivolatile Organic Compounds															
2-Methylnaphthalene	µg/L	4.7	-	-	2	0.14	0.11 U	**0.12 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Butyl benzylphthalate (BBP)	µg/L	23	-	23	1	7.9	0.66 U	0.65 U	0.67 U	0.65 U	0.67 U	0.64 U	0.67 U	0.67 U	0.67 U
Naphthalene	µg/L	21	-	21	3	0.17	0.11 U	**0.17 J**	0.11 U	0.11 U	0.11 U	0.10 U	0.11 U	0.11 U	0.11 U
Metals															
Aluminum	µg/L	87	-	-	4	110	34 U	**39 J**	34 U	34 U	34 U	34 U	**110[a]**	**42 J**	34 U
Arsenic	µg/L	150	-	150	17	14	**2.1 J**	**13**	**1.8 J**	**14**	**1.7 J**	**1.9 J**	**2.0 J**	**1.8 J**	**2.0 J**
Arsenic (dissolved)	µg/L	150	-	150	17	12	**1.7 J**	**10**	**1.6 J**	**12**	**1.6 J**	**1.5 J**	**1.6 J**	**1.8 J**	**1.9 J**
Barium	µg/L	220	-	220	17	250	**86**	**180**	**78**	**250[ac]**	**76**	**77**	**79**	**81**	**82**
Barium (dissolved)	µg/L	220	-	220	17	200	**79**	**150**	**77**	**200**	**79**	**76**	**74**	**80**	**79**
Beryllium	µg/L	11	-	g	4	0.67	0.31 U	**0.67 J**	0.31 U	0.31 U	0.31 U	0.31 U	**0.47 J**	0.31 U	**0.55 J**
Beryllium (dissolved)	µg/L	11	-	g	3	0.88	0.31 U	**0.57 J**	0.31 U	0.31 U	0.31 U	0.31 U	**0.88 J**	0.31 U	**0.75 J**
Calcium	µg/L	116000	-	-	17	80000	**40000**	**70000**	**36000**	**80000**	**36000**	**36000**	**46000**	**37000**	**37000**
Calcium (dissolved)	µg/L	116000	-	-	17	71000	**37000**	**64000**	**35000**	**71000**	**37000**	**35000**	**45000**	**37000**	**36000**
Cobalt	µg/L	19	-	24	2	0.64	0.19 U	**0.60 J**	0.19 U	**0.64 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	19	-	24	2	0.43	0.19 U	**0.41 J**	0.19 U	**0.43 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	1000	-	-	9	7400	47 U	**4000[a]**	47 U	**7400[a]**	47 U	47 U	**150**	**60 J**	**49 J**
Iron (dissolved)	µg/L	1000	-	-	3	6300	47 U	**3200[a]**	47 U	**6300[a]**	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	82000	-	-	17	32000	**27000**	**30000**	**24000**	**32000**	**24000**	**24000**	**26000**	**25000**	**25000**
Magnesium (dissolved)	µg/L	82000	-	-	17	29000	**25000**	**29000**	**24000**	**29000**	**25000**	**24000**	**26000**	**25000**	**24000**
Manganese	µg/L	93	-	-	17	2000	**7.4**	**2000[a]**	**5.2**	**1800[a]**	**4.7 J**	**4.9 J**	**17**	**7.6**	**7.4**
Manganese (dissolved)	µg/L	93	-	-	2	1600	2.1 U	**1600[a]**	2.1 U	**1600[a]**	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	770 (AL)	1.3 (WB)	910	2	2.6	0.48 U	**2.6[b]**	0.44 U	**2.2[b]**	0.21 U	0.28 U	0.34 U	0.38 U	0.35 U
Potassium	µg/L	53000	-	-	17	6500	**5900**	**6300**	**5400**	**6500**	**5300**	**5400**	**5600**	**5500**	**5600**
Potassium (dissolved)	µg/L	53000	-	-	17	6200	**5600**	**6200**	**5400**	**6100**	**5500**	**5300**	**5500**	**5600**	**5500**
Sodium	µg/L	680000	-	-	17	27000	**22000**	**25000**	**20000**	**27000**	**24000**	**20000**	**21000**	**21000**	**21000**
Sodium (dissolved)	µg/L	680000	-	-	17	25000	**21000**	**24000**	**20000**	**25000**	**21000**	**20000**	**21000**	**21000**	**21000**
Vanadium	µg/L	27	-	44	2	1.4	0.82 U	**1.0 J**	0.82 U	**1.4 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	27	-	44	1	1.1	0.82 U	0.82 U	0.82 U	**1.1 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
PCBs															
Aroclor-1254 (PCB-1254)	µg/L	-	-	-	1	0.074	0.040 U	0.41 U	**0.074 J**	0.039 U	0.041 U	0.041 U	0.042 U	0.040 U	0.039 U
General Chemistry															
Chloride	mg/L	230	-	-	17	36	**30**	**34**	**30**	**36**	**30**	**30**	**31**	**30**	**30**
Fluoride	mg/L	2.7	-	-	17	0.19	**0.15**	**0.17**	**0.19**	**0.19**	**0.16**	**0.16**	**0.17**	**0.17**	**0.17**
Hardness	mg/L	-	-	-	17	330	**210**	**300**	**190**	**330**	**190**	**190**	**220**	**200**	**200**
Hardness, carbonate	mg/L	-	-	-	17	200	**99**	**170**	**89**	**200**	**89**	**90**	**110**	**92**	**93**
Hardness, magnesium	mg/L	-	-	-	17	130	**110**	**120**	**100**	**130**	**99**	**100**	**110**	**100**	**100**
Nitrate (as N)	µg/L	-	-	-	8	410	14 U	14 U	14 U	14 U	14 U	14 U	**410**	**14 J**	14 U
Sulfate	mg/L	-	-	-	17	25	**22**	**8.7**	**22**	**9.9**	**22**	**22**	**25**	**22**	**22**
Total dissolved solids (TDS)	mg/L	-	-	-	17	390	**250**	**360**	**240**	**390**	**260**	**250**	**280**	**240**	**250**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
Values greater than criteria shown in red
[a], [b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
[c] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values

Table 3.1b

Summary of Analytical Results
Surface Water Samples - Detected Parameters and ESVs
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:							SW-6	SW-7	SW-7	SW-8	SW-8	SW-9	SW-10	SW-10
Sample ID:							SW-38443-091918-JPF-010	SW-092018-38443-GL-016	SW-092018-38443-GL-017	SW-38443-091918-JPF-006	SW-38443-091918-JPF-007	SW-38443-091918-JPF-005	SW-38443-091818-GL-003	SW-38443-091818-GL-004
Sample Date:							9/19/2018	9/20/2018	9/20/2018	9/19/2018	9/19/2018	9/19/2018	9/18/2018	9/18/2018
Sample Depth:							3.3 ft BWS	5 ft BWS	12.11 ft BWS	5 ft BWS	18.7 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS Duplicate
Parameters	**Units**	**Region 4 Freshwater Chronic a**	**Region 4 Freshwater Chronic b**	**Aquatic Life – OMZA c**	**Detects**	**Max Detect**								
Volatile Organic Compounds														
1,2,4-Trichlorobenzene	µg/L	130	-	-	1	0.41	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	22000	-	22000	1	2.9	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	99	-	-	1	1.1	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	170	-	ID	1	0.88	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	1700	-	-	4	36	5.4 U	**36**	**5.4 J**	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Benzene	µg/L	160	-	160	1	0.21	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
cis-1,2-Dichloroethene	µg/L	620	-	970	2	0.22	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Ethylbenzene	µg/L	61	-	61	4	0.34	0.11 U	0.11 U	0.11 U	0.11 U	**0.11 J**	0.11 U	0.11 U	0.11 U
m&p-Xylenes	µg/L	-	-	-	17	1.2	**0.15 J**	**0.26 J**	**0.16 J**	**0.31 J**	**0.38 J**	**0.28 J**	**0.33 J**	**0.30 J**
o-Xylene	µg/L	-	-	-	12	0.56	0.090 U	**0.12 J**	0.090 U	**0.10 J**	**0.18 J**	**0.12 J**	**0.13 J**	**0.11 J**
Toluene	µg/L	62	-	62	17	3.6	**0.20 J**	**0.31 J**	**0.29 J**	**0.40 J**	**0.72 J**	**0.35 J**	**0.45 J**	**0.42 J**
Trichloroethene	µg/L	220	-	220	4	0.29	0.10 U	0.10 U	0.10 U	0.10 U	**0.23 J**	0.10 U	0.10 U	0.10 U
Xylenes (total)	µg/L	27	-	27	17	1.8	**0.15 J**	**0.38 J**	**0.16 J**	**0.41 J**	**0.56 J**	**0.40 J**	**0.46 J**	**0.41 J**
Semivolatile Organic Compounds														
2-Methylnaphthalene	µg/L	4.7	-	-	2	0.14	0.11 U	0.11 U	0.12 U	**0.14 J**	0.11 U	0.11 U	0.11 U	0.11 U
Butyl benzylphthalate (BBP)	µg/L	23	-	23	1	7.9	0.67 U	0.68 U	0.72 U	0.64 U	0.66 U	0.65 U	**7.9 J**	0.64 UJ
Naphthalene	µg/L	21	-	21	3	0.17	0.11 U	0.11 U	0.12 U	**0.17 J**	**0.15 J**	0.11 U	0.11 U	0.10 U
Metals														
Aluminum	µg/L	87	-	-	4	110	34 U	34 U	34 U	34 U	34 U	34 U	34 U	**37 J**
Arsenic	µg/L	150	-	150	17	14	**1.9 J**	**1.8 J**	**2.0 J**	**1.9 J**	**2.2 J**	**2.0 J**	**1.8 J**	**1.8 J**
Arsenic (dissolved)	µg/L	150	-	150	17	12	**1.7 J**	**1.7 J**	**1.7 J**	**1.8 J**	**1.8 J**	**1.9 J**	**1.9 J**	**2.0 J**
Barium	µg/L	220	-	220	17	250	**82**	**76**	**73**	**79**	**65**	**81**	**84**	**81**
Barium (dissolved)	µg/L	220	-	220	17	200	**81**	**77**	**69**	**82**	**62**	**75**	**83**	**82**
Beryllium	µg/L	11	-	g	4	0.67	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	**0.67 J**	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	11	-	g	3	0.88	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Calcium	µg/L	116000	-	-	17	80000	**38000**	**35000**	**36000**	**36000**	**47000**	**37000**	**38000**	**37000**
Calcium (dissolved)	µg/L	116000	-	-	17	71000	**37000**	**35000**	**37000**	**38000**	**45000**	**35000**	**38000**	**38000**
Cobalt	µg/L	19	-	24	2	0.64	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	19	-	24	2	0.43	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	1000	-	-	9	7400	47 U	47 U	**110**	47 U	**80 J**	47 U	**52 J**	**52 J**
Iron (dissolved)	µg/L	1000	-	-	3	6300	47 U	47 U	47 U	47 U	47 U	**91 J**	47 U	47 U
Magnesium	µg/L	82000	-	-	17	32000	**26000**	**24000**	**24000**	**24000**	**26000**	**25000**	**26000**	**25000**
Magnesium (dissolved)	µg/L	82000	-	-	17	29000	**25000**	**24000**	**24000**	**26000**	**25000**	**23000**	**26000**	**26000**
Manganese	µg/L	93	-	-	17	2000	**7.7**	**5.2**	**18**	**4.4 J**	**16**	**5.5**	**7.6**	**7.2**
Manganese (dissolved)	µg/L	93	-	-	2	1600	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	770 (AL)	1.3 (WB)	910	2	2.6	0.45 U	0.27 U	0.40 U	0.44 U	0.50 U	0.41 U	0.35 U	0.35 U
Potassium	µg/L	53000	-	-	17	6500	**5600**	**5300**	**5200**	**5500**	**5700**	**5600**	**5800**	**5600**
Potassium (dissolved)	µg/L	53000	-	-	17	6200	**5500**	**5300**	**5300**	**5700**	**5600**	**5400**	**5700**	**5700**
Sodium	µg/L	680000	-	-	17	27000	**21000**	**20000**	**20000**	**21000**	**22000**	**21000**	**22000**	**21000**
Sodium (dissolved)	µg/L	680000	-	-	17	25000	**21000**	**20000**	**20000**	**22000**	**21000**	**20000**	**22000**	**22000**
Vanadium	µg/L	27	-	44	2	1.4	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	27	-	44	1	1.1	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
PCBs														
Aroclor-1254 (PCB-1254)	µg/L	-	-	-	1	0.074	0.040 U	0.038 U	0.041 U	0.038 U	0.040 U	0.041 U	0.041 U	0.038 U
General Chemistry														
Chloride	mg/L	230	-	-	17	36	**30**	**30**	**30**	**30**	**31**	**30**	**30**	**30**
Fluoride	mg/L	2.7	-	-	17	0.19	**0.19**	**0.16**	**0.17**	**0.17**	**0.18**	**0.17**	**0.15**	**0.15**
Hardness	mg/L	-	-	-	17	330	**200**	**190**	**190**	**190**	**230**	**190**	**200**	**200**
Hardness, carbonate	mg/L	-	-	-	17	200	**94**	**89**	**91**	**90**	**120**	**92**	**96**	**93**
Hardness, magnesium	mg/L	-	-	-	17	130	**110**	**99**	**98**	**100**	**110**	**100**	**110**	**100**
Nitrate (as N)	µg/L	-	-	-	8	410	14 U	14 U	**56 J**	**15 J**	**340**	**15 J**	**17 J**	**16 J**
Sulfate	mg/L	-	-	-	17	25	**22**	**22**	**22**	**22**	**24**	**22**	**22**	**22**
Total dissolved solids (TDS)	mg/L	-	-	-	17	390	**240**	**250**	**250**	**240**	**290**	**240**	**240**	**240**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
Values greater than criteria shown in red
[a], [b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
[c] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values

Table 3.1c

Summary of Analytical Results
Surface Water Samples - Detected Parameters and HHVs
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Human Health – Nondrink a	Human Health for the consumption of Water + Organism b	Human Health for the consumption of Organism only c	Detects	Max Detect	SW-1 SW-38443-091818-GL-002 9/18/2018 5 ft BWS	SW-1 SW-38443-091818-GL-001 9/18/2018 22.7 ft BWS	SW-2 SW-38443-091918-JPF-008 9/19/2018 5 ft BWS	SW-2 SW-38443-091918-JPF-009 9/19/2018 28.1 ft BWS	SW-3 SW-092018-38443-GL-014 9/20/2018 5 ft BWS	SW-3 SW-092018-38443-GL-015 9/20/2018 5 ft BWS Duplicate	SW-3 SW-092018-38443-GL-013 9/20/2018 17.11 ft BWS	SW-4 SW-38443-091918-JPF-012 9/19/2018 5 ft BWS	SW-5 SW-38443-091918-JPF-011 9/19/2018 5 ft BWS
Volatile Organic Compounds															
1,2,4-Trichlorobenzene	µg/L	940	0.071	0.076	1	0.41	0.26 U	0.41 J[bc]	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	-	-	-	1	2.9	1.2 U	2.9 J	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	-	-	-	1	1.1	0.54 U	1.1 J	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	-	-	-	1	0.88	0.42 U	0.88 J	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	-	-	-	4	36	5.4 U	13 U	5.4 U	5.4 U	5.7 J	17 J	5.4 U	5.4 U	5.4 U
Benzene	µg/L	710c	0.58 (2.1)	16 (58)	1	0.21	0.13 U	0.21 J	0.13 U	0.36 U	0.13 U	0.13 U	0.13 U	0.21 U	0.21 U
cis-1,2-Dichloroethene	µg/L	-	-	-	2	0.22	0.16 U	0.21 J	0.16 U	0.22 J	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Ethylbenzene	µg/L	29000	68	130	4	0.34	0.17 J	0.34 J	0.11 U	0.11 J	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
m&p-Xylenes	µg/L	-	-	-	17	1.2	0.58 J	1.2 J	0.29 J	0.40 J	0.27 J	0.23 J	0.24 J	0.31 J	0.23 J
o-Xylene	µg/L	-	-	-	12	0.56	0.28 J	0.56 J	0.12 J	0.20 J	0.090 U	0.18 J	0.090 U	0.14 J	0.090 U
Toluene	µg/L	200000	57	520	17	3.6	0.82 J	2.6	0.35 J	3.6	0.24 J	0.22 J	0.35 J	0.46 J	0.30 J
Trichloroethene	µg/L	810c	0.6	7	4	0.29	0.10 U	0.21 J	0.10 U	0.29 J	0.10 U	0.10 U	0.20 J	0.10 U	0.10 U
Xylenes (total)	µg/L	-	-	-	17	1.8	0.86 J	1.8 J	0.41 J	0.60 J	0.27 J	0.41 J	0.24 J	0.45 J	0.23 J
Semivolatile Organic Compounds															
2-Methylnaphthalene	µg/L	-	-	-	2	0.14	0.11 U	0.12 J	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Butyl benzylphthalate (BBP)	µg/L	5200	0.1	0.1	1	7.9	0.66 U	0.65 U	0.67 U	0.65 U	0.67 U	0.64 U	0.67 U	0.67 U	0.67 U
Naphthalene	µg/L	-	-	-	3	0.17	0.11 U	0.17 J	0.11 U	0.11 U	0.11 U	0.10 U	0.11 U	0.11 U	0.11 U
Metals															
Aluminum	µg/L	-	-	-	4	110	34 U	39 J	34 U	34 U	34 U	34 U	110	42 J	34 U
Arsenic	µg/L	-	0.018	0.14	17	14	2.1 J[bc]	13[bc]	1.8 J[bc]	14[bc]	1.7 J[bc]	1.9 J[bc]	2.0 J[bc]	1.8 J[bc]	2.0 J[bc]
Arsenic (dissolved)	µg/L	-	0.018	0.14	17	12	1.7 J[bc]	10[bc]	1.6 J[bc]	12[bc]	1.6 J[bc]	1.5 J[bc]	1.6 J[bc]	1.8 J[bc]	1.9 J[bc]
Barium	µg/L	-	1000	-	17	250	86	180	78	250	76	77	79	81	82
Barium (dissolved)	µg/L	-	1000	-	17	200	79	150	77	200	79	76	74	80	79
Beryllium	µg/L	280	-	-	4	0.67	0.31 U	0.67 J	0.31 U	0.31 U	0.31 U	0.31 U	0.47 J	0.31 U	0.55 J
Beryllium (dissolved)	µg/L	280	-	-	3	0.88	0.31 U	0.57 J	0.31 U	0.31 U	0.31 U	0.31 U	0.88 J	0.31 U	0.75 J
Calcium	µg/L	-	-	-	17	80000	40000	70000	36000	80000	36000	36000	46000	37000	37000
Calcium (dissolved)	µg/L	-	-	-	17	71000	37000	64000	35000	71000	37000	35000	45000	37000	36000
Cobalt	µg/L	-	-	-	2	0.64	0.19 U	0.60 J	0.19 U	0.64 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	-	-	-	2	0.43	0.19 U	0.41 J	0.19 U	0.43 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	-	-	-	9	7400	47 U	4000	47 U	7400	47 U	47 U	150	60 J	49 J
Iron (dissolved)	µg/L	-	-	-	3	6300	47 U	3200	47 U	6300	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	-	-	-	17	32000	27000	30000	24000	32000	24000	24000	26000	25000	25000
Magnesium (dissolved)	µg/L	-	-	-	17	29000	25000	29000	24000	29000	25000	24000	26000	25000	24000
Manganese	µg/L	-	50	100	17	2000	7.4	2000[bc]	5.2	1800[bc]	4.7 J	4.9 J	17	7.6	7.4
Manganese (dissolved)	µg/L	-	50	100	2	1600	2.1 U	1600[bc]	2.1 U	1600[bc]	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	12	-	-	2	2.6	0.48 U	2.6	0.44 U	2.2	0.21 U	0.28 U	0.34 U	0.38 U	0.35 U
Potassium	µg/L	-	-	-	17	6500	5900	6300	5400	6500	5300	5400	5600	5500	5600
Potassium (dissolved)	µg/L	-	-	-	17	6200	5600	6200	5400	6100	5500	5300	5500	5600	5500
Sodium	µg/L	-	-	-	17	27000	22000	25000	20000	27000	24000	20000	21000	21000	21000
Sodium (dissolved)	µg/L	-	-	-	17	25000	21000	24000	20000	25000	21000	20000	21000	21000	21000
Vanadium	µg/L	-	-	-	2	1.4	0.82 U	1.0 J	0.82 U	1.4 J	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	-	-	-	1	1.1	0.82 U	0.82 U	0.82 U	1.1 J	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
PCBs															
Aroclor-1254 (PCB-1254)	µg/L	0.0017c	-	-	1	0.074	0.040 U	0.41 U	0.074 J[a]	0.039 U	0.041 U	0.041 U	0.042 U	0.040 U	0.039 U
General Chemistry															
Chloride	mg/L	-	-	-	17	36	30	34	30	36	30	30	31	30	30
Fluoride	mg/L	-	-	-	17	0.19	0.15	0.17	0.19	0.19	0.16	0.16	0.17	0.17	0.17
Hardness	mg/L	-	-	-	17	330	210	300	190	330	190	190	220	200	200
Hardness, carbonate	mg/L	-	-	-	17	200	99	170	89	200	89	90	110	92	93
Hardness, magnesium	mg/L	-	-	-	17	130	110	120	100	130	99	100	110	100	100
Nitrate (as N)	µg/L	-	10000	-	8	410	14 U	14 U	14 U	14 U	14 U	14 U	410	14 J	14 U
Sulfate	mg/L	-	-	-	17	25	22	8.7	22	9.9	22	22	25	22	22
Total dissolved solids (TDS)	mg/L	-	250	-	17	390	250	360[b]	240	390[b]	260[b]	250	280[b]	240	250

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Values greater than criteria shown in red
[a] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values
[b],[c] - USEPA National Recommended Water Quality Criteria - Human Health Criteria Table. Retrieved from
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-tabl
Drink - Human health criterion applicable to Public Water Supply streams (2-route exposure)
Nondrink - Human health criterion - non Public Water Supply (1-route exposure)
c - This criterion is based on a carcinogenic endpoint.

Table 3.1c

Summary of Analytical Results
Surface Water Samples - Detected Parameters and HHVs
September 2018
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Human Health – Nondrink a	Human Health for the consumption of Water + Organism b	Human Health for the consumption of Organism only c	Detects	Max Detect	SW-6 SW-38443-091918-JPF-010 9/19/2018 3.3 ft BWS	SW-7 SW-092018-38443-GL-016 9/20/2018 5 ft BWS	SW-7 SW-092018-38443-GL-017 9/20/2018 12.11 ft BWS	SW-8 SW-38443-091918-JPF-006 9/19/2018 5 ft BWS	SW-8 SW-38443-091918-JPF-007 9/19/2018 18.7 ft BWS	SW-9 SW-38443-091918-JPF-005 9/19/2018 5 ft BWS	SW-10 SW-38443-091818-GL-003 9/18/2018 5 ft BWS	SW-10 SW-38443-091818-GL-004 9/18/2018 5 ft BWS Duplicate
Volatile Organic Compounds														
1,2,4-Trichlorobenzene	µg/L	940	0.071	0.076	1	0.41	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	-	-	-	1	2.9	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	-	-	-	1	1.1	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	-	-	-	1	0.88	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	-	-	-	4	36	5.4 U	**36**	**5.4 J**	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Benzene	µg/L	710c	0.58 (2.1)	16 (58)	1	0.21	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
cis-1,2-Dichloroethene	µg/L	-	-	-	2	0.22	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Ethylbenzene	µg/L	29000	68	130	4	0.34	0.11 U	0.11 U	0.11 U	0.11 U	**0.11 J**	0.11 U	0.11 U	0.11 U
m&p-Xylenes	µg/L	-	-	-	17	1.2	**0.15 J**	**0.26 J**	**0.16 J**	**0.31 J**	**0.38 J**	**0.28 J**	**0.33 J**	**0.30 J**
o-Xylene	µg/L	-	-	-	12	0.56	0.090 U	**0.12 J**	0.090 U	**0.10 J**	**0.18 J**	**0.12 J**	**0.13 J**	**0.11 J**
Toluene	µg/L	200000	57	520	17	3.6	**0.20 J**	**0.31 J**	**0.29 J**	**0.40 J**	**0.72 J**	**0.35 J**	**0.45 J**	**0.42 J**
Trichloroethene	µg/L	810c	0.6	7	4	0.29	0.10 U	0.10 U	0.10 U	0.10 U	**0.23 J**	0.10 U	0.10 U	0.10 U
Xylenes (total)	µg/L	-	-	-	17	1.8	**0.15 J**	**0.38 J**	**0.16 J**	**0.41 J**	**0.56 J**	**0.40 J**	**0.46 J**	**0.41 J**
Semivolatile Organic Compounds														
2-Methylnaphthalene	µg/L	-	-	-	2	0.14	0.11 U	0.11 U	0.12 U	**0.14 J**	0.11 U	0.11 U	0.11 U	0.11 U
Butyl benzylphthalate (BBP)	µg/L	5200	0.1	0.1	1	7.9	0.67 U	0.68 U	0.72 U	0.64 U	0.66 U	0.65 U	**7.9 J[bc]**	0.64 UJ
Naphthalene	µg/L	-	-	-	3	0.17	0.11 U	0.11 U	0.12 U	**0.17 J**	**0.15 J**	0.11 U	0.11 U	0.10 U
Metals														
Aluminum	µg/L	-	-	-	4	110	34 U	34 U	34 U	34 U	34 U	34 U	34 U	**37 J**
Arsenic	µg/L	-	0.018	0.14	17	14	**1.9 J[bc]**	**1.8 J[bc]**	**2.0 J[bc]**	**1.9 J[bc]**	**2.2 J[bc]**	**2.0 J[bc]**	**1.8 J[bc]**	**1.8 J[bc]**
Arsenic (dissolved)	µg/L	-	0.018	0.14	17	12	**1.7 J[bc]**	**1.7 J[bc]**	**1.7 J[bc]**	**1.8 J[bc]**	**1.8 J[bc]**	**1.9 J[bc]**	**1.9 J[bc]**	**2.0 J[bc]**
Barium	µg/L	-	1000	-	17	250	**82**	**76**	**73**	**79**	**65**	**81**	**84**	**81**
Barium (dissolved)	µg/L	-	1000	-	17	200	**81**	**77**	**69**	**82**	**62**	**75**	**83**	**82**
Beryllium	µg/L	280	-	-	4	0.67	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	**0.67 J**	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	280	-	-	3	0.88	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Calcium	µg/L	-	-	-	17	80000	**38000**	**35000**	**36000**	**36000**	**47000**	**37000**	**38000**	**37000**
Calcium (dissolved)	µg/L	-	-	-	17	71000	**37000**	**35000**	**37000**	**38000**	**45000**	**35000**	**38000**	**38000**
Cobalt	µg/L	-	-	-	2	0.64	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	-	-	-	2	0.43	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	-	-	-	9	7400	47 U	47 U	**110**	47 U	**80 J**	47 U	**52 J**	**52 J**
Iron (dissolved)	µg/L	-	-	-	3	6300	47 U	47 U	47 U	47 U	47 U	**91 J**	47 U	47 U
Magnesium	µg/L	-	-	-	17	32000	**26000**	**24000**	**24000**	**24000**	**26000**	**25000**	**26000**	**25000**
Magnesium (dissolved)	µg/L	-	-	-	17	29000	**25000**	**24000**	**24000**	**26000**	**25000**	**23000**	**26000**	**26000**
Manganese	µg/L	-	50	100	17	2000	**7.7**	**5.2**	**18**	**4.4 J**	**16**	**5.5**	**7.6**	**7.2**
Manganese (dissolved)	µg/L	-	50	100	2	1600	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	12	-	-	2	2.6	0.45 U	0.27 U	0.40 U	0.44 U	0.50 U	0.41 U	0.35 U	0.35 U
Potassium	µg/L	-	-	-	17	6500	**5600**	**5300**	**5200**	**5500**	**5700**	**5600**	**5800**	**5600**
Potassium (dissolved)	µg/L	-	-	-	17	6200	**5500**	**5300**	**5300**	**5700**	**5600**	**5400**	**5700**	**5700**
Sodium	µg/L	-	-	-	17	27000	**21000**	**20000**	**20000**	**21000**	**22000**	**21000**	**22000**	**21000**
Sodium (dissolved)	µg/L	-	-	-	17	25000	**21000**	**20000**	**20000**	**22000**	**21000**	**20000**	**22000**	**22000**
Vanadium	µg/L	-	-	-	2	1.4	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	-	-	-	1	1.1	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
PCBs														
Aroclor-1254 (PCB-1254)	µg/L	0.0017c	-	-	1	0.074	0.040 U	0.038 U	0.041 U	0.038 U	0.040 U	0.041 U	0.041 U	0.038 U
General Chemistry														
Chloride	mg/L	-	-	-	17	36	**30**	**30**	**30**	**30**	**31**	**30**	**30**	**30**
Fluoride	mg/L	-	-	-	17	0.19	**0.19**	**0.16**	**0.17**	**0.17**	**0.18**	**0.17**	**0.15**	**0.15**
Hardness	mg/L	-	-	-	17	330	**200**	**190**	**190**	**190**	**230**	**190**	**200**	**200**
Hardness, carbonate	mg/L	-	-	-	17	200	**94**	**89**	**91**	**90**	**120**	**92**	**96**	**93**
Hardness, magnesium	mg/L	-	-	-	17	130	**110**	**99**	**98**	**100**	**110**	**100**	**110**	**100**
Nitrate (as N)	µg/L	-	10000	-	8	410	14 U	14 U	**56 J**	**15 J**	**340**	**15 J**	**17 J**	**16 J**
Sulfate	mg/L	-	-	-	17	25	**22**	**22**	**22**	**22**	**24**	**22**	**22**	**22**
Total dissolved solids (TDS)	mg/L	-	250	-	17	390	**240**	**250**	**250**	**240**	**290[b]**	**240**	**240**	**240**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Values greater than criteria shown in red
[a] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values
[b],[c] - USEPA National Recommended Water Quality Criteria - Human Health Criteria Table. Retrieved from
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table
Drink - Human health criterion applicable to Public Water Supply streams (2-route exposure)
Nondrink - Human health criterion - non Public Water Supply (1-route exposure)
c - This criterion is based on a carcinogenic endpoint.

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-4**	**SW-4**	**SW-5**	**SW-6**
Sample ID:		**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
Sample Date:		**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**20.75 ft BWS**	**5 ft BWS**	**26.92 ft BWS**	**5 ft BWS**	**17 ft BWS**	**3 ft BWS**	**3 ft BWS Duplicate**	**5 ft BWS**	**1.92 ft BWS**
Parameters	**Units**										
Volatile Organic Compounds											
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 UJ	0.13 UJ	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 UJ	5.4 U	5.4 U	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 UJ	0.76 U	0.76 U	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	**0.23 J**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U	**1.4**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	**0.14 J**	0.10 U	**0.35 J**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	1.1 U	0.54 U	0.95 U	0.55 U	0.53 U	0.55 U	0.53 U	0.52 U	0.53 U	0.52 U
2,4,5-Trichlorophenol	µg/L	4.0 U	1.9 U	3.4 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U
2,4,6-Trichlorophenol	µg/L	3.6 U	1.8 U	3.1 U	1.8 U	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U
2,4-Dichlorophenol	µg/L	0.52 U	0.26 U	0.45 U	0.26 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dimethylphenol	µg/L	1.0 U	0.51 U	0.89 U	0.52 U	0.50 U	0.51 U	0.50 U	0.49 U	0.50 U	0.49 U
2,4-Dinitrophenol	µg/L	12 U	6.1 U	11 U	6.2 U	6.0 U	6.1 U	6.0 U	5.9 U	6.0 U	5.9 U
2,4-Dinitrotoluene	µg/L	4.1 U	2.0 U	3.6 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	4.3 U	2.1 U	3.7 U	2.1 U	2.0 U	2.1 U	2.1 U	2.0 U	2.1 U	2.0 U
2-Chloronaphthalene	µg/L	0.97 U	0.47 U	0.83 U	0.48 U	0.46 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U
2-Chlorophenol	µg/L	0.55 U	0.27 U	0.47 U	0.27 U	0.26 U	0.27 U	0.27 U	0.26 U	0.27 U	0.26 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-4**	**SW-4**	**SW-5**	**SW-6**
Sample ID:		**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
Sample Date:		**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**20.75 ft BWS**	**5 ft BWS**	**26.92 ft BWS**	**5 ft BWS**	**17 ft BWS**	**3 ft BWS**	**3 ft BWS Duplicate**	**5 ft BWS**	**1.92 ft BWS**
Parameters	**Units**										
2-Methylnaphthalene	µg/L	0.22 U	0.11 U	0.19 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.42 U	0.20 U	0.36 U	0.21 U	0.20 U	0.21 U	0.20 U	0.20 U	0.20 U	0.20 U
2-Nitroaniline	µg/L	1.0 U	0.50 U	0.88 U	0.51 U	0.49 U	0.50 U	0.50 U	0.49 U	0.50 U	0.49 U
2-Nitrophenol	µg/L	1.1 U	0.55 U	0.97 U	0.56 U	0.54 U	0.56 U	0.55 U	0.54 U	0.55 U	0.54 U
3&4-Methylphenol	µg/L	0.38 U	0.19 U	0.33 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	2.3 U	1.1 U	2.0 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	1.1 U	0.55 U	0.98 U	0.57 U	0.54 U	0.56 U	0.55 U	0.54 U	0.55 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	5.6 U	2.8 U	4.9 U	2.8 U	2.7 U	2.8 U	2.7 U	2.7 U	2.7 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	1.0 U	0.49 U	0.86 U	0.50 U	0.48 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.59 U	0.29 U	0.51 U	0.30 U	0.28 U	0.29 U	0.29 U	0.28 U	0.29 U	0.28 U
4-Chloroaniline	µg/L	0.63 U	0.31 U	0.54 U	0.32 U	0.30 U	0.31 U	0.31 U	0.30 U	0.31 U	R
4-Chlorophenyl phenyl ether	µg/L	1.1 U	0.54 U	0.95 U	0.55 U	0.53 U	0.55 U	0.53 U	0.52 U	0.53 U	0.52 U
4-Nitroaniline	µg/L	1.8 U	0.90 U	1.6 U	0.92 U	0.88 U	0.91 U	0.89 U	0.87 U	0.89 U	0.87 U
4-Nitrophenol	µg/L	4.3 U	2.1 U	3.7 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U
Acenaphthene	µg/L	0.34 U	0.17 U	0.30 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U	0.17 U	0.16 U
Acenaphthylene	µg/L	0.25 U	0.12 U	0.22 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Acetophenone	µg/L	0.73 U	0.36 U	0.63 U	0.37 U	0.35 U	0.36 U	0.36 U	0.35 U	0.36 U	0.35 U
Anthracene	µg/L	0.27 U	0.13 U	0.23 U	0.14 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Atrazine	µg/L	1.9 U	0.93 U	1.6 U	0.95 U	0.92 U	0.94 U	0.92 U	0.91 U	0.92 U	0.91 U
Benzaldehyde	µg/L	1.5 U	0.74 U	1.3 U	0.76 U	0.73 U	0.75 U	0.74 U	0.72 U	0.74 U	0.72 U
Benzo(a)anthracene	µg/L	0.34 U	0.17 U	0.29 U	0.17 U	0.16 U	0.17 U	0.17 U	0.16 U	0.17 U	0.16 U
Benzo(a)pyrene	µg/L	0.35 U	0.17 U	0.30 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U	0.17 U	0.16 U
Benzo(b)fluoranthene	µg/L	0.31 U	0.15 U	0.27 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.36 U	0.17 U	0.31 U	0.18 U	0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.28 U	0.14 U	0.24 U	0.14 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.98 U	0.48 U	0.85 U	0.49 U	0.47 U	0.49 U	0.48 U	0.47 U	0.48 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.91 U	0.45 U	0.78 U	0.46 U	0.44 U	0.45 U	0.44 U	0.43 U	0.44 U	0.43 U
bis(2-Chloroethyl)ether	µg/L	0.80 U	0.39 U	0.69 U	0.40 U	0.39 U	0.40 U	0.39 U	0.38 U	0.39 U	0.38 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	4.4 U	2.2 U	3.8 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	1.3 U	0.65 U	1.1 U	0.67 U	0.64 U	0.66 U	0.65 U	0.63 U	0.65 U	0.63 U
Caprolactam	µg/L	1.9 U	0.92 U	1.6 U	0.93 U	0.90 U	0.92 U	0.91 U	0.89 U	0.91 U	R
Carbazole	µg/L	0.98 U	0.48 U	0.84 U	0.49 U	0.47 U	0.49 U	0.48 U	0.47 U	0.48 U	0.47 U
Chrysene	µg/L	0.37 U	0.18 U	0.32 U	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Dibenz(a,h)anthracene	µg/L	0.30 U	0.15 U	0.26 U	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.15 U	0.14 U
Dibenzofuran	µg/L	1.1 U	0.55 U	0.97 U	0.56 U	0.54 U	0.56 U	0.54 U	0.53 U	0.54 U	0.53 U
Diethyl phthalate	µg/L	7.6 U	3.7 U	6.6 U	3.8 U	3.7 U	3.8 U	3.7 U	3.6 U	3.7 U	3.6 U
Dimethyl phthalate	µg/L	1.0 U	0.50 U	0.89 U	0.52 U	0.50 U	0.51 U	0.50 U	0.49 U	0.50 U	0.49 U
Di-n-butylphthalate (DBP)	µg/L	3.6 U	1.8 U	3.1 U	1.8 U	1.7 U	1.8 U	1.8 U	1.7 U	1.8 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	1.6 U	0.80 U	1.4 U	0.82 U	0.79 U	0.81 U	0.80 U	0.78 U	0.80 U	0.78 U
Fluoranthene	µg/L	0.32 U	0.16 U	0.28 U	0.16 U	0.15 U	0.16 U	0.16 U	0.15 U	0.16 U	0.15 U
Fluorene	µg/L	0.34 U	0.17 U	0.29 U	0.17 U	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U
Hexachlorobenzene	µg/L	0.32 U	0.16 U	0.28 U	0.16 U	0.15 U	0.16 U	0.16 U	0.15 U	0.16 U	0.15 U
Hexachlorobutadiene	µg/L	1.1 U	0.53 U	0.94 U	0.54 U	0.52 U	0.54 U	0.53 U	0.52 U	0.53 U	0.52 U
Hexachlorocyclopentadiene	µg/L	3.5 U	1.7 U	3.0 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.79 U	0.39 U	0.68 U	0.40 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.27 U	0.13 U	0.23 U	0.14 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Isophorone	µg/L	0.65 U	0.32 U	0.56 U	0.32 U	0.31 U	0.32 U	0.31 U	0.31 U	0.31 U	0.31 U
Naphthalene	µg/L	0.22 U	0.11 U	0.19 U	0.11 U	0.10 U	0.11 U	**0.35**	**0.25**	**0.34**	0.10 U
Nitrobenzene	µg/L	1.0 U	0.50 U	0.89 U	0.51 U	0.49 U	0.51 U	0.50 U	0.49 U	0.50 U	0.49 U
N-Nitrosodi-n-propylamine	µg/L	0.51 U	0.25 U	0.44 U	0.25 U	0.24 U	0.25 U	0.25 U	0.24 U	0.25 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.88 U	0.43 U	0.76 U	0.44 U	0.42 U	0.44 U	0.43 U	0.42 U	0.43 U	0.42 U
Pentachlorophenol	µg/L	6.2 U	3.0 U	5.4 U	3.1 U	3.0 U	3.1 U	3.0 U	3.0 U	3.0 U	3.0 U
Phenanthrene	µg/L	0.33 U	0.16 U	0.29 U	0.17 U	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U
Phenol	µg/L	0.26 U	0.13 U	0.22 U	**0.32 J**	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
Pyrene	µg/L	0.35 U	0.17 U	0.30 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-4**	**SW-4**	**SW-5**	**SW-6**
Sample ID:		**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
Sample Date:		**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**20.75 ft BWS**	**5 ft BWS**	**26.92 ft BWS**	**5 ft BWS**	**17 ft BWS**	**3 ft BWS**	**3 ft BWS Duplicate**	**5 ft BWS**	**1.92 ft BWS**
Parameters	**Units**										
Metals											
Aluminum	µg/L	34 U	34 U	34 U	**49 J**	34 U	**38 J**	34 U	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	**0.78 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.82 J**
Antimony (dissolved)	µg/L	**0.92 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.83 J**
Arsenic	µg/L	**1.9 J**	**2.7 J**	**2.0 J**	**5.8**	**1.7 J**	**2.1 J**	**1.7 J**	**1.8 J**	**1.7 J**	**1.8 J**
Arsenic (dissolved)	µg/L	**1.9 J**	**2.3 J**	**1.6 J**	**4.8 J**	**1.8 J**	**2.0 J**	**1.8 J**	**1.5 J**	**1.9 J**	**1.6 J**
Barium	µg/L	**88**	**93**	**87**	**230**	**88**	**88**	**87**	**90**	**88**	**89**
Barium (dissolved)	µg/L	**87**	**82**	**92**	**230**	**93**	**88**	**90**	**86**	**89**	**85**
Beryllium	µg/L	**0.57 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.63 U
Beryllium (dissolved)	µg/L	**0.78 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.72 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Calcium	µg/L	**36000**	**49000**	**36000**	**76000**	**36000**	**39000**	**36000**	**36000**	**36000**	**36000**
Calcium (dissolved)	µg/L	**36000**	**49000**	**37000**	**77000**	**38000**	**39000**	**37000**	**35000**	**36000**	**35000**
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**1.1 J**	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	**0.67 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	**0.42 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	**150**	47 U	**3400**	47 U	**150**	47 U	47 U	47 U	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U	**3400**	47 U	47 U	47 U	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	**25000**	**26000**	**25000**	**31000**	**24000**	**25000**	**24000**	**25000**	**24000**	**24000**
Magnesium (dissolved)	µg/L	**24000**	**26000**	**25000**	**31000**	**26000**	**26000**	**25000**	**24000**	**24000**	**24000**
Manganese	µg/L	**4.1 J**	**50**	**3.6 J**	**3000**	**4.4 J**	**20**	**4.9 J**	**4.9 J**	**5.8**	**3.7 J**
Manganese (dissolved)	µg/L	**3.5 J**	**8.1**	2.1 U	**2800**	2.1 U	**2.5 J**	2.1 U	2.1 U	**2.9 J**	2.1 U
Mercury (Low Level)	ng/L	0.46 U	0.46 U	0.14 U	**1.8**	0.14 U	0.14 U	0.14 U	0.25 U	0.14 U	**0.27 J**
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	**1.6 J**	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	**5200**	**5400**	**5100**	**6100**	**5100**	**5200**	**5100**	**5100**	**5000**	**5000**
Potassium (dissolved)	µg/L	**5200**	**5300**	**5300**	**6000**	**5400**	**5400**	**5200**	**4900**	**5000**	**4900**
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	**1.1 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	**1.0 J**
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	**18000**	**19000**	**18000**	**24000**	**18000**	**18000**	**17000**	**18000**	**18000**	**18000**
Sodium (dissolved)	µg/L	**18000**	**19000**	**19000**	**24000**	**19000**	**19000**	**18000**	**17000**	**17000**	**17000**
Thallium	µg/L	**0.55 J**	**0.23 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.82 U
Thallium (dissolved)	µg/L	**0.73 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.75 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	**0.89 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	**15 J**	15 U
PCBs											
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	0.055 U	0.054 U	0.054 U	0.053 U	0.054 U	0.055 U	0.054 U	0.054 U	0.053 U
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	0.056 U	0.055 U	0.055 U	0.054 U	0.055 U	0.056 U	0.055 U	0.055 U	0.054 U
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	0.072 U	0.071 U	0.071 U	0.070 U	0.072 U	0.073 U	0.072 U	0.071 U	0.070 U
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	0.074 U	0.073 U	0.073 U	0.072 U	0.074 U	0.075 U	0.074 U	0.073 U	0.072 U
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	0.049 U	0.048 U	0.048 U	0.048 U	0.049 U	0.050 U	0.049 U	0.048 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	0.039 U	0.038 U	0.038 U	0.038 U	0.039 U	0.040 U	0.039 U	0.038 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	0.045 U	0.044 U	0.044 U	0.044 U	0.045 U	0.046 U	0.045 U	0.044 U	0.044 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-1**	**SW-1**	**SW-2**	**SW-2**	**SW-3**	**SW-3**	**SW-4**	**SW-4**	**SW-5**	**SW-6**
Sample ID:		**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
Sample Date:		**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**20.75 ft BWS**	**5 ft BWS**	**26.92 ft BWS**	**5 ft BWS**	**17 ft BWS**	**3 ft BWS**	**3 ft BWS Duplicate**	**5 ft BWS**	**1.92 ft BWS**
Parameters	**Units**										
Herbicides											
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 UJ	0.57 UJ	0.57 UJ	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ
Pesticides											
4,4'-DDD	µg/L	0.0050 U	0.0052 U	0.0051 U	0.25 U	0.0050 U	0.0051 U	0.0052 U	0.0051 U	0.0051 U	0.0050 U
4,4'-DDE	µg/L	0.0041 U	0.0042 U	0.0041 U	0.0041 U	0.0041 U	0.0042 U	0.0043 U	0.0042 U	0.0041 U	0.0041 U
4,4'-DDT	µg/L	0.0046 U	0.0047 U	0.0046 U	0.23 U	0.0046 U	0.0047 U	0.0048 U	0.0047 U	0.0046 U	0.0046 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0024 U	0.0023 U	0.0023 U	0.0023 U
alpha-BHC	µg/L	0.0019 U	0.0020 U	0.0019 U	0.096 U	0.0019 U	0.0019 U	0.0020 U	0.0019 U	0.0019 U	0.0019 U
alpha-Chlordane	µg/L	0.0030 U	0.0031 U	0.0031 U	0.0031 U	0.0030 U	0.0031 U	0.0032 U	0.0031 U	0.0031 U	0.0030 U
beta-BHC	µg/L	0.0044 U	0.0045 U	0.0044 U	0.0044 U	0.0044 U	0.0045 U	0.0046 U	0.0045 U	0.0044 U	0.0044 U
delta-BHC	µg/L	0.0041 U	0.0042 U	0.0041 U	0.21 U	0.0041 U	0.0042 U	0.0043 U	0.0042 U	0.0041 U	0.0041 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan I	µg/L	0.0035 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0036 U	0.0037 U	0.0036 U	0.0036 U	0.0035 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan sulfate	µg/L	0.0035 U	0.0036 U	0.0036 U	0.18 U	0.0035 U	0.0036 U	0.0037 U	0.0036 U	0.0036 U	0.0035 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U
Endrin aldehyde	µg/L	0.0044 U	0.0045 U	0.0044 U	0.22 U	0.0044 U	0.0045 U	0.0046 U	0.0045 U	0.0044 U	0.0044 U
Endrin ketone	µg/L	0.0038 U	0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0040 U	0.0039 U	0.0038 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0024 U	0.12 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U
gamma-Chlordane	µg/L	0.0048 U	0.0049 U	0.0048 U	0.0048 U	0.0048 U	0.0049 U	0.0050 U	0.0049 U	0.0048 U	0.0048 U
Heptachlor	µg/L	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0031 U	0.0032 U	0.0033 U	0.0032 U	0.0032 U	0.0031 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0045 U	0.0046 U	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0047 U	0.0046 U	0.0045 U	0.0045 U
Toxaphene	µg/L	0.055 U	0.057 U	0.056 U	0.056 U	0.055 U	0.056 U	0.058 U	0.056 U	0.056 U	0.055 U
General Chemistry											
Chloride	mg/L	**27**	**28**	**27**	**34**	**27**	**27**	**27**	**27**	**27**	**27**
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	**0.18**	**0.18**	**0.17**	**0.18**	**0.17**	**0.17**	**0.16**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	**190**	**230**	**190**	**320**	**190**	**200**	**190**	**190**	**190**	**190**
Hardness, carbonate	mg/L	**91**	**120**	**90**	**190**	**90**	**97**	**90**	**91**	**90**	**90**
Hardness, magnesium	mg/L	**100**	**110**	**100**	**130**	**100**	**100**	**99**	**100**	**100**	**98**
Nitrate (as N)	µg/L	R	R	R	R	R	R	R	R	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
Sulfate	mg/L	**20**	**19**	**20**	**2.7**	**20**	**19**	**20**	**20**	**20**	**20**
Sulfide	mg/L	0.58 U	0.58 U	**0.80 J**	0.58 U	**0.60 J**	0.58 U	0.58 U	0.58 U	**0.93 J**	0.58 U
Total dissolved solids (TDS)	mg/L	**250**	**280**	**230**	**390**	**240**	**240**	**250**	**260**	**250**	**260**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**	**SW-11**	**SW-12**
Sample ID:		**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
Sample Date:		**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**12.42 ft BWS**	**5 ft BWS**	**15.75 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
								Duplicate		
Parameters	**Units**									
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 UJ	0.13 UJ	0.13 UJ	0.13 U	0.13 U	0.13 U	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 UJ	5.4 UJ	5.4 UJ	5.4 UJ	5.4 U	5.4 U	5.4 U	5.4 UJ	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 UJ	0.76 UJ	0.76 UJ	0.76 U	0.76 U	0.76 U	0.76 UJ	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U	**0.15 J**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds										
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.53 U	0.53 U	0.53 U	0.53 U	1.0 U	0.54 U	1.0 U	0.53 U	0.54 U
2,4,5-Trichlorophenol	µg/L	1.9 U	1.9 U	1.9 U	1.9 U	3.7 U	1.9 U	3.6 U	1.9 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.8 U	3.3 U	1.7 U	1.8 U
2,4-Dichlorophenol	µg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.49 U	0.26 U	0.48 U	0.25 U	0.26 U
2,4-Dimethylphenol	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.96 U	0.51 U	0.94 U	0.50 U	0.51 U
2,4-Dinitrophenol	µg/L	6.0 U	6.0 U	6.0 U	6.0 U	12 U	6.1 U	11 U	6.0 U	6.1 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	3.8 U	2.0 U	3.8 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U	2.1 U	2.1 U	2.0 U	3.9 U	2.1 U	3.9 U	2.0 U	2.1 U
2-Chloronaphthalene	µg/L	0.46 U	0.47 U	0.47 U	0.46 U	0.89 U	0.47 U	0.88 U	0.46 U	0.47 U
2-Chlorophenol	µg/L	0.26 U	0.27 U	0.27 U	0.26 U	0.51 U	0.27 U	0.50 U	0.26 U	0.27 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**	**SW-11**	**SW-12**
Sample ID:		**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
Sample Date:		**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**12.42 ft BWS**	**5 ft BWS**	**15.75 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
								Duplicate		
Parameters	**Units**									
2-Methylnaphthalene	µg/L	**0.15 J**	0.11 U	0.11 U	**0.12 J**	0.21 U	0.11 U	0.20 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.39 U	0.20 U	0.38 U	0.20 U	0.20 U
2-Nitroaniline	µg/L	0.49 U	0.50 U	0.50 U	0.49 U	0.94 U	0.50 U	0.93 U	0.49 U	0.50 U
2-Nitrophenol	µg/L	0.54 U	0.55 U	0.55 U	0.54 U	1.0 U	0.55 U	1.0 U	0.54 U	0.55 U
3&4-Methylphenol	µg/L	0.18 U	0.19 U	0.19 U	0.18 U	0.35 U	0.19 U	0.35 U	0.18 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	0.54 U	0.55 U	0.55 U	0.54 U	1.0 U	0.55 U	1.0 U	0.54 U	0.55 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	2.7 U	2.7 U	2.7 U	5.2 U	2.8 U	5.1 U	2.7 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.48 U	0.48 U	0.48 U	0.92 U	0.49 U	0.91 U	0.48 U	0.49 U
4-Chloro-3-methylphenol	µg/L	0.28 U	0.29 U	0.29 U	0.28 U	0.55 U	0.29 U	0.54 U	0.28 U	0.29 U
4-Chloroaniline	µg/L	0.30 U	0.31 U	0.31 U	0.30 U	0.59 U	0.31 U	0.57 U	0.30 U	0.31 U
4-Chlorophenyl phenyl ether	µg/L	0.53 U	0.53 U	0.53 U	0.53 U	1.0 U	0.54 U	1.0 U	0.53 U	0.54 U
4-Nitroaniline	µg/L	0.88 U	0.89 U	0.89 U	0.88 U	1.7 U	0.90 U	1.7 U	0.88 U	0.90 U
4-Nitrophenol	µg/L	2.1 U	2.1 U	2.1 U	2.1 U	4.0 U	2.1 U	4.0 U	2.1 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.32 U	0.17 U	0.31 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.12 U	0.12 U	0.23 U	0.12 U	0.23 U	0.12 U	0.12 U
Acetophenone	µg/L	0.35 U	0.36 U	0.36 U	0.35 U	0.68 U	0.36 U	0.67 U	0.35 U	0.36 U
Anthracene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.25 U	0.13 U	0.25 U	0.13 U	0.13 U
Atrazine	µg/L	0.92 U	0.92 U	0.92 U	0.92 U	1.8 U	0.93 U	1.7 U	0.92 U	0.93 U
Benzaldehyde	µg/L	0.73 U	0.74 U	0.74 U	0.73 U	1.4 U	0.74 U	1.4 U	0.73 U	0.74 U
Benzo(a)anthracene	µg/L	0.16 U	0.17 U	0.17 U	0.16 U	0.32 U	0.17 U	0.31 U	0.16 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.32 U	0.17 U	0.31 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.29 U	0.15 U	0.28 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.33 U	0.17 U	0.32 U	0.17 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U	0.14 U	0.14 U	0.13 U	0.26 U	0.14 U	0.25 U	0.13 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U	0.48 U	0.48 U	0.47 U	0.91 U	0.48 U	0.89 U	0.47 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	0.44 U	0.44 U	0.44 U	0.44 U	0.84 U	0.45 U	0.83 U	0.44 U	0.45 U
bis(2-Chloroethyl)ether	µg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.74 U	0.39 U	0.73 U	0.39 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U	2.2 U	2.2 U	2.1 U	4.1 U	2.2 U	4.0 U	2.1 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.64 U	0.65 U	0.65 U	0.64 U	1.2 U	0.65 U	1.2 U	0.64 U	0.65 U
Caprolactam	µg/L	0.90 U	0.91 U	0.91 U	0.90 U	1.7 U	0.92 U	1.7 U	0.90 U	0.92 U
Carbazole	µg/L	0.47 U	0.48 U	0.48 U	0.47 U	0.91 U	0.48 U	0.89 U	0.47 U	0.48 U
Chrysene	µg/L	0.18 U	0.18 U	0.18 U	0.18 U	0.34 U	0.18 U	0.34 U	0.18 U	0.18 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U	0.28 U	0.15 U	0.27 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.54 U	0.54 U	0.54 U	0.54 U	1.0 U	0.55 U	1.0 U	0.54 U	0.55 U
Diethyl phthalate	µg/L	3.7 U	3.7 U	3.7 U	3.7 U	7.1 U	3.7 U	6.9 U	3.7 U	3.7 U
Dimethyl phthalate	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.95 U	0.50 U	0.94 U	0.50 U	0.50 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U	1.8 U	1.8 U	1.7 U	3.3 U	1.8 U	3.3 U	1.7 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.79 U	0.80 U	0.80 U	0.79 U	1.5 U	0.80 U	1.5 U	0.79 U	0.80 U
Fluoranthene	µg/L	0.15 U	0.16 U	0.16 U	0.15 U	0.30 U	0.16 U	0.29 U	0.15 U	0.16 U
Fluorene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.31 U	0.17 U	0.31 U	0.16 U	0.17 U
Hexachlorobenzene	µg/L	0.15 U	0.16 U	0.16 U	0.15 U	0.30 U	0.16 U	0.29 U	0.15 U	0.16 U
Hexachlorobutadiene	µg/L	0.52 U	0.53 U	0.53 U	0.52 U	1.0 U	0.53 U	0.99 U	0.52 U	0.53 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.2 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.73 U	0.39 U	0.72 U	0.38 U	0.39 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.25 U	0.13 U	0.25 U	0.13 U	0.13 U
Isophorone	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.60 U	0.32 U	0.59 U	0.31 U	0.32 U
Naphthalene	µg/L	**1.1**	**1.1**	0.11 U	**0.86**	0.20 U	0.11 U	0.20 U	0.10 U	**0.17 J**
Nitrobenzene	µg/L	0.49 U	0.50 U	0.50 U	0.49 U	0.95 U	0.50 U	0.93 U	0.49 U	0.50 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U	0.25 U	0.25 U	0.24 U	0.47 U	0.25 U	0.46 U	0.24 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.42 U	0.43 U	0.43 U	0.42 U	0.81 U	0.43 U	0.80 U	0.42 U	0.43 U
Pentachlorophenol	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	5.7 U	3.0 U	5.6 U	3.0 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U	0.31 U	0.16 U	0.30 U	0.16 U	0.16 U
Phenol	µg/L	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.13 U	0.23 U	0.12 U	0.13 U
Pyrene	µg/L	0.17 U	0.17 U	0.17 U	0.17 U	0.32 U	0.17 U	0.32 U	0.17 U	0.17 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**	**SW-11**	**SW-12**
Sample ID:		**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
Sample Date:		**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**12.42 ft BWS**	**5 ft BWS**	**15.75 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
								Duplicate		
Parameters	**Units**									
Metals										
Aluminum	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	**0.80 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	**0.62 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	**1.8 J**	**2.0 J**	**2.0 J**	**2.0 J**	**1.8 J**	**1.6 J**	**1.8 J**	**1.6 J**	**1.7 J**
Arsenic (dissolved)	µg/L	**1.5 J**	**2.0 J**	**1.8 J**	**1.8 J**	**1.8 J**	**1.8 J**	**1.7 J**	**1.7 J**	**1.7 J**
Barium	µg/L	**90**	**93**	**86**	**89**	**91**	**85**	**92**	**90**	**91**
Barium (dissolved)	µg/L	**82**	**87**	**87**	**89**	**91**	**86**	**92**	**87**	**88**
Beryllium	µg/L	0.31 U	0.31 U	0.65 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Calcium	µg/L	**36000**	**38000**	**35000**	**39000**	**37000**	**35000**	**37000**	**37000**	**37000**
Calcium (dissolved)	µg/L	**33000**	**37000**	**36000**	**38000**	**37000**	**36000**	**38000**	**36000**	**36000**
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 UJ	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**6.4 J**	0.98 UJ	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	**140**	47 U	**66 J**	47 U	47 U	**47 J**	47 U	47 U
Iron (dissolved)	µg/L	47 U	**49 J**	47 U	47 U	47 U	47 U	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	**24000**	**25000**	**23000**	**25000**	**25000**	**24000**	**26000**	**24000**	**25000**
Magnesium (dissolved)	µg/L	**22000**	**25000**	**24000**	**24000**	**26000**	**25000**	**26000**	**24000**	**25000**
Manganese	µg/L	**6.8**	**36**	**3.7 J**	**7.8**	**3.9 J**	**5.3 J**	**5.2**	**5.0**	**5.4**
Manganese (dissolved)	µg/L	2.1 U	**11**	2.1 U	2.1 U	2.1 U	**8.1 J**	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	0.14 U	0.25 U	0.25 U	0.25 U	0.23 U	0.33 U	0.23 U	0.14 U	0.14 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**4.0 J**	1.5 UJ	1.5 U	1.5 U
Potassium	µg/L	**5000**	**5300**	**4900**	**5100**	**5200**	**5000**	**5300**	**5100**	**5200**
Potassium (dissolved)	µg/L	**4600**	**5200**	**5100**	**5100**	**5300**	**5300**	**5400**	**5000**	**5100**
Selenium	µg/L	0.89 U	0.89 U	**1.0 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	**18000**	**18000**	**17000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Sodium (dissolved)	µg/L	**16000**	**18000**	**18000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Thallium	µg/L	0.20 U	0.20 U	0.82 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.63 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U	15 U	15 UJ	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U	15 U	**89 J**	15 UJ	15 U	15 U
PCBs										
Aroclor-1016 (PCB-1016)	µg/L	0.054 U	0.054 U	0.055 U	0.053 U	0.053 U	0.054 U	0.053 U	0.054 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.055 U	0.055 U	0.056 U	0.054 U	0.054 U	0.055 U	0.054 U	0.055 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.072 U	0.072 U	0.073 U	0.070 U	0.070 U	0.072 U	0.070 U	0.071 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.074 U	0.074 U	0.075 U	0.072 U	0.072 U	0.074 U	0.072 U	0.073 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.049 U	0.049 U	0.050 U	0.048 U	0.048 U	0.049 U	0.048 U	0.048 U	0.049 U
Aroclor-1254 (PCB-1254)	µg/L	0.039 U	0.039 U	0.040 U	0.038 U	0.038 U	0.039 U	0.038 U	0.038 U	0.039 U
Aroclor-1260 (PCB-1260)	µg/L	0.045 U	0.045 U	0.046 U	0.044 U	0.044 U	0.045 U	0.044 U	0.044 U	0.045 U

Table 3.2a

Summary Of Analytical Results
Surface Water Samples
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:		**SW-7**	**SW-7**	**SW-8**	**SW-8**	**SW-9**	**SW-10**	**SW-10**	**SW-11**	**SW-12**
Sample ID:		**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
Sample Date:		**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/3/2019**	**10/2/2019**	**10/2/2019**	**10/2/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**5 ft BWS**	**12.42 ft BWS**	**5 ft BWS**	**15.75 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
								Duplicate		
Parameters	**Units**									
Herbicides										
2,4,5-T	µg/L	0.57 UJ	0.57 UJ	0.57 UJ	0.57 UJ	0.57 U	0.57 U	0.57 U	0.57 UJ	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ	0.43 U	0.43 U	0.43 U	0.43 UJ	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 U	2.2 U	2.2 U	2.2 UJ	2.2 UJ
Pesticides										
4,4'-DDD	µg/L	0.0051 U	0.0051 U	0.0052 U	0.0050 U	0.0050 U	0.0051 U	0.0050 U	0.0051 U	0.0052 U
4,4'-DDE	µg/L	0.0042 U	0.0042 U	0.0043 U	0.0041 U	0.0041 U	0.0042 U	0.0041 U	0.0041 U	0.0042 U
4,4'-DDT	µg/L	0.0047 U	0.0047 U	0.0048 U	0.0046 U	0.0046 U	0.0047 U	0.0046 U	0.0046 U	0.0047 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0024 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0024 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0020 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0020 U
alpha-Chlordane	µg/L	0.0031 U	0.0031 U	0.0032 U	0.0030 U	0.0030 U	0.0031 U	0.0030 U	0.0031 U	0.0031 U
beta-BHC	µg/L	0.0045 U	0.0045 U	0.0046 U	0.0044 U	0.0044 U	0.0045 U	0.0044 U	0.0044 U	0.0045 U
delta-BHC	µg/L	0.0042 U	0.0042 U	0.0043 U	0.0041 U	0.0041 U	0.0042 U	0.0041 U	0.0041 U	0.0042 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U
Endosulfan I	µg/L	0.0036 U	0.0036 U	0.0037 U	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0036 U	0.0036 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U
Endosulfan sulfate	µg/L	0.0036 U	0.0036 U	0.0037 U	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0036 U	0.0036 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U
Endrin aldehyde	µg/L	0.0045 U	0.0045 U	0.0046 U	0.0044 U	0.0044 U	0.0045 U	0.0044 U	0.0044 U	0.0045 U
Endrin ketone	µg/L	0.0039 U	0.0039 U	0.0040 U	0.0038 U	0.0038 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U
gamma-Chlordane	µg/L	0.0049 U	0.0049 U	0.0050 U	0.0048 U	0.0048 U	0.0049 U	0.0048 U	0.0048 U	0.0049 U
Heptachlor	µg/L	0.0032 U	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0032 U	0.0031 U	0.0032 U	0.0032 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0026 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0046 U	0.0046 U	0.0047 U	0.0045 U	0.0045 U	0.0046 U	0.0045 U	0.0045 U	0.0046 U
Toxaphene	µg/L	0.056 U	0.056 U	0.058 U	0.055 U	0.055 U	0.056 U	0.055 U	0.056 U	0.057 U
General Chemistry										
Chloride	mg/L	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	**0.17**	**0.17**	**0.18**	**0.17**	**0.17**	**0.17**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	**190**	**200**	**180**	**200**	**200**	**190**	**200**	**190**	**190**
Hardness, carbonate	mg/L	**91**	**95**	**88**	**97**	**92**	**87**	**93**	**92**	**92**
Hardness, magnesium	mg/L	**100**	**100**	**96**	**100**	**100**	**99**	**110**	**100**	**100**
Nitrate (as N)	µg/L	R	R	R	R	14 U	14 U	14 U	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
Sulfate	mg/L	**20**	**19**	**20**	**20**	**20**	**20**	**20**	**20**	**20**
Sulfide	mg/L	0.58 U	0.58 U	0.58 U	0.58 U	**0.80 J**	**1.6**	**0.60 J**	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	**270**	**270**	**240**	**270**	**250**	**220**	**240**	**260**	**270**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Table 3.2b

Summary Of Analytical Results
Surface Water Samples - Detected Parameters and ESVs
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:							SW-1	SW-1	SW-2	SW-2	SW-3	SW-3	SW-4	SW-4	SW-5	SW-6
Sample ID:							SW-38443-100219-JPF-001	SW-38443-100219-JPF-002	SW-38443-100219-JPF-003	SW-38443-100219-JPF-004	SW-38443-100219-JPF-005	SW-38443-100219-JPF-006	SW-38443-100319-JPF-016	SW-38443-100319-JPF-017	SW-38443-100319-JPF-015	SW-38443-100319-JPF-014
Sample Date:							10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/3/2019	10/3/2019	10/3/2019	10/3/2019
Sample Depth:							5 ft BWS	20.75 ft BWS	5 ft BWS	26.92 ft BWS	5 ft BWS	17 ft BWS	3 ft BWS	3 ft BWS	5 ft BWS	1.92 ft BWS
														Duplicate		
Parameters	**Units**	**Region 4 Freshwater Chronic a**	**Region 4 Freshwater Chronic b**	**Aquatic Life – OMZA c**	**Detects**	**Max Detect**										
Volatile Organic Compounds																
cis-1,2-Dichloroethene	ug/L	620	-	970	1	0.23	0.16 U	0.16 U	0.16 U	**0.23 J**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Toluene	ug/L	62	-	62	2	1.4	0.14 U	0.14 U	0.14 U	**1.4**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Trichloroethene	ug/L	220	-	220	2	0.35	0.10 U	**0.14 J**	0.10 U	**0.35 J**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Semivolatile Organic Compounds																
2-Methylnaphthalene	µg/L	4.7	-	-	2	0.15	0.22 U	0.11 U	0.19 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Naphthalene	µg/L	21	-	21	7	1.1	0.22 U	0.11 U	0.19 U	0.11 U	0.10 U	0.11 U	**0.35**	**0.25**	**0.34**	0.10 U
Phenol	µg/L	160	-	160	1	0.32	0.26 U	0.13 U	0.22 U	**0.32 J**	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
Metals																
Aluminum	µg/L	87	-	-	2	49	34 U	34 U	34 U	**49 J**	34 U	**38 J**	34 U	34 U	34 U	34 U
Antimony	µg/L	190	-	190	3	0.82	**0.78 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.82 J**
Antimony (dissolved)	µg/L	190	-	190	3	0.92	**0.92 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.83 J**
Arsenic	µg/L	150	-	150	19	5.8	**1.9 J**	**2.7 J**	**2.0 J**	**5.8**	**1.7 J**	**2.1 J**	**1.7 J**	**1.8 J**	**1.7 J**	**1.8 J**
Arsenic (dissolved)	µg/L	150	-	150	19	4.8	**1.9 J**	**2.3 J**	**1.6 J**	**4.8 J**	**1.8 J**	**2.0 J**	**1.8 J**	**1.5 J**	**1.9 J**	**1.6 J**
Barium	µg/L	220	-	220	19	230	**88**	**93**	**87**	**230[ac]**	**88**	**88**	**87**	**90**	**88**	**89**
Barium (dissolved)	µg/L	220	-	220	19	230	**87**	**82**	**92**	**230[ac]**	**93**	**88**	**90**	**86**	**89**	**85**
Beryllium	µg/L	11	-	g	1	0.57	**0.57 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.63 U
Beryllium (dissolved)	µg/L	11	-	g	1	0.78	**0.78 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.72 U
Calcium	µg/L	116000	-	-	19	76000	**36000**	**49000**	**36000**	**76000**	**36000**	**39000**	**36000**	**36000**	**36000**	**36000**
Calcium (dissolved)	µg/L	116000	-	-	19	77000	**36000**	**49000**	**37000**	**77000**	**38000**	**39000**	**37000**	**35000**	**36000**	**35000**
Chromium (dissolved)	µg/L	-	-	-	2	6.4	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**1.1 J**	0.98 U
Cobalt	µg/L	19	-	24	1	0.67	0.19 U	0.19 U	0.19 U	**0.67 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	19	-	24	1	0.42	0.19 U	0.19 U	0.19 U	**0.42 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	1000	-	-	6	3400	47 U	**150**	47 U	**3400[a]**	47 U	**150**	47 U	47 U	47 U	47 U
Iron (dissolved)	µg/L	1000	-	-	2	3400	47 U	47 U	47 U	**3400[a]**	47 U	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	82000	-	-	19	31000	**25000**	**26000**	**25000**	**31000**	**24000**	**25000**	**24000**	**25000**	**24000**	**24000**
Magnesium (dissolved)	µg/L	82000	-	-	19	31000	**24000**	**26000**	**25000**	**31000**	**26000**	**26000**	**25000**	**24000**	**24000**	**24000**
Manganese	µg/L	93	-	-	19	3000	**4.1 J**	**50**	**3.6 J**	**3000[a]**	**4.4 J**	**20**	**4.9 J**	**4.9 J**	**5.8**	**3.7 J**
Manganese (dissolved)	µg/L	93	-	-	7	2800	**3.5 J**	**8.1**	2.1 U	**2800[a]**	2.1 U	**2.5 J**	2.1 U	2.1 U	**2.9 J**	2.1 U
Mercury (Low Level)	ng/L	770 (AL)	1.3 (WB)	910	2	1.8	0.46 U	0.46 U	0.14 U	**1.8[b]**	0.14 U	0.14 U	0.14 U	0.25 U	0.14 U	**0.27 J**
Nickel	µg/L	28.9	-	-	1	1.6	1.5 U	1.5 U	1.5 U	**1.6 J**	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	28.9	-	-	1	4	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	53000	-	-	19	6100	**5200**	**5400**	**5100**	**6100**	**5100**	**5200**	**5100**	**5100**	**5000**	**5000**
Potassium (dissolved)	µg/L	53000	-	-	19	6000	**5200**	**5300**	**5300**	**6000**	**5400**	**5400**	**5200**	**4900**	**5000**	**4900**
Selenium	µg/L	5	-	5	1	1	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	5	-	5	2	1.1	**1.1 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	**1.0 J**
Sodium	µg/L	680000	-	-	19	24000	**18000**	**19000**	**18000**	**24000**	**18000**	**18000**	**17000**	**18000**	**18000**	**18000**
Sodium (dissolved)	µg/L	680000	-	-	19	24000	**18000**	**19000**	**19000**	**24000**	**19000**	**19000**	**18000**	**17000**	**17000**	**17000**
Thallium	µg/L	6	-	17	2	0.55	**0.55 J**	**0.23 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.82 U
Thallium (dissolved)	µg/L	6	-	17	1	0.73	**0.73 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.75 U
Vanadium	µg/L	27	-	44	1	0.89	0.82 U	0.82 U	0.82 U	**0.89 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc (dissolved)	µg/L	66	-	-	2	89	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	**15 J**	15 U
General Chemistry																
Chloride	mg/L	230	-	-	19	34	**27**	**28**	**27**	**34**	**27**	**27**	**27**	**27**	**27**	**27**
Fluoride	mg/L	2.7	-	-	19	0.18	**0.18**	**0.18**	**0.17**	**0.18**	**0.17**	**0.17**	**0.16**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	-	-	-	19	320	**190**	**230**	**190**	**320**	**190**	**200**	**190**	**190**	**190**	**190**
Hardness, carbonate	mg/L	-	-	-	19	190	**91**	**120**	**90**	**190**	**90**	**97**	**90**	**91**	**90**	**90**
Hardness, magnesium	mg/L	-	-	-	19	130	**100**	**110**	**100**	**130**	**100**	**100**	**99**	**100**	**100**	**98**
Sulfate	mg/L	-	-	-	19	20	**20**	**19**	**20**	**2.7**	**20**	**19**	**20**	**20**	**20**	**20**
Sulfide	mg/L	-	-	-	6	1.6	0.58 U	0.58 U	**0.80 J**	0.58 U	**0.60 J**	0.58 U	0.58 U	0.58 U	**0.93 J**	0.58 U
Total dissolved solids (TDS)	mg/L	-	-	-	19	390	**250**	**280**	**230**	**390**	**240**	**240**	**250**	**260**	**250**	**260**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
Values greater than criteria shown in red
[a], [b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
[c] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values

Table 3.2b

Summary Of Analytical Results
Surface Water Samples - Detected Parameters and ESVs
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater Chronic a	Region 4 Freshwater Chronic b	Aquatic Life – OMZA c	Detects	Max Detect	SW-7	SW-7	SW-8	SW-8	SW-9	SW-10	SW-10	SW-11	SW-12
Sample ID:							SW-38443-100319-JPF-012	SW-38443-100319-JPF-013	SW-38443-100319-JPF-010	SW-38443-100319-JPF-011	SW-38443-100219-JPF-009	SW-38443-100219-JPF-007	SW-38443-100219-JPF-008	SW-38443-100319-JPF-018	SW-38443-100319-JPF-019
Sample Date:							10/3/2019	10/3/2019	10/3/2019	10/3/2019	10/2/2019	10/2/2019	10/2/2019	10/3/2019	10/3/2019
Sample Depth:							5 ft BWS	12.42 ft BWS	5 ft BWS	15.75 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS Duplicate	5 ft BWS	5 ft BWS
Volatile Organic Compounds															
cis-1,2-Dichloroethene	ug/L	620	-	970	1	0.23	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Toluene	ug/L	62	-	62	2	1.4	0.14 U	0.14 U	0.14 U	**0.15 J**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Trichloroethene	ug/L	220	-	220	2	0.35	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Semivolatile Organic Compounds															
2-Methylnaphthalene	µg/L	4.7	-	-	2	0.15	**0.15 J**	0.11 U	0.11 U	**0.12 J**	0.21 U	0.11 U	0.20 U	0.11 U	0.11 U
Naphthalene	µg/L	21	-	21	7	1.1	**1.1**	**1.1**	0.11 U	**0.86**	0.20 U	0.11 U	0.20 U	0.10 U	**0.17 J**
Phenol	µg/L	160	-	160	1	0.32	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.13 U	0.23 U	0.12 U	0.13 U
Metals															
Aluminum	µg/L	87	-	-	2	49	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	190	-	190	3	0.82	0.57 U	0.57 U	**0.80 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	190	-	190	3	0.92	0.57 U	0.57 U	**0.62 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	150	-	150	19	5.8	**1.8 J**	**2.0 J**	**2.0 J**	**2.0 J**	**1.8 J**	**1.6 J**	**1.8 J**	**1.6 J**	**1.7 J**
Arsenic (dissolved)	µg/L	150	-	150	19	4.8	**1.5 J**	**2.0 J**	**1.8 J**	**1.8 J**	**1.8 J**	**1.8 J**	**1.7 J**	**1.7 J**	**1.7 J**
Barium	µg/L	220	-	220	19	230	**90**	**93**	**86**	**89**	**91**	**85**	**92**	**90**	**91**
Barium (dissolved)	µg/L	220	-	220	19	230	**82**	**87**	**87**	**89**	**91**	**86**	**92**	**87**	**88**
Beryllium	µg/L	11	-	g	1	0.57	0.31 U	0.31 U	0.65 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	11	-	g	1	0.78	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Calcium	µg/L	116000	-	-	19	76000	**36000**	**38000**	**35000**	**39000**	**37000**	**35000**	**37000**	**37000**	**37000**
Calcium (dissolved)	µg/L	116000	-	-	19	77000	**33000**	**37000**	**36000**	**38000**	**37000**	**36000**	**38000**	**36000**	**36000**
Chromium (dissolved)	µg/L	-	-	-	2	6.4	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**6.4 J**	0.98 UJ	0.98 U	0.98 U
Cobalt	µg/L	19	-	24	1	0.67	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	19	-	24	1	0.42	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	1000	-	-	6	3400	47 U	**140**	47 U	**66 J**	47 U	47 U	**47 J**	47 U	47 U
Iron (dissolved)	µg/L	1000	-	-	2	3400	47 U	**49 J**	47 U	47 U	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	82000	-	-	19	31000	**24000**	**25000**	**23000**	**25000**	**25000**	**24000**	**26000**	**24000**	**25000**
Magnesium (dissolved)	µg/L	82000	-	-	19	31000	**22000**	**25000**	**24000**	**24000**	**26000**	**25000**	**26000**	**24000**	**25000**
Manganese	µg/L	93	-	-	19	3000	**6.8**	**36**	**3.7 J**	**7.8**	**3.9 J**	**5.3 J**	**5.2**	**5.0**	**5.4**
Manganese (dissolved)	µg/L	93	-	-	7	2800	2.1 U	**11**	2.1 U	2.1 U	2.1 U	**8.1 J**	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	770 (AL)	1.3 (WB)	910	2	1.8	0.14 U	0.25 U	0.25 U	0.25 U	0.23 U	0.33 U	0.23 U	0.14 U	0.14 U
Nickel	µg/L	28.9	-	-	1	1.6	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	28.9	-	-	1	4	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**4.0 J**	1.5 UJ	1.5 U	1.5 U
Potassium	µg/L	53000	-	-	19	6100	**5000**	**5300**	**4900**	**5100**	**5200**	**5000**	**5300**	**5100**	**5200**
Potassium (dissolved)	µg/L	53000	-	-	19	6000	**4600**	**5200**	**5100**	**5100**	**5300**	**5300**	**5400**	**5000**	**5100**
Selenium	µg/L	5	-	5	1	1	0.89 U	0.89 U	**1.0 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	5	-	5	2	1.1	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Sodium	µg/L	680000	-	-	19	24000	**18000**	**18000**	**17000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Sodium (dissolved)	µg/L	680000	-	-	19	24000	**16000**	**18000**	**18000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Thallium	µg/L	6	-	17	2	0.55	0.20 U	0.20 U	0.82 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	6	-	17	1	0.73	0.20 U	0.20 U	0.63 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	27	-	44	1	0.89	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc (dissolved)	µg/L	66	-	-	2	89	15 U	15 U	15 U	15 U	15 U	**89 J[a]**	15 UJ	15 U	15 U
General Chemistry															
Chloride	mg/L	230	-	-	19	34	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**
Fluoride	mg/L	2.7	-	-	19	0.18	**0.17**	**0.17**	**0.18**	**0.17**	**0.17**	**0.17**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	-	-	-	19	320	**190**	**200**	**180**	**200**	**200**	**190**	**200**	**190**	**190**
Hardness, carbonate	mg/L	-	-	-	19	190	**91**	**95**	**88**	**97**	**92**	**87**	**93**	**92**	**92**
Hardness, magnesium	mg/L	-	-	-	19	130	**100**	**100**	**96**	**100**	**100**	**99**	**110**	**100**	**100**
Sulfate	mg/L	-	-	-	19	20	**20**	**19**	**20**	**20**	**20**	**20**	**20**	**20**	**20**
Sulfide	mg/L	-	-	-	6	1.6	0.58 U	0.58 U	0.58 U	0.58 U	**0.80 J**	**1.6**	**0.60 J**	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	-	-	-	19	390	**270**	**270**	**240**	**270**	**250**	**220**	**240**	**260**	**270**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
Values greater than criteria shown in red
[a], [b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
[c] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values

Table 3.2c

Summary Of Analytical Results
Surface Water Samples - Detected Parameters and HHVs
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Sample Location:							SW-1	SW-1	SW-2	SW-2	SW-3	SW-3	SW-4	SW-4	SW-5	SW-6
Sample ID:							SW-38443-100219-JPF-001	SW-38443-100219-JPF-002	SW-38443-100219-JPF-003	SW-38443-100219-JPF-004	SW-38443-100219-JPF-005	SW-38443-100219-JPF-006	SW-38443-100319-JPF-016	SW-38443-100319-JPF-017	SW-38443-100319-JPF-015	SW-38443-100319-JPF-014
Sample Date:							10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/3/2019	10/3/2019	10/3/2019	10/3/2019
Sample Depth:							5 ft BWS	20.75 ft BWS	5 ft BWS	26.92 ft BWS	5 ft BWS	17 ft BWS	3 ft BWS	3 ft BWS Duplicate	5 ft BWS	1.92 ft BWS
Parameters	**Units**	**Human Health – Nondrink**	**Human Health for the consumption of Water + Organism**	**Human Health for the consumption of Organism only**	**Detects**	**Max Detect**										
		a	**b**	**c**												
Volatile Organic Compounds																
cis-1,2-Dichloroethene	µg/L	-	-	-	1	0.23	0.16 U	0.16 U	0.16 U	**0.23 J**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Toluene	µg/L	200000	57	520	2	1.4	0.14 U	0.14 U	0.14 U	**1.4**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Trichloroethene	µg/L	810c	0.6	7	2	0.35	0.10 U	**0.14 J**	0.10 U	**0.35 J**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Semivolatile Organic Compounds																
2-Methylnaphthalene	µg/L	-	-	-	2	0.15	0.22 U	0.11 U	0.19 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Naphthalene	µg/L	-	-	-	7	1.1	0.22 U	0.11 U	0.19 U	0.11 U	0.10 U	0.11 U	**0.35**	**0.25**	**0.34**	0.10 U
Phenol	µg/L	4600000	4000	300000	1	0.32	0.26 U	0.13 U	0.22 U	**0.32 J**	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.12 U
Metals																
Aluminum	µg/L	-	-	-	2	49	34 U	34 U	34 U	**49 J**	34 U	**38 J**	34 U	34 U	34 U	34 U
Antimony	µg/L	4300	5.6	640	3	0.82	**0.78 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.82 J**
Antimony (dissolved)	µg/L	4300	5.6	640	3	0.92	**0.92 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	**0.83 J**
Arsenic	µg/L	-	0.018	0.14	19	5.8	**1.9 J[bc]**	**2.7 J[bc]**	**2.0 J[bc]**	**5.8[bc]**	**1.7 J[bc]**	**2.1 J[bc]**	**1.7 J[bc]**	**1.8 J[bc]**	**1.7 J[bc]**	**1.8 J[bc]**
Arsenic (dissolved)	µg/L	-	0.018	0.14	19	4.8	**1.9 J[bc]**	**2.3 J[bc]**	**1.6 J[bc]**	**4.8 J[bc]**	**1.8 J[bc]**	**2.0 J[bc]**	**1.8 J[bc]**	**1.5 J[bc]**	**1.9 J[bc]**	**1.6 J[bc]**
Barium	µg/L	-	1000	-	19	230	**88**	**93**	**87**	**230**	**88**	**88**	**87**	**90**	**88**	**89**
Barium (dissolved)	µg/L	-	1000	-	19	230	**87**	**82**	**92**	**230**	**93**	**88**	**90**	**86**	**89**	**85**
Beryllium	µg/L	280	-	-	1	0.57	**0.57 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.63 U
Beryllium (dissolved)	µg/L	280	-	-	1	0.78	**0.78 J**	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.72 U
Calcium	µg/L	-	-	-	19	76000	**36000**	**49000**	**36000**	**76000**	**36000**	**39000**	**36000**	**36000**	**36000**	**36000**
Calcium (dissolved)	µg/L	-	-	-	19	77000	**36000**	**49000**	**37000**	**77000**	**38000**	**39000**	**37000**	**35000**	**36000**	**35000**
Chromium (dissolved)	µg/L	-	-	-	2	6.4	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**1.1 J**	0.98 U
Cobalt	µg/L	-	-	-	1	0.67	0.19 U	0.19 U	0.19 U	**0.67 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	-	-	-	1	0.42	0.19 U	0.19 U	0.19 U	**0.42 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	-	-	-	6	3400	47 U	**150**	47 U	**3400**	47 U	**150**	47 U	47 U	47 U	47 U
Iron (dissolved)	µg/L	-	-	-	2	3400	47 U	47 U	47 U	**3400**	47 U	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	-	-	-	19	31000	**25000**	**26000**	**25000**	**31000**	**24000**	**25000**	**24000**	**25000**	**24000**	**24000**
Magnesium (dissolved)	µg/L	-	-	-	19	31000	**24000**	**26000**	**25000**	**31000**	**26000**	**26000**	**25000**	**24000**	**24000**	**24000**
Manganese	µg/L	-	50	100	19	3000	**4.1 J**	**50**	**3.6 J**	**3000[bc]**	**4.4 J**	**20**	**4.9 J**	**4.9 J**	**5.8**	**3.7 J**
Manganese (dissolved)	µg/L	-	50	100	7	2800	**3.5 J**	**8.1**	2.1 U	**2800[bc]**	2.1 U	**2.5 J**	2.1 U	2.1 U	**2.9 J**	2.1 U
Mercury (Low Level)	ng/L	12	-	-	2	1.8	0.46 U	0.46 U	0.14 U	**1.8**	0.14 U	0.14 U	0.14 U	0.25 U	0.14 U	**0.27 J**
Nickel	µg/L	4600	610	4600	1	1.6	1.5 U	1.5 U	1.5 U	**1.6 J**	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	4600	610	4600	1	4	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	-	-	-	19	6100	**5200**	**5400**	**5100**	**6100**	**5100**	**5200**	**5100**	**5100**	**5000**	**5000**
Potassium (dissolved)	µg/L	-	-	-	19	6000	**5200**	**5300**	**5300**	**6000**	**5400**	**5400**	**5200**	**4900**	**5000**	**4900**
Selenium	µg/L	11000	170	4200	1	1	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	11000	170	4200	2	1.1	**1.1 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	**1.0 J**
Sodium	µg/L	-	-	-	19	24000	**18000**	**19000**	**18000**	**24000**	**18000**	**18000**	**17000**	**18000**	**18000**	**18000**
Sodium (dissolved)	µg/L	-	-	-	19	24000	**18000**	**19000**	**19000**	**24000**	**19000**	**19000**	**18000**	**17000**	**17000**	**17000**
Thallium	µg/L	6.3	0.24	0.47	2	0.55	**0.55 J[bc]**	**0.23 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.82 U
Thallium (dissolved)	µg/L	6.3	0.24	0.47	1	0.73	**0.73 J[bc]**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.75 U
Vanadium	µg/L	-	-	-	1	0.89	0.82 U	0.82 U	0.82 U	**0.89 J**	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc (dissolved)	µg/L	69000	7400	26000	2	89	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	**15 J**	15 U
General Chemistry																
Chloride	mg/L	-	-	-	19	34	**27**	**28**	**27**	**34**	**27**	**27**	**27**	**27**	**27**	**27**
Fluoride	mg/L	-	-	-	19	0.18	**0.18**	**0.18**	**0.17**	**0.18**	**0.17**	**0.17**	**0.16**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	-	-	-	19	320	**190**	**230**	**190**	**320**	**190**	**200**	**190**	**190**	**190**	**190**
Hardness, carbonate	mg/L	-	-	-	19	190	**91**	**120**	**90**	**190**	**90**	**97**	**90**	**91**	**90**	**90**
Hardness, magnesium	mg/L	-	-	-	19	130	**100**	**110**	**100**	**130**	**100**	**100**	**99**	**100**	**100**	**98**
Sulfate	mg/L	-	-	-	19	20	**20**	**19**	**20**	**2.7**	**20**	**19**	**20**	**20**	**20**	**20**
Sulfide	mg/L	-	-	-	6	1.6	0.58 U	0.58 U	**0.80 J**	0.58 U	**0.60 J**	0.58 U	0.58 U	0.58 U	**0.93 J**	0.58 U
Total dissolved solids (TDS)	mg/L	-	250	-	19	390	**250**	**280[b]**	**230**	**390[b]**	**240**	**240**	**250**	**260[b]**	**250**	**260[b]**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Values greater than criteria shown in red
[a] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values
[b],[c] - USEPA National Recommended Water Quality Criteria - Human Health Criteria Table. Retrieved from https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table
Drink - Human health criterion applicable to Public Water Supply streams (2-route exposure).
Nondrink - Human health criterion - non Public Water Supply (1-route exposure).
c - This criterion is based on a carcinogenic endpoint.

Table 3.2c

Summary Of Analytical Results
Surface Water Samples - Detected Parameters and HHVs
October 2019
South Dayton Dump And Landfill Site
Moraine, Ohio

Parameters	Units	Human Health – Nondrink a	Human Health for the consumption of Water + Organism b	Human Health for the consumption of Organism only c	Detects	Max Detect	SW-7	SW-7	SW-8	SW-8	SW-9	SW-10	SW-10	SW-11	SW-12
Sample ID:							SW-38443-100319-JPF-012	SW-38443-100319-JPF-013	SW-38443-100319-JPF-010	SW-38443-100319-JPF-011	SW-38443-100219-JPF-009	SW-38443-100219-JPF-007	SW-38443-100219-JPF-008	SW-38443-100319-JPF-018	SW-38443-100319-JPF-019
Sample Date:							10/3/2019	10/3/2019	10/3/2019	10/3/2019	10/2/2019	10/2/2019	10/2/2019	10/3/2019	10/3/2019
Sample Depth:							5 ft BWS	12.42 ft BWS	5 ft BWS	15.75 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS
													Duplicate		
Volatile Organic Compounds															
cis-1,2-Dichloroethene	µg/L	-	-	-	1	0.23	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Toluene	µg/L	200000	57	520	2	1.4	0.14 U	0.14 U	0.14 U	**0.15 J**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Trichloroethene	µg/L	810c	0.6	7	2	0.35	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Semivolatile Organic Compounds															
2-Methylnaphthalene	µg/L	-	-	-	2	0.15	**0.15 J**	0.11 U	0.11 U	**0.12 J**	0.21 U	0.11 U	0.20 U	0.11 U	0.11 U
Naphthalene	µg/L	-	-	-	7	1.1	**1.1**	**1.1**	0.11 U	**0.86**	0.20 U	0.11 U	0.20 U	0.10 U	**0.17 J**
Phenol	µg/L	4600000	4000	300000	1	0.32	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.13 U	0.23 U	0.12 U	0.13 U
Metals															
Aluminum	µg/L	-	-	-	2	49	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U	34 U
Antimony	µg/L	4300	5.6	640	3	0.82	0.57 U	0.57 U	**0.80 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	4300	5.6	640	3	0.92	0.57 U	0.57 U	**0.62 J**	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	-	0.018	0.14	19	5.8	**1.8 J[bc]**	**2.0 J[bc]**	**2.0 J[bc]**	**2.0 J[bc]**	**1.8 J[bc]**	**1.6 J[bc]**	**1.8 J[bc]**	**1.6 J[bc]**	**1.7 J[bc]**
Arsenic (dissolved)	µg/L	-	0.018	0.14	19	4.8	**1.5 J[bc]**	**2.0 J[bc]**	**1.8 J[bc]**	**1.8 J[bc]**	**1.8 J[bc]**	**1.8 J[bc]**	**1.7 J[bc]**	**1.7 J[bc]**	**1.7 J[bc]**
Barium	µg/L	-	1000	-	19	230	**90**	**93**	**86**	**89**	**91**	**85**	**92**	**90**	**91**
Barium (dissolved)	µg/L	-	1000	-	19	230	**82**	**87**	**87**	**89**	**91**	**86**	**92**	**87**	**88**
Beryllium	µg/L	280	-	-	1	0.57	0.31 U	0.31 U	0.65 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	280	-	-	1	0.78	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Calcium	µg/L	-	-	-	19	76000	**36000**	**38000**	**35000**	**39000**	**37000**	**35000**	**37000**	**37000**	**37000**
Calcium (dissolved)	µg/L	-	-	-	19	77000	**33000**	**37000**	**36000**	**38000**	**37000**	**36000**	**38000**	**36000**	**36000**
Chromium (dissolved)	µg/L	-	-	-	2	6.4	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	**6.4 J**	0.98 UJ	0.98 U	0.98 U
Cobalt	µg/L	-	-	-	1	0.67	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	-	-	-	1	0.42	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Iron	µg/L	-	-	-	6	3400	47 U	**140**	47 U	**66 J**	47 U	47 U	**47 J**	47 U	47 U
Iron (dissolved)	µg/L	-	-	-	2	3400	47 U	**49 J**	47 U	47 U	47 U	47 U	47 U	47 U	47 U
Magnesium	µg/L	-	-	-	19	31000	**24000**	**25000**	**23000**	**25000**	**25000**	**24000**	**26000**	**24000**	**25000**
Magnesium (dissolved)	µg/L	-	-	-	19	31000	**22000**	**25000**	**24000**	**24000**	**26000**	**25000**	**26000**	**24000**	**25000**
Manganese	µg/L	-	50	100	19	3000	**6.8**	**36**	**3.7 J**	**7.8**	**3.9 J**	**5.3 J**	**5.2**	**5.0**	**5.4**
Manganese (dissolved)	µg/L	-	50	100	7	2800	2.1 U	**11**	2.1 U	2.1 U	2.1 U	**8.1 J**	2.1 U	2.1 U	2.1 U
Mercury (Low Level)	ng/L	12	-	-	2	1.8	0.14 U	0.25 U	0.25 U	0.25 U	0.23 U	0.33 U	0.23 U	0.14 U	0.14 U
Nickel	µg/L	4600	610	4600	1	1.6	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	4600	610	4600	1	4	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**4.0 J**	1.5 UJ	1.5 U	1.5 U
Potassium	µg/L	-	-	-	19	6100	**5000**	**5300**	**4900**	**5100**	**5200**	**5000**	**5300**	**5100**	**5200**
Potassium (dissolved)	µg/L	-	-	-	19	6000	**4600**	**5200**	**5100**	**5100**	**5300**	**5300**	**5400**	**5000**	**5100**
Selenium	µg/L	11000	170	4200	1	1	0.89 U	0.89 U	**1.0 J**	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	11000	170	4200	2	1.1	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Sodium	µg/L	-	-	-	19	24000	**18000**	**18000**	**17000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Sodium (dissolved)	µg/L	-	-	-	19	24000	**16000**	**18000**	**18000**	**18000**	**19000**	**18000**	**19000**	**18000**	**18000**
Thallium	µg/L	6.3	0.24	0.47	2	0.55	0.20 U	0.20 U	0.82 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	6.3	0.24	0.47	1	0.73	0.20 U	0.20 U	0.63 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	-	-	-	1	0.89	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
Zinc (dissolved)	µg/L	69000	7400	26000	2	89	15 U	15 U	15 U	15 U	15 U	**89 J**	15 UJ	15 U	15 U
General Chemistry															
Chloride	mg/L	-	-	-	19	34	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**	**27**
Fluoride	mg/L	-	-	-	19	0.18	**0.17**	**0.17**	**0.18**	**0.17**	**0.17**	**0.17**	**0.17**	**0.17**	**0.16**
Hardness	mg/L	-	-	-	19	320	**190**	**200**	**180**	**200**	**200**	**190**	**200**	**190**	**190**
Hardness, carbonate	mg/L	-	-	-	19	190	**91**	**95**	**88**	**97**	**92**	**87**	**93**	**92**	**92**
Hardness, magnesium	mg/L	-	-	-	19	130	**100**	**100**	**96**	**100**	**100**	**99**	**110**	**100**	**100**
Sulfate	mg/L	-	-	-	19	20	**20**	**19**	**20**	**20**	**20**	**20**	**20**	**20**	**20**
Sulfide	mg/L	-	-	-	6	1.6	0.58 U	0.58 U	0.58 U	0.58 U	**0.80 J**	**1.6**	**0.60 J**	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	-	250	-	19	390	**270[b]**	**270[b]**	**240**	**270[b]**	**250**	**220**	**240**	**260[b]**	**270[b]**

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Values greater than criteria shown in red
[a] - Ohio River Basin Aquatic Life and Human Health Tier 1 Criteria and Tier II Values
[b],[c] - USEPA National Recommended Water Quality Criteria - Human Health Criteria Table. Retrieved from https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table
Drink - Human health criterion applicable to Public Water Supply streams (2-route exposure).
Nondrink - Human health criterion - non Public Water Supply (1-route exposure).
c - This criterion is based on a carcinogenic endpoint.

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-01**	**SD-02**	**SD-02**	**SD-03**	**SD-04**	**SD-04**	**SD-05**	**SD-05**	**SD-05A**	**SD-05B**	**SD-06**
Sample ID:		**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**	**SED-092118-38443-JPF-003**	**SED-092118-38443-JPF-004**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**	**SED-38443-100419-JPF-010**	**SED-38443-100419-JPF-011**	**SED-092118-38443-JPF-008**
Sample Date:		**9/25/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/20/2018**	**9/21/2018**	**10/4/2019**	**10/4/2019**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**
				Duplicate								
Parameters	**Units**											
Volatile Organic Compounds												
1,1,1-Trichloroethane	µg/kg	3.4 U	1.1 U	1.0 U	6.9 U	3.5 U	1.9 U	3.7 U	1.2 U	-	-	4.6 U
1,1,2,2-Tetrachloroethane	µg/kg	6.0 U	1.9 U	1.8 U	12 U	6.1 U	3.4 U	6.5 U	2.1 U	-	-	8.0 U
1,1,2-Trichloroethane	µg/kg	4.8 U	1.5 U	1.4 U	9.5 U	4.8 U	2.7 U	5.1 U	1.6 U	-	-	6.3 U
1,1-Dichloroethane	µg/kg	2.9 U	0.92 U	0.86 U	5.8 U	3.0 U	1.6 U	3.1 U	1.0 U	-	-	3.9 U
1,1-Dichloroethene	µg/kg	3.8 U	1.2 U	1.1 U	7.6 U	3.9 U	2.1 U	4.1 U	1.3 U	-	-	5.0 U
1,2,4-Trichlorobenzene	µg/kg	2.4 U	0.76 U	0.71 U	4.8 U	2.4 U	1.4 U	2.6 U	0.82 U	-	-	3.2 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	15 U	4.8 U	4.4 U	30 U	15 U	8.5 U	16 U	5.2 U	-	-	20 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	3.2 U	1.0 U	0.95 U	6.5 U	3.3 U	1.8 U	3.5 U	1.1 U	-	-	4.3 U
1,2-Dichlorobenzene	µg/kg	4.7 U	1.5 U	1.4 U	9.3 U	4.8 U	2.6 U	5.0 U	1.6 U	-	-	6.2 U
1,2-Dichloroethane	µg/kg	3.2 U	1.0 U	0.95 U	6.5 U	3.3 U	1.8 U	3.5 U	1.1 U	-	-	4.3 U
1,2-Dichloropropane	µg/kg	3.6 U	1.1 U	1.1 U	7.1 U	3.6 U	2.0 U	3.8 U	1.2 U	-	-	4.7 U
1,3-Dichlorobenzene	µg/kg	3.4 U	1.1 U	1.0 U	6.8 U	3.5 U	1.9 U	3.7 U	1.2 U	-	-	4.5 U
1,4-Dichlorobenzene	µg/kg	3.7 U	1.2 U	1.1 U	7.4 U	3.8 U	2.1 U	4.0 U	1.3 U	-	-	4.9 U
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	**39 J**	4.7 U	4.4 U	**65 J**	**21 J**	8.4 U	**21 J**	**5.2 J**	-	-	**39 J**
2-Hexanone	µg/kg	17 U	5.4 U	5.0 U	34 U	17 U	9.7 U	18 U	5.9 U	-	-	23 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	µg/kg	16 U	4.9 U	4.6 U	31 U	16 U	8.8 U	17 U	5.3 U	-	-	21 U
Acetone	µg/kg	88 U	28 U	26 U	180 U	90 U	50 U	95 U	30 U	-	-	120 U
Benzene	µg/kg	**3.9 J**	0.93 U	0.86 U	5.9 U	3.0 U	1.7 U	**4.3 J**	1.0 U	-	-	3.9 U
Bromodichloromethane	µg/kg	2.9 U	0.90 U	0.84 U	5.7 U	2.9 U	1.6 U	3.1 U	0.98 U	-	-	3.8 U
Bromoform	µg/kg	10 U	3.2 U	3.0 U	20 U	10 U	5.7 U	11 U	3.4 U	-	-	13 U
Bromomethane (Methyl bromide)	µg/kg	4.2 U	1.3 UJ	1.2 UJ	8.3 UJ	4.2 UJ	2.3 UJ	4.5 UJ	1.4 UJ	-	-	5.5 UJ
Carbon disulfide	µg/kg	4.9 U	1.5 U	1.4 U	9.8 U	5.0 U	2.8 U	5.2 U	1.7 U	-	-	6.5 U
Carbon tetrachloride	µg/kg	14 U	4.3 U	4.0 U	27 U	14 U	7.7 U	15 U	4.7 U	-	-	18 U
Chlorobenzene	µg/kg	3.9 U	1.2 U	1.1 U	7.7 U	3.9 U	2.2 U	4.1 U	1.3 U	-	-	5.1 U
Chloroethane	µg/kg	5.1 U	1.6 U	1.5 U	10 U	5.2 U	2.9 U	5.5 U	1.8 U	-	-	6.8 U
Chloroform (Trichloromethane)	µg/kg	3.3 U	1.0 U	0.97 U	6.6 U	3.4 U	1.9 U	3.6 U	1.1 U	-	-	4.4 U
Chloromethane (Methyl chloride	µg/kg	4.4 U	1.4 U	1.3 U	8.7 U	4.5 U	2.5 U	4.7 U	1.5 U	-	-	5.8 U
cis-1,2-Dichloroethene	µg/kg	2.7 U	0.87 U	0.80 U	5.5 U	2.8 U	1.5 U	2.9 U	0.94 U	-	-	3.6 U
cis-1,3-Dichloropropene	µg/kg	6.0 U	1.9 U	1.8 U	12 U	6.1 U	3.4 U	6.5 U	2.1 U	-	-	8.0 U
Cyclohexane	µg/kg	5.8 U	1.8 U	1.7 U	12 U	5.9 U	3.3 U	6.2 U	2.0 U	-	-	7.7 U
Dibromochloromethane	µg/kg	12 U	3.7 U	3.4 U	23 U	12 U	6.6 U	13 U	4.0 U	-	-	16 U
Dichlorodifluoromethane (CFC-12)	µg/kg	4.0 U	1.3 U	1.2 U	7.9 U	4.0 U	2.2 U	4.3 U	1.4 U	-	-	5.3 U
Ethylbenzene	µg/kg	4.4 U	1.4 U	1.3 U	8.8 U	4.5 U	2.5 U	4.7 U	1.5 U	-	-	5.8 U
Isopropyl benzene	µg/kg	3.5 U	1.1 U	1.0 U	7.0 U	3.6 U	2.0 U	3.8 U	1.2 U	-	-	4.6 U
Methyl acetate	µg/kg	14 U	4.5 U	4.2 U	29 U	15 U	8.0 U	15 U	4.9 U	-	-	19 U
Methyl cyclohexane	µg/kg	5.2 U	1.6 U	1.5 U	10 U	5.2 U	2.9 U	5.5 U	1.8 U	-	-	6.8 U
Methyl tert butyl ether (MTBE)	µg/kg	3.4 U	1.1 U	1.0 U	6.9 U	3.5 U	1.9 U	3.7 U	1.2 U	-	-	4.6 U
Methylene chloride	µg/kg	50 U	16 U	15 U	100 U	51 U	28 U	54 U	17 U	-	-	67 U
Styrene	µg/kg	4.9 U	1.5 U	1.4 U	9.7 U	5.0 U	2.7 U	5.2 U	1.7 U	-	-	6.5 U
Tetrachloroethene	µg/kg	3.1 U	0.97 U	0.90 U	6.1 U	3.1 U	1.7 U	3.3 U	1.0 U	-	-	4.1 U
Toluene	µg/kg	**5.8 J**	1.0 U	0.95 U	6.5 U	3.3 U	1.8 U	3.5 U	1.1 U	-	-	4.3 U
trans-1,2-Dichloroethene	µg/kg	2.0 U	0.62 U	0.57 U	3.9 U	2.0 U	1.1 U	2.1 U	0.67 U	-	-	2.6 U
trans-1,3-Dichloropropene	µg/kg	4.3 U	1.4 U	1.3 U	8.7 U	4.4 U	2.4 U	4.7 U	1.5 U	-	-	5.8 U
Trichloroethene	µg/kg	2.7 U	0.84 U	0.78 U	5.3 U	2.7 U	1.5 U	2.9 U	0.91 U	-	-	3.5 U
Trichlorofluoromethane (CFC-11)	µg/kg	4.5 U	1.4 U	1.3 U	9.0 U	4.6 U	2.6 U	4.9 U	1.5 U	-	-	6.0 U
Trifluorotrichloroethane (CFC-113)	µg/kg	5.4 U	1.7 U	1.6 U	11 U	5.5 U	3.0 U	5.8 U	1.8 U	-	-	7.1 U
Vinyl chloride	µg/kg	3.5 U	1.1 U	1.0 U	7.0 U	3.6 U	2.0 U	3.8 U	1.2 U	-	-	4.7 U
Xylenes (total)	µg/kg	6.7 U	2.1 U	2.0 U	13 U	6.8 U	3.8 U	7.1 U	2.3 U	-	-	8.8 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-01**	**SD-02**	**SD-02**	**SD-03**	**SD-04**	**SD-04**	**SD-05**	**SD-05**	**SD-05A**	**SD-05B**	**SD-06**
Sample ID:		**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**	**SED-092118-38443-JPF-003**	**SED-092118-38443-JPF-004**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**	**SED-38443-100419-JPF-010**	**SED-38443-100419-JPF-011**	**SED-092118-38443-JPF-008**
Sample Date:		**9/25/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/20/2018**	**9/21/2018**	**10/4/2019**	**10/4/2019**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**
				Duplicate								
Parameters	**Units**											
Semivolatile Organic Compounds												
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	µg/kg	27 U	14 U	14 U	57 U	27 U	39 U	27 U	38 U	20 U	20 U	37 U
2,4,5-Trichlorophenol	µg/kg	190 U	94 U	95 U	400 U	190 U	270 U	190 U	260 U	140 U	140 U	260 U
2,4,6-Trichlorophenol	µg/kg	170 U	87 U	88 U	370 U	170 U	250 U	180 U	240 U	130 U	130 U	240 U
2,4-Dichlorophenol	µg/kg	120 U	60 U	61 U	250 U	120 U	170 U	120 U	170 U	88 U	89 U	160 U
2,4-Dimethylphenol	µg/kg	110 U	54 U	55 U	230 U	110 U	160 U	110 U	150 U	80 U	81 U	150 U
2,4-Dinitrophenol	µg/kg	390 U	190 U	200 U	810 U	380 U	550 U	390 U	540 U	280 U	290 U	530 U
2,4-Dinitrotoluene	µg/kg	170 U	84 U	85 U	360 U	170 U	240 U	170 U	240 U	120 U	120 U	230 U
2,6-Dinitrotoluene	µg/kg	150 U	76 U	77 U	320 U	150 U	220 U	150 U	210 U	110 U	110 U	210 U
2-Chloronaphthalene	µg/kg	38 U	19 U	19 U	80 U	38 U	54 U	38 U	53 U	28 U	28 U	52 U
2-Chlorophenol	µg/kg	27 U	14 U	14 U	57 U	27 U	39 U	27 U	38 U	20 U	20 U	37 U
2-Methylphenol	µg/kg	84 U	42 U	43 U	180 U	83 U	120 U	85 U	120 U	62 U	62 U	120 U
2-Nitroaniline	µg/kg	110 U	54 U	55 U	230 U	110 U	160 U	110 U	150 U	80 U	81 U	150 U
2-Nitrophenol	µg/kg	35 U	18 U	18 U	74 U	35 U	50 U	36 U	49 U	26 U	26 U	48 U
3&4-Methylphenol	µg/kg	79 U	40 U	40 U	170 U	78 U	110 U	80 U	110 U	58 U	58 U	110 U
3,3'-Dichlorobenzidine	µg/kg	120 U	59 U	59 U	250 U	120 U	170 U	120 U	160 U	86 U	87 U	160 U
3-Nitroaniline	µg/kg	130 U	67 U	67 U	280 U	130 U	190 U	130 U	190 U	98 U	99 U	180 U
4,6-Dinitro-2-methylphenol	µg/kg	220 U	110 U	110 U	460 U	210 U	310 U	220 U	300 U	160 U	160 U	300 U
4-Bromophenyl phenyl ether	µg/kg	38 U	19 U	19 U	80 U	38 U	54 U	38 U	53 U	28 U	28 U	52 U
4-Chloro-3-methylphenol	µg/kg	120 U	61 U	62 U	260 U	120 U	170 U	120 U	170 U	90 U	91 U	170 U
4-Chloroaniline	µg/kg	81 U	41 U	41 U	170 U	81 U	120 U	82 U	110 U	60 U	60 U	110 U
4-Chlorophenyl phenyl ether	µg/kg	38 U	19 U	19 U	80 U	38 U	54 U	38 U	53 U	28 U	28 U	52 U
4-Nitroaniline	µg/kg	160 U	82 U	83 U	340 U	160 U	230 U	160 U	230 U	120 U	120 U	220 U
4-Nitrophenol	µg/kg	260 U	130 U	130 U	540 U	250 U	370 U	260 U	360 U	190 U	190 U	350 U
Acetophenone	µg/kg	30 U	15 U	15 U	63 U	30 U	43 U	30 U	42 U	22 U	22 U	41 U
Atrazine	µg/kg	98 U	49 U	50 U	210 U	97 U	140 U	99 U	140 U	72 U	73 U	130 U
Benzaldehyde	µg/kg	62 U	31 U	32 U	130 U	62 U	89 U	63 U	87 U	46 U	46 U	86 U
Biphenyl (1,1-Biphenyl	µg/kg	46 U	23 U	23 U	97 U	46 U	66 U	47 U	65 U	34 U	34 U	63 U
bis(2-Chloroethoxy)methane	µg/kg	33 U	16 U	17 U	69 U	32 U	47 U	33 U	46 U	24 U	24 U	45 U
bis(2-Chloroethyl)ether	µg/kg	33 U	16 U	17 U	69 U	32 U	47 U	33 U	46 U	24 U	24 U	45 U
bis(2-Ethylhexyl)phthalate (DEHP	µg/kg	140 U	**120**	**140**	**560**	**330**	255 U	140 U	190 U	100 U	100 U	**330**
Butyl benzylphthalate (BBP	µg/kg	60 U	30 U	30 U	130 U	59 U	85 U	60 U	84 U	44 U	44 U	82 U
Caprolactam	µg/kg	200 U	100 U	100 U	430 U	200 U	290 U	210 U	290 U	150 U	150 U	280 U
Carbazole	µg/kg	52 U	26 U	26 U	110 U	51 U	**100 J**	52 U	**150 J**	38 U	38 U	71 U
Dibenzofuran	µg/kg	35 U	18 U	18 U	74 U	35 U	**50 J**	36 U	**65 J**	26 U	26 U	48 U
Diethyl phthalate	µg/kg	84 U	42 U	43 U	180 U	83 U	120 U	85 U	120 U	62 U	62 U	120 U
Dimethyl phthalate	µg/kg	38 U	19 U	19 U	80 U	38 U	54 U	38 U	53 U	28 U	28 U	52 U
Di-n-butylphthalate (DBP)	µg/kg	60 U	30 U	30 U	130 U	59 U	85 U	60 U	84 U	44 U	44 U	82 U
Di-n-octyl phthalate (DnOP)	µg/kg	76 U	38 U	39 U	160 U	75 U	110 U	77 U	110 U	56 U	56 U	100 U
Hexachlorobenzene	µg/kg	7.7 U	3.9 U	3.9 U	16 U	7.7 U	11 U	7.8 U	11 U	5.7 U	5.7 U	11 U
Hexachlorobutadiene	µg/kg	33 U	16 U	17 U	69 U	32 U	47 U	33 U	46 U	24 U	24 U	45 U
Hexachlorocyclopentadiene	µg/kg	170 U	84 U	85 U	360 U	170 U	240 U	170 U	240 U	120 U	120 U	R
Hexachloroethane	µg/kg	24 U	12 U	12 U	52 U	24 U	35 U	25 U	34 U	18 U	18 U	33 U
Isophorone	µg/kg	33 U	16 U	17 U	69 U	32 U	47 U	33 U	46 U	24 U	24 U	45 U
Nitrobenzene	µg/kg	35 U	18 U	18 U	74 U	35 U	50 U	36 U	49 U	26 U	26 U	48 U
N-Nitrosodi-n-propylamine	µg/kg	30 U	15 U	15 U	63 U	30 U	43 U	30 U	42 U	22 U	22 U	41 U
N-Nitrosodiphenylamine	µg/kg	33 U	16 U	17 U	69 U	32 U	47 U	33 U	46 U	24 U	24 U	45 U
Pentachlorophenol	µg/kg	160 U	79 U	80 U	330 U	160 U	230 U	160 U	220 U	120 U	120 U	220 U
Phenol	µg/kg	22 U	11 U	11 U	46 U	21 U	31 U	22 U	30 U	16 U	16 U	30 U
LMW-PAHs												
2-Methylnaphthalene	µg/kg	**65**	**15 J**	2.7 U	11 U	5.3 U	**21 J**	5.4 U	**36 J**	3.9 U	3.9 U	7.3 U
Acenaphthene	µg/kg	7.8 U	**4.8 J**	3.9 U	16 U	**15 J**	**80**	**13 J**	**160**	5.7 U	5.8 U	11 U
Acenaphthylene	µg/kg	11 U	5.5 U	5.5 U	23 U	**17 J**	**88**	**20 J**	**120**	8.0 U	8.1 U	15 U
Anthracene	µg/kg	**24 J**	**6.5 J**	**5.7 J**	**28 J**	**49**	**290**	**46**	**390**	**16 J**	**6.8 J**	**13 J**
Fluorene	µg/kg	7.4 U	**5.1 J**	3.8 U	16 U	**19 J**	**99**	**16 J**	**220**	**6.8 J**	5.5 U	10 U
Naphthalene	µg/kg	**49**	**7.1 J**	3.3 U	14 U	6.5 U	**32 J**	6.6 U	**48 J**	4.8 U	4.9 U	9.0 U
Phenanthrene	µg/kg	**110**	**48**	**25**	**120**	**200**	**1100**	**180**	**1800**	**63**	**35**	**53 J**
Total LMW-PAHs	µg/kg	**248**	**86.5**	**30.7**	**148**	**300**	**1710**	**275**	**2774**	**85.8**	**41.8**	**66**

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		SD-01	SD-02	SD-02	SD-03	SD-04	SD-04	SD-05	SD-05	SD-05A	SD-05B	SD-06
Sample ID:		SED-092518-38443-JPF-021	SED-092118-38443-JPF-006	SED-092118-38443-JPF-007	SED-092118-38443-JPF-005	SED-092118-38443-JPF-003	SED-092118-38443-JPF-004	SED-092018-38443-JPF-001	SED-092118-38443-JPF-002	SED-38443-100419-JPF-010	SED-38443-100419-JPF-011	SED-092118-38443-JPF-008
Sample Date:		9/25/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/20/2018	9/21/2018	10/4/2019	10/4/2019	9/21/2018
Sample Depth:		0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS
				Duplicate								
Parameters	**Units**											
HMW-PAHs												
Benzo(a)anthracene	µg/kg	150	41	33	180	310	1200	300	1800	74	46	77
Benzo(a)pyrene	µg/kg	160	44	43	230	360	1200	310	1700	96	54	97
Benzo(b)fluoranthene	µg/kg	220	79	51	290	490	1700	450	2400	130	67	130
Benzo(g,h,i)perylene	µg/kg	95	36	29	140	220	730	180	1100	58	41	83
Benzo(k)fluoranthene	µg/kg	98	14 J	19 J	100	180	470	140	950	46	26 J	48 J
Chrysene	µg/kg	160	54	39	220	370	1300	330	1800	85	47	94
Dibenz(a,h)anthracene	µg/kg	25 J	9.4 U	9.5 U	40 U	52	220	42	260	14 U	14 U	26 U
Fluoranthene	µg/kg	300	92	67	380	610	2900	570	4600	160	68	160
Indeno(1,2,3-cd)pyrene	µg/kg	79	31	24	140	220	650	170	910	58	15 U	66
Pyrene	µg/kg	240	76	58	330	540	2100	500	3400	130	73	150
Total HMW-PAHs	µg/kg	1527	467	363	2010	3352	12470	2992	18920	837	422	905
Total PAHs	µg/kg	1775	553.5	393.7	2158	3652	14180	3267	21694	922.8	463.8	971
Metals												
Aluminum	mg/kg	6300	2100	1900	6800	6800	8200	5400	6300	-	-	11000 J
Antimony	mg/kg	0.45 J	0.14 J	0.16 U	0.66 U	0.29 J	0.39 J	0.31 U	0.76	-	-	0.63 J
Arsenic	mg/kg	8.7	3.1	3.0	11	11	11	8.4	7.9	-	-	20
Barium	mg/kg	140	33	30	290	130	130	94	78	-	-	190
Beryllium	mg/kg	0.37 J	0.12 J	0.12 J	0.41 J	0.40 J	0.50	0.30 J	0.43	-	-	0.66 J
Cadmium	mg/kg	0.35 J	0.11 J	0.12 J	0.36 J	0.26 J	0.49	0.21 J	0.46	-	-	0.52 J
Calcium	mg/kg	110000	90000	95000	200000	110000	110000	130000	90000	-	-	110000
Chromium	mg/kg	16	5.6	6.0	13	11	14	10	11	-	-	19
Cobalt	mg/kg	5.2	2.4	2.6	5.0	5.3	6.4	5.1	5.6	-	-	7.8
Copper	mg/kg	23	3.8	5.5	23	17	26	12	20	-	-	29
Iron	mg/kg	13000	5600	5900	14000	14000	16000	11000	12000	-	-	21000
Lead	mg/kg	140	8.6	7.5	25	18	65	16	52	-	-	41
Magnesium	mg/kg	22000	26000	36000	19000	24000	28000	37000	34000	-	-	20000
Manganese	mg/kg	380	240	260	340	630	550	590	430	-	-	640
Mercury	mg/kg	0.051 J	0.023 U	0.023 U	0.10 U	0.059 J	0.17 J	0.057 J	0.097 J	-	-	0.089 J
Methyl mercury	µg/kg	0.65	0.097 U	0.098 U	0.42 U	0.26 J	0.14 J	0.26 J	0.31	-	-	0.27 J
Nickel	mg/kg	14	4.7	6.0	15	14	17	12	13	-	-	21
Potassium	mg/kg	960	340	280	1200	1300	1400	1100	910	-	-	1900
Selenium	mg/kg	0.89 J	0.14 J	0.16 U	1.8 J	0.61 J	0.77 J	0.40 J	0.47 J	-	-	1.2 J
Silver	mg/kg	0.080 J	0.025 U	0.029 U	0.12 U	0.049 J	0.086 J	0.054 U	0.061 J	-	-	0.12 J
Sodium	mg/kg	170 J	120 J	130 J	380 J	180 J	160 J	210 J	170 J	-	-	300 J
Thallium	mg/kg	0.24 J	0.077 J	0.073 J	0.32 J	0.27 J	0.31	0.21 J	0.22	-	-	0.47 J
Vanadium	mg/kg	17	7.9	6.8	17	17	20	14	17	-	-	25
Zinc	mg/kg	76	27	29	86	65	110	52	71	-	-	150
SEM Metals												
Cadmium	umol/g	0.0027	0.00096 J	0.00092 J	0.0027 J	0.0024 J	0.0043	0.0020 J	0.0037	-	-	0.0050
Copper	umol/g	0.23	0.069	0.069	0.19	0.21	0.21	0.18	0.15	-	-	0.34 J
Lead	umol/g	0.16	0.040	0.036	0.11	0.089	0.32	0.067	0.22	-	-	0.21
Mercury	umol/g	0.000020 U	0.000012 U	0.000012 U	0.000031 U	0.000023 U	0.000018 U	0.000025 U	0.000013 U	-	-	0.000030 U
Nickel	umol/g	0.16	0.057	0.054	0.17	0.15	0.20	0.13	0.12	-	-	0.25
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	0.044	0.13	0.12	0.064	0.12	0.47	0.067	0.36	-	-	0.13
Zinc	umol/g	0.85	0.37	0.35	0.95	0.71	1.4	0.61	0.68	-	-	2.0 J
PCBs												
Aroclor-1016 (PCB-1016)	µg/kg	57 U	30 U	30 U	120 U	59 U	41 U	60 U	33 U	-	-	79 U
Aroclor-1221 (PCB-1221)	µg/kg	62 U	33 U	32 U	130 U	64 U	45 U	65 U	36 U	-	-	86 U
Aroclor-1232 (PCB-1232)	µg/kg	60 U	32 U	31 U	130 U	61 U	43 U	63 U	35 U	-	-	83 U
Aroclor-1242 (PCB-1242)	µg/kg	49 U	26 U	26 U	100 U	51 U	36 U	52 U	29 U	-	-	68 U
Aroclor-1248 (PCB-1248)	µg/kg	62 U	33 U	32 U	130 U	64 U	45 U	65 U	36 U	-	-	86 U
Aroclor-1254 (PCB-1254)	µg/kg	60 U	32 U	31 U	130 U	61 U	43 U	63 U	75 J	-	-	83 U
Aroclor-1260 (PCB-1260)	µg/kg	57 U	30 U	30 U	120 U	59 U	41 U	60 U	33 U	-	-	79 U
Herbicides												
2,4,5-T	µg/kg	34 U	17 UJ	17 UJ	74 UJ	35 UJ	25 UJ	35 UJ	20 UJ	-	-	47 UJ
2,4,5-TP (Silvex)	µg/kg	37 U	19 U	19 U	80 U	38 U	27 UJ	37 U	22 U	-	-	50 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	130 U	66 U	65 U	280 U	130 U	95 UJ	130 U	76 U	-	-	180 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-01**	**SD-02**	**SD-02**	**SD-03**	**SD-04**	**SD-04**	**SD-05**	**SD-05**	**SD-05A**	**SD-05B**	**SD-06**
Sample ID:		**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**	**SED-092118-38443-JPF-003**	**SED-092118-38443-JPF-004**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**	**SED-38443-100419-JPF-010**	**SED-38443-100419-JPF-011**	**SED-092118-38443-JPF-008**
Sample Date:		**9/25/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/21/2018**	**9/20/2018**	**9/21/2018**	**10/4/2019**	**10/4/2019**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**
				Duplicate								
Parameters	**Units**											
Pesticides												
4,4'-DDD	µg/kg	3.8 U	2.0 U	2.1 U	8.6 U	3.8 U	2.9 U	4.1 U	2.2 U	-	-	27 U
4,4'-DDE	µg/kg	3.9 U	2.0 U	2.2 U	8.8 U	3.9 U	2.9 U	4.2 U	2.3 U	-	-	28 U
4,4'-DDT	µg/kg	2.9 U	1.5 U	1.6 U	6.6 U	2.9 U	2.2 U	3.1 U	1.7 U	-	-	21 U
Aldrin	µg/kg	2.0 U	1.0 U	1.1 U	4.5 U	2.0 U	1.5 U	2.1 U	1.2 U	-	-	14 U
alpha-BHC	µg/kg	2.4 U	1.2 U	1.3 U	5.3 U	2.4 U	1.8 U	2.5 U	1.4 U	-	-	17 U
alpha-Chlordane	µg/kg	3.9 U	2.0 U	2.1 U	8.7 U	3.9 U	2.9 U	4.1 U	**5.5 J**	-	-	28 U
beta-BHC	µg/kg	4.5 U	2.3 U	2.5 U	10 U	4.5 U	3.4 U	4.8 U	2.6 U	-	-	32 U
delta-BHC	µg/kg	240 UJ	120 UJ	120 UJ	970 UJ	93 UJ	68 UJ	R	53 UJ	-	-	320 UJ
Dieldrin	µg/kg	2.9 U	1.5 U	1.6 U	6.4 U	2.9 U	2.1 U	3.0 U	1.6 U	-	-	20 U
Endosulfan I	µg/kg	3.1 U	1.6 U	1.7 U	7.0 U	3.1 U	2.3 U	3.3 U	1.8 U	-	-	22 U
Endosulfan II	µg/kg	3.8 U	2.0 U	2.1 U	8.6 U	3.8 U	2.9 U	4.1 U	2.2 U	-	-	27 U
Endosulfan sulfate	µg/kg	170 U	1.7 U	1.8 U	7.4 U	3.3 U	2.5 U	3.5 U	1.9 U	-	-	23 U
Endrin	µg/kg	4.9 U	2.6 U	2.7 U	11 U	4.9 U	3.7 U	5.2 U	2.8 U	-	-	35 U
Endrin aldehyde	µg/kg	170 U	89 U	94 U	760 U	170 U	130 U	72 U	39 U	-	-	240 U
Endrin ketone	µg/kg	2.3 U	1.2 U	1.3 U	5.2 U	2.3 U	1.7 U	2.5 U	1.3 U	-	-	16 U
gamma-BHC (lindane)	µg/kg	4.6 U	2.4 U	2.6 U	10 U	4.6 U	3.5 U	4.9 U	2.7 U	-	-	33 U
gamma-Chlordane	µg/kg	3.2 U	1.7 U	1.8 U	7.2 U	3.2 U	2.4 U	3.4 U	**4.7 J**	-	-	23 U
Heptachlor	µg/kg	4.1 U	2.1 U	2.3 U	9.2 U	4.1 U	3.1 U	4.4 U	2.4 U	-	-	29 U
Heptachlor epoxide	µg/kg	3.7 U	1.9 U	2.1 U	8.4 U	3.7 U	2.8 U	4.0 U	2.2 U	-	-	26 U
Methoxychlor	µg/kg	17 U	8.9 UJ	9.4 UJ	38 UJ	17 UJ	13 UJ	18 UJ	9.8 UJ	-	-	120 UJ
Toxaphene	µg/kg	65 U	34 U	36 U	150 U	65 U	49 U	69 U	37 U	-	-	460 U
General Chemistry												
Cyanide (total)	mg/kg	0.46 U	0.25 U	0.24 U	1.1 U	0.50 U	0.34 U	0.53 U	0.26 U	-	-	**1.4 J**
Soot carbon	mg/kg	**6600**	**9200**	**6000**	**8400**	**14000**	**12000**	**9300**	**6500**	-	-	**7200**
Sulfide	umol/g	**32**	**4.1 J**	**4.2 J**	**22 J**	**9.7 J**	**4.5 J**	**15 J**	**3.3 J**	-	-	**23 J**
Total organic carbon (TOC)	mg/kg	**28000**	**3800**	**3100**	**56000**	**21000**	**15000**	**15000**	**9900**	-	-	**26000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-06**	**SD-07**	**SD-08**	**SD-08**	**SD-10**	**SD-11**	**SD-11**	**SD-12**	**SD-13**	**SD-13**
Sample ID:		**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-014**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-019**	**SED-092518-38443-JPF-020**	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
Sample Date:		**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/26/2018**	**9/25/2018**	**9/25/2018**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.4 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS Duplicate**
Parameters	**Units**										
Volatile Organic Compounds											
1,1,1-Trichloroethane	µg/kg	2.3 U	1.5 U	4.1 U	2.4 U	5.9 U	3.4 U	2.5 U	3.0 U	4.3 U	4.4 U
1,1,2,2-Tetrachloroethane	µg/kg	3.9 U	2.6 U	7.2 U	4.3 U	10 U	5.9 U	4.4 U	5.3 U	7.6 U	7.7 U
1,1,2-Trichloroethane	µg/kg	3.1 U	2.0 U	5.7 U	3.4 U	8.1 U	4.7 U	3.4 U	4.2 U	6.0 U	6.1 U
1,1-Dichloroethane	µg/kg	1.9 U	1.2 U	3.5 U	2.1 U	5.0 U	2.9 U	2.1 U	2.6 U	3.7 U	3.7 U
1,1-Dichloroethene	µg/kg	2.5 U	1.6 U	4.5 U	2.7 U	6.5 U	3.7 U	2.7 U	3.3 U	4.8 U	4.9 U
1,2,4-Trichlorobenzene	µg/kg	1.6 U	1.0 U	2.9 U	1.7 U	4.1 U	2.4 U	1.7 U	2.1 U	3.0 U	3.1 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	9.9 U	6.5 U	18 U	11 U	26 U	15 U	11 U	13 U	19 U	19 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	2.1 U	1.4 U	3.9 U	2.3 U	5.5 U	3.2 U	2.3 U	2.8 U	4.1 U	4.2 U
1,2-Dichlorobenzene	µg/kg	3.1 U	2.0 U	5.6 U	3.3 U	8.0 U	4.6 U	3.4 U	4.1 U	5.9 U	6.0 U
1,2-Dichloroethane	µg/kg	2.1 U	1.4 U	3.9 U	2.3 U	5.5 U	3.2 U	2.3 U	2.9 U	4.1 U	4.2 U
1,2-Dichloropropane	µg/kg	2.3 U	1.5 U	4.3 U	2.5 U	6.1 U	3.5 U	2.6 U	3.1 U	4.5 U	4.6 U
1,3-Dichlorobenzene	µg/kg	2.3 U	1.5 U	4.1 U	2.4 U	5.8 U	3.4 U	2.5 U	3.0 U	4.3 U	4.4 U
1,4-Dichlorobenzene	µg/kg	2.4 U	1.6 U	4.4 U	2.6 U	6.3 U	3.6 U	2.7 U	3.3 U	4.7 U	4.8 U
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	**15 J**	6.4 U	**18 J**	**12 J**	**42 J**	**20 J**	11 U	**17 J**	**22 J**	**31 J**
2-Hexanone	µg/kg	11 U	7.3 U	21 U	12 U	29 U	17 U	12 U	15 U	22 U	22 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	µg/kg	10 U	6.7 U	19 U	11 U	27 U	15 U	11 U	14 U	20 U	20 U
Acetone	µg/kg	58 U	38 U	110 U	63 U	150 U	87 U	64 U	78 U	110 U	110 U
Benzene	µg/kg	1.9 U	1.3 U	3.5 U	2.1 U	5.0 U	2.9 U	2.1 U	2.6 U	3.7 U	3.8 U
Bromodichloromethane	µg/kg	1.9 U	1.2 U	3.4 U	2.0 U	4.9 U	2.8 U	2.1 U	2.5 U	3.6 U	3.7 U
Bromoform	µg/kg	6.6 U	4.3 U	12 U	7.2 U	17 U	9.9 U	7.3 U	8.9 U	13 U	13 U
Bromomethane (Methyl bromide)	µg/kg	2.7 U	1.8 U	5.0 U	2.9 U	7.1 U	4.1 U	3.0 U	3.7 U	5.2 U	5.3 U
Carbon disulfide	µg/kg	3.2 U	2.1 U	5.8 U	3.5 U	8.3 U	4.8 U	3.5 U	4.3 U	6.2 U	6.3 U
Carbon tetrachloride	µg/kg	9.0 U	5.8 U	16 U	9.7 U	23 U	13 U	9.9 U	12 U	17 U	18 U
Chlorobenzene	µg/kg	2.5 U	1.6 U	4.6 U	2.7 U	6.6 U	3.8 U	2.8 U	3.4 U	4.8 U	4.9 U
Chloroethane	µg/kg	3.4 U	2.2 U	6.1 U	3.6 U	8.7 U	5.0 U	3.7 U	4.5 U	6.5 U	6.6 U
Chloroform (Trichloromethane)	µg/kg	2.2 U	1.4 U	4.0 U	2.3 U	5.6 U	3.3 U	2.4 U	2.9 U	4.2 U	4.3 U
Chloromethane (Methyl chloride	µg/kg	2.9 U	1.9 U	5.2 U	3.1 U	7.5 U	4.3 U	3.2 U	3.9 U	5.5 U	5.6 U
cis-1,2-Dichloroethene	µg/kg	1.8 U	1.2 U	3.3 U	1.9 U	4.7 U	2.7 U	2.0 U	2.4 U	3.4 U	3.5 U
cis-1,3-Dichloropropene	µg/kg	4.0 U	2.6 U	7.2 U	4.3 U	10 U	5.9 U	4.4 U	5.3 U	7.6 U	7.8 U
Cyclohexane	µg/kg	3.8 U	2.5 U	6.9 U	4.1 U	9.8 U	5.7 U	4.2 U	5.1 U	7.3 U	7.4 U
Dibromochloromethane	µg/kg	7.7 U	5.0 U	14 U	8.3 U	20 U	11 U	8.5 U	10 U	15 U	15 U
Dichlorodifluoromethane (CFC-12)	µg/kg	2.6 U	1.7 U	4.7 U	2.8 U	6.7 U	3.9 U	2.9 U	3.5 U	5.0 U	5.1 U
Ethylbenzene	µg/kg	2.9 U	1.9 U	5.3 U	3.1 U	7.5 U	4.3 U	3.2 U	3.9 U	5.5 U	5.7 U
Isopropyl benzene	µg/kg	2.3 U	1.5 U	4.2 U	2.5 U	5.9 U	3.4 U	2.5 U	3.1 U	4.4 U	4.5 U
Methyl acetate	µg/kg	9.4 U	6.1 U	17 U	10 U	24 U	14 U	10 U	13 U	18 U	18 U
Methyl cyclohexane	µg/kg	3.4 U	2.2 U	6.2 U	3.7 U	8.8 U	5.1 U	3.7 U	4.5 U	6.5 U	6.6 U
Methyl tert butyl ether (MTBE)	µg/kg	2.3 U	1.5 U	4.1 U	2.4 U	5.9 U	3.4 U	2.5 U	3.0 U	4.3 U	4.4 U
Methylene chloride	µg/kg	33 U	22 U	60 U	36 U	86 U	50 U	36 U	44 U	63 U	65 U
Styrene	µg/kg	3.2 U	2.1 U	5.8 U	3.5 U	8.3 U	4.8 U	3.5 U	4.3 U	6.1 U	6.3 U
Tetrachloroethene	µg/kg	2.0 U	1.3 U	3.7 U	2.2 U	5.2 U	3.0 U	2.2 U	2.7 U	3.9 U	3.9 U
Toluene	µg/kg	2.1 U	1.4 U	3.9 U	2.3 U	5.5 U	3.2 U	2.3 U	2.9 U	4.1 U	4.2 U
trans-1,2-Dichloroethene	µg/kg	1.3 U	0.83 U	2.3 U	1.4 U	3.3 U	1.9 U	1.4 U	1.7 U	2.5 U	2.5 U
trans-1,3-Dichloropropene	µg/kg	2.9 U	**4.7 J**	5.2 U	3.1 U	7.4 U	4.3 U	3.1 U	3.8 U	5.5 U	5.6 U
Trichloroethene	µg/kg	1.7 U	1.1 U	3.2 U	1.9 U	4.5 U	2.6 U	1.9 U	2.3 U	3.3 U	3.4 U
Trichlorofluoromethane (CFC-11)	µg/kg	3.0 U	1.9 U	5.4 U	3.2 U	7.7 U	4.4 U	3.3 U	4.0 U	5.7 U	5.8 U
Trifluorotrichloroethane (CFC-113)	µg/kg	3.5 U	2.3 U	6.4 U	3.8 U	9.2 U	5.3 U	3.9 U	4.7 U	6.8 U	6.9 U
Vinyl chloride	µg/kg	2.3 U	1.5 U	4.2 U	2.5 U	6.0 U	3.5 U	2.5 U	3.1 U	4.4 U	4.5 U
Xylenes (total)	µg/kg	4.4 U	2.8 U	8.0 U	4.7 U	11 U	6.5 U	4.8 U	5.9 U	8.4 U	8.6 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-06**	**SD-07**	**SD-08**	**SD-08**	**SD-10**	**SD-11**	**SD-11**	**SD-12**	**SD-13**	**SD-13**
Sample ID:		**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-014**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-019**	**SED-092518-38443-JPF-020**	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
Sample Date:		**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/26/2018**	**9/25/2018**	**9/25/2018**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.4 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS Duplicate**
Parameters	**Units**										
Semivolatile Organic Compounds											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	µg/kg	19 U	19 U	31 U	19 U	40 U	28 U	23 U	29 U	32 U	33 U
2,4,5-Trichlorophenol	µg/kg	130 U	130 U	220 U	130 U	280 U	190 U	160 U	200 U	220 U	230 U
2,4,6-Trichlorophenol	µg/kg	120 U	120 U	200 U	120 U	260 U	180 U	150 U	180 U	200 U	210 U
2,4-Dichlorophenol	µg/kg	85 U	84 U	140 U	85 U	180 U	120 U	100 U	130 U	140 U	140 U
2,4-Dimethylphenol	µg/kg	77 U	76 U	120 U	77 U	160 U	110 U	91 U	110 U	130 U	130 U
2,4-Dinitrophenol	µg/kg	270 U	270 U	440 U	270 U	570 U	400 U	320 U	400 U	450 U	460 U
2,4-Dinitrotoluene	µg/kg	120 U	120 U	190 U	120 U	250 U	180 U	140 U	180 U	200 U	200 U
2,6-Dinitrotoluene	µg/kg	110 U	110 U	170 U	110 U	230 U	160 U	130 U	160 U	180 U	180 U
2-Chloronaphthalene	µg/kg	27 U	27 U	44 U	27 U	56 U	40 U	32 U	40 U	44 U	46 U
2-Chlorophenol	µg/kg	19 U	19 U	31 U	19 U	40 U	28 U	23 U	29 U	32 U	33 U
2-Methylphenol	µg/kg	60 U	59 U	97 U	60 U	130 U	88 U	71 U	88 U	98 U	100 U
2-Nitroaniline	µg/kg	77 U	76 U	120 U	77 U	160 U	110 U	91 U	110 U	130 U	130 U
2-Nitrophenol	µg/kg	25 U	25 U	41 U	25 U	52 U	37 U	30 U	37 U	41 U	42 U
3&4-Methylphenol	µg/kg	56 U	55 U	91 U	56 U	120 U	82 U	66 U	83 U	92 U	95 U
3,3'-Dichlorobenzidine	µg/kg	83 U	82 U	130 U	83 U	170 U	120 U	98 U	120 U	140 U	140 U
3-Nitroaniline	µg/kg	95 U	94 U	150 U	95 U	200 U	140 U	110 U	140 U	160 U	160 U
4,6-Dinitro-2-methylphenol	µg/kg	150 U	150 U	250 U	150 U	320 U	230 U	180 U	230 U	250 U	260 U
4-Bromophenyl phenyl ether	µg/kg	27 U	27 U	44 U	27 U	56 U	40 U	32 U	40 U	44 U	46 U
4-Chloro-3-methylphenol	µg/kg	87 U	86 U	140 U	87 U	180 U	130 U	100 U	130 U	140 U	150 U
4-Chloroaniline	µg/kg	58 U	57 U	94 U	58 U	120 U	85 U	69 U	86 U	95 U	98 U
4-Chlorophenyl phenyl ether	µg/kg	27 U	27 U	44 U	27 U	56 U	40 U	32 U	40 U	44 U	46 U
4-Nitroaniline	µg/kg	120 U	110 U	190 U	120 U	240 U	170 U	140 U	170 U	190 U	200 U
4-Nitrophenol	µg/kg	180 U	180 U	290 U	180 U	380 U	270 U	210 U	270 U	300 U	310 U
Acetophenone	µg/kg	21 U	21 U	34 U	21 U	44 U	31 U	25 U	31 U	35 U	36 U
Atrazine	µg/kg	70 U	69 U	110 U	69 U	150 U	100 U	82 U	100 U	110 U	120 U
Benzaldehyde	µg/kg	45 U	44 U	72 U	44 U	93 U	65 U	52 U	65 U	73 U	75 U
Biphenyl (1,1-Biphenyl	µg/kg	33 U	32 U	53 U	33 U	69 U	48 U	39 U	48 U	54 U	56 U
bis(2-Chloroethoxy)methane	µg/kg	23 U	23 U	37 U	23 U	48 U	34 U	27 U	34 U	38 U	39 U
bis(2-Chloroethyl)ether	µg/kg	23 U	23 U	37 U	23 U	48 U	34 U	27 U	34 U	38 U	39 U
bis(2-Ethylhexyl)phthalate (DEHP	µg/kg	98 U	97 U	160 U	98 U	**220 J**	140 U	120 U	150 U	160 U	170 U
Butyl benzylphthalate (BBP	µg/kg	42 U	42 U	69 U	42 U	89 U	62 U	50 U	63 U	70 U	72 U
Caprolactam	µg/kg	140 U	140 U	230 U	140 U	300 U	210 U	170 U	210 U	240 U	250 U
Carbazole	µg/kg	37 U	36 U	59 U	37 U	77 U	54 U	43 U	54 U	60 U	62 U
Dibenzofuran	µg/kg	25 U	25 U	41 U	25 U	52 U	37 U	30 U	37 U	41 U	42 U
Diethyl phthalate	µg/kg	60 U	59 U	97 U	60 U	130 U	88 U	71 U	88 U	98 U	100 U
Dimethyl phthalate	µg/kg	27 U	27 U	44 U	27 U	56 U	40 U	32 U	40 U	44 U	46 U
Di-n-butylphthalate (DBP)	µg/kg	42 U	42 U	69 U	42 U	89 U	62 U	50 U	63 U	70 U	72 U
Di-n-octyl phthalate (DnOP)	µg/kg	54 U	54 U	87 U	54 U	110 U	79 U	64 U	80 U	89 U	91 U
Hexachlorobenzene	µg/kg	5.5 U	5.4 U	8.9 U	5.5 U	11 U	8.0 U	6.5 U	8.1 U	9.1 U	9.3 U
Hexachlorobutadiene	µg/kg	23 U	23 U	37 U	23 U	48 U	34 U	27 U	34 U	38 U	39 U
Hexachlorocyclopentadiene	µg/kg	120 U	120 U	190 U	120 U	R	180 U	140 U	180 U	200 U	200 U
Hexachloroethane	µg/kg	17 U	17 U	28 U	17 U	36 U	25 U	21 U	26 U	29 U	29 U
Isophorone	µg/kg	23 U	23 U	37 U	23 U	48 U	34 U	27 U	34 U	38 U	39 U
Nitrobenzene	µg/kg	25 U	25 U	41 U	25 U	52 U	37 U	30 U	37 U	41 U	42 U
N-Nitrosodi-n-propylamine	µg/kg	21 U	21 U	34 U	21 U	44 U	31 U	25 U	31 U	35 U	36 U
N-Nitrosodiphenylamine	µg/kg	23 U	23 U	37 U	23 U	48 U	34 U	27 U	34 U	38 U	39 U
Pentachlorophenol	µg/kg	110 U	110 U	180 U	110 U	230 U	160 U	130 U	170 U	180 U	190 U
Phenol	µg/kg	15 U	15 U	25 U	15 U	32 U	23 U	18 U	23 U	25 U	26 U
LMW-PAHs											
2-Methylnaphthalene	µg/kg	**8.3 J**	3.7 U	6.1 U	**7.4 J**	7.9 U	5.5 U	4.5 U	5.6 U	6.2 U	6.4 U
Acenaphthene	µg/kg	**9.7 J**	5.5 U	**14 J**	**14 J**	12 U	8.1 U	6.5 U	8.2 U	**31 J**	**36 J**
Acenaphthylene	µg/kg	**11 J**	7.7 U	13 U	**14 J**	16 U	11 U	9.2 U	11 U	13 U	13 U
Anthracene	µg/kg	**22 J**	**7.0 J**	**35 J**	**31**	**15 J**	**12 J**	5.5 U	**13 J**	**74**	**86**
Fluorene	µg/kg	**11 J**	5.2 U	**15 J**	**15 J**	11 U	7.7 U	6.3 U	7.8 U	**30 J**	**37 J**
Naphthalene	µg/kg	**10 J**	4.6 U	**12 J**	**8.3 J**	9.7 U	6.8 U	5.5 U	6.9 U	**11 J**	**12 J**
Phenanthrene	µg/kg	**110**	**38**	**160**	**110**	**71**	**57**	**27 J**	**58**	**340**	**400**
Total LMW-PAHs	µg/kg	**182**	**45**	**236**	**199.7**	**86**	**69**	**27**	**71**	**486**	**571**

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		SD-06	SD-07	SD-08	SD-08	SD-10	SD-11	SD-11	SD-12	SD-13	SD-13
Sample ID:		SED-092518-38443-JPF-018	SED-092518-38443-JPF-017	SED-092518-38443-JPF-015	SED-092518-38443-JPF-014	SED-092518-38443-JPF-016	SED-092518-38443-JPF-019	SED-092518-38443-JPF-020	SED-092618-38443-JPF-030	SED-092518-38443-JPF-022	SED-092518-38443-JPF-023
Sample Date:		9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/26/2018	9/25/2018	9/25/2018
Sample Depth:		0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.4 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS Duplicate
Parameters	**Units**										
HMW-PAHs											
Benzo(a)anthracene	µg/kg	110	52	180	170	79	76	31 J	72	390	450
Benzo(a)pyrene	µg/kg	140	68	220	200	110	99	38	89	410	530
Benzo(b)fluoranthene	µg/kg	160	99	310	290	170	150	50	110	680	750
Benzo(g,h,i)perylene	µg/kg	85	42	100	80	76	67	20 J	59	140	180
Benzo(k)fluoranthene	µg/kg	69	36	120	98	66	50	23 J	42 J	210	230
Chrysene	µg/kg	130	68	210	190	100	93	38	82	430	550
Dibenz(a,h)anthracene	µg/kg	20 J	13 U	29 J	24 J	28 U	20 U	16 U	20 U	52	71
Fluoranthene	µg/kg	280	110	420	380	210	170	78	150	830	980
Indeno(1,2,3-cd)pyrene	µg/kg	76	32	95	76	73	59	20 J	47	140	200
Pyrene	µg/kg	210	96	330	320	170	130	57	130	670	800
Total HMW-PAHs	µg/kg	1280	603	2014	1828	1054	894	355	781	3952	4741
Total PAHs	µg/kg	1462	648	2250	2027.7	1140	963	382	852	4438	5312
Metals											
Aluminum	mg/kg	8600	2900	8200	8800	12000 J	8300	10000	4600	9400	9900
Antimony	mg/kg	0.72	0.24 U	0.42 J	0.27 J	0.63 J	0.36 J	0.53 J	0.41 J	0.48 J	0.58 J
Arsenic	mg/kg	13	7.6	14	12	24	14	23	6.8	15	15
Barium	mg/kg	140	96	170	120	230	140	150	190	190	200
Beryllium	mg/kg	0.59	0.22 J	0.55	0.70	0.89	0.46	0.61	0.13 U	0.59	0.66
Cadmium	mg/kg	0.86	0.13 J	0.45 J	0.43	0.61 J	0.38 J	0.54	0.24 J	0.58	0.58 J
Calcium	mg/kg	91000	130000	90000	72000	120000	110000	120000	150000	96000	98000
Chromium	mg/kg	20	9.5	15	17	20	13	19	8.3	16	17
Cobalt	mg/kg	8.3	3.5	6.7	8.8	10	7.2	11	4.3	7.6	7.6
Copper	mg/kg	39	7.6	29	28	34	24	37	14	34	34
Iron	mg/kg	19000	10000	18000	20000	25000	18000	24000	9300	20000	21000
Lead	mg/kg	94	7.2	36	38	40	21	37	15	48	48
Magnesium	mg/kg	24000	29000	20000	25000	23000	26000	32000	19000	22000	23000
Manganese	mg/kg	520	430	660	620	730	790	1000	520	640	660
Mercury	mg/kg	0.10 J	0.034 U	0.081 J	0.072 J	0.063 U	0.056 U	0.10 J	0.061 J	0.10 J	0.11 J
Methyl mercury	µg/kg	0.24	0.14 U	0.21 U	0.14 U	0.33 J	0.20 U	0.16 U	0.20 U	0.22 U	0.23 U
Nickel	mg/kg	20	8.1	18	20	25	18	26	11	20	21
Potassium	mg/kg	1400	620	1400	1200	2000 J	1600	1900	940	1500	1600
Selenium	mg/kg	1.1 J	0.31 J	0.95 J	0.73 J	1.6 J	0.76 J	1.0 J	0.73 J	1.1 J	1.1 J
Silver	mg/kg	0.10 J	0.35 J	0.11 J	0.079 J	0.12 J	0.071 J	0.11 J	0.055 U	0.10 J	0.11 J
Sodium	mg/kg	150 J	140 J	170 J	130 J	250 J	170 J	180 J	180 J	170 J	180 J
Thallium	mg/kg	0.34	0.15 J	0.35 J	0.33 J	0.55 J	0.39 J	0.50	0.27 J	0.34 J	0.35 J
Vanadium	mg/kg	22	9.0	21	24	29	21	26	13	24	25
Zinc	mg/kg	390	28	100	96	160	89	130	54	140	150
SEM Metals											
Cadmium	umol/g	0.0067	0.0011 J	0.0038	0.0032	0.0049	0.0034	0.0047	0.00094 J	0.0045	0.0047
Copper	umol/g	0.46	0.15	0.45	0.34	0.42	0.38	0.43	0.18	0.46	0.47
Lead	umol/g	0.35	0.030	0.17	0.16	0.17	0.11	0.16	0.078	0.22	0.22
Mercury	umol/g	0.000016 U	0.000018 U	0.000026 U	0.000017 U	0.000034 U	0.000024 U	0.000019 U	0.000025 U	0.000026 U	0.000026 U
Nickel	umol/g	0.25	0.11	0.25	0.23	0.33	0.26	0.33	0.13	0.27	0.29
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	0.17	0.059	0.078	0.077	0.022	0.047	0.067	0.024	0.050	0.052
Zinc	umol/g	4.2	0.39	1.3	0.95	2.7 J	1.1	1.4	0.72	1.7	1.7
PCBs											
Aroclor-1016 (PCB-1016)	µg/kg	43 U	41 U	69 U	42 U	88 U	63 U	50 U	62 U	70 U	72 U
Aroclor-1221 (PCB-1221)	µg/kg	46 U	45 U	76 U	46 U	96 U	68 U	55 U	68 U	77 U	78 U
Aroclor-1232 (PCB-1232)	µg/kg	44 U	43 U	72 U	44 U	92 U	65 U	52 U	65 U	74 U	75 U
Aroclor-1242 (PCB-1242)	µg/kg	88 J	43 J	60 NJ	37 U	76 U	61 J	83 J	54 U	88 J	130 J
Aroclor-1248 (PCB-1248)	µg/kg	46 U	45 U	76 U	46 U	96 U	68 U	55 U	68 U	77 U	78 U
Aroclor-1254 (PCB-1254)	µg/kg	69 J	43 U	72 U	44 U	92 U	65 U	52 U	65 U	74 U	75 U
Aroclor-1260 (PCB-1260)	µg/kg	43 U	41 U	69 U	42 U	88 U	63 U	50 U	62 U	70 U	72 U
Herbicides											
2,4,5-T	µg/kg	24 U	25 U	40 U	24 U	51 U	36 U	29 U	36 UJ	41 U	41 U
2,4,5-TP (Silvex)	µg/kg	26 U	26 U	43 U	26 U	55 U	39 U	32 U	39 U	44 U	45 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	92 U	93 U	150 U	92 U	190 U	140 U	110 U	140 U	160 U	160 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-06**	**SD-07**	**SD-08**	**SD-08**	**SD-10**	**SD-11**	**SD-11**	**SD-12**	**SD-13**	**SD-13**
Sample ID:		**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-014**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-019**	**SED-092518-38443-JPF-020**	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
Sample Date:		**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/26/2018**	**9/25/2018**	**9/25/2018**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.4 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**
											Duplicate
Parameters	**Units**										
Pesticides											
4,4'-DDD	µg/kg	2.9 U	2.8 U	4.7 U	2.9 U	5.9 U	4.2 U	3.4 U	420 U	4.7 U	4.8 U
4,4'-DDE	µg/kg	2.9 U	2.8 U	4.8 U	2.9 U	6.1 U	4.3 U	3.4 U	4.3 U	4.8 U	4.9 U
4,4'-DDT	µg/kg	2.2 U	2.1 U	3.6 U	2.2 U	230 U	3.2 U	2.6 U	320 U	3.6 U	3.7 U
Aldrin	µg/kg	1.5 U	1.4 U	2.4 U	1.5 U	3.1 U	2.2 U	1.7 U	2.2 U	2.5 U	2.5 U
alpha-BHC	µg/kg	1.8 U	1.7 U	2.9 U	1.8 U	3.7 U	2.6 U	2.1 U	260 U	2.9 U	3.0 U
alpha-Chlordane	µg/kg	2.9 U	2.8 U	4.7 U	2.9 U	6.0 U	4.3 U	3.4 U	4.2 U	4.8 U	4.9 U
beta-BHC	µg/kg	3.3 U	3.2 U	5.4 U	3.3 U	6.9 U	4.9 U	3.9 U	4.9 U	5.5 U	5.7 U
delta-BHC	µg/kg	160 UJ	160 UJ	270 UJ	160 UJ	340 UJ	250 UJ	200 UJ	480 U	280 UJ	280 UJ
Dieldrin	µg/kg	2.1 U	2.1 U	3.5 U	2.1 U	4.4 U	3.1 U	2.5 U	3.1 U	3.5 U	3.6 U
Endosulfan I	µg/kg	2.3 U	2.2 U	3.8 U	2.3 U	4.8 U	3.4 U	2.7 U	3.4 U	3.8 U	3.9 U
Endosulfan II	µg/kg	2.9 U	2.8 U	4.7 U	2.9 U	5.9 U	4.2 U	3.4 U	4.2 U	4.7 U	4.8 U
Endosulfan sulfate	µg/kg	120 U	120 U	200 U	120 U	260 U	180 U	150 U	360 U	200 U	210 U
Endrin	µg/kg	3.7 U	3.5 U	6.0 U	3.7 U	7.6 U	5.4 U	4.3 U	5.4 U	6.1 U	6.2 U
Endrin aldehyde	µg/kg	130 U	120 U	210 U	130 U	260 U	190 U	150 U	370 U	210 U	210 U
Endrin ketone	µg/kg	1.7 U	1.7 U	2.8 U	1.7 U	180 U	2.5 U	2.0 U	2.5 U	2.8 U	2.9 U
gamma-BHC (lindane)	µg/kg	3.5 U	3.3 U	5.6 U	3.4 U	7.2 U	5.1 U	4.1 U	510 U	5.7 U	5.8 U
gamma-Chlordane	µg/kg	**3.5 J**	2.3 U	3.9 U	2.4 U	4.9 U	3.5 U	2.8 U	3.5 U	3.9 U	4.0 U
Heptachlor	µg/kg	3.1 U	2.9 U	5.0 U	3.0 U	6.3 U	4.5 U	3.6 U	4.5 U	5.1 U	5.2 U
Heptachlor epoxide	µg/kg	2.8 U	2.7 U	4.5 U	2.8 U	5.8 U	4.1 U	3.3 U	4.1 U	4.6 U	4.7 U
Methoxychlor	µg/kg	13 U	12 U	21 U	13 U	1300 U	19 U	15 U	19 U	21 U	21 U
Toxaphene	µg/kg	48 U	47 U	79 U	48 U	100 U	71 U	57 U	71 U	80 U	82 U
General Chemistry											
Cyanide (total)	mg/kg	0.32 U	0.33 U	0.52 U	0.37 U	**2.4**	0.47 U	0.49 U	0.50 U	0.53 U	0.54 U
Soot carbon	mg/kg	**11000**	**11000**	**12000**	**10000**	**6700**	**12000**	**20000**	**9500**	**9300**	**15000**
Sulfide	umol/g	**31**	**11**	**28**	**22**	**160**	**40**	**35**	**46 J**	**52**	**51**
Total organic carbon (TOC)	mg/kg	**16000**	**16000**	**29000**	**15000**	**34000**	**24000**	**15000**	**25000**	**36000**	**33000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-13**	**SD-14**	**SD-14**	**SD-14**	**SD-15**	**SD-16**	**SD-17**	**SD-17A**	**SD-17A**	**SD-17B**
Sample ID:		**SED-092518-38443-JPF-024**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-029**	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-38443-100319-JPF-001**	**SED-38443-100319-JPF-002**	**SED-38443-100319-JPF-003**
Sample Date:		**9/25/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/21/2018**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.3 ft BSS**	**0-0.5 ft BSS**
				Duplicate							
Parameters	**Units**										
Volatile Organic Compounds											
1,1,1-Trichloroethane	µg/kg	1.9 U	5.1 U	4.5 U	3.3 U	3.6 U	1.0 U	1.6 U	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	3.4 U	8.8 U	7.8 U	5.8 U	6.3 U	1.8 U	2.8 U	-	-	-
1,1,2-Trichloroethane	µg/kg	2.7 U	7.0 U	6.2 U	4.6 U	5.0 U	1.4 U	2.2 U	-	-	-
1,1-Dichloroethane	µg/kg	1.6 U	4.3 U	3.8 U	2.8 U	3.0 U	0.87 U	1.4 U	-	-	-
1,1-Dichloroethene	µg/kg	2.1 U	5.6 U	4.9 U	3.7 U	4.0 U	1.1 U	1.8 U	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1.3 U	3.5 U	3.1 U	2.3 U	2.5 U	0.72 U	1.1 U	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	8.5 U	22 U	20 U	15 U	16 U	4.5 U	7.0 U	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	1.8 U	4.8 U	4.2 U	3.1 U	3.4 U	0.97 U	1.5 U	-	-	-
1,2-Dichlorobenzene	µg/kg	2.6 U	6.9 U	6.1 U	4.5 U	4.9 U	1.4 U	2.2 U	-	-	-
1,2-Dichloroethane	µg/kg	1.8 U	4.8 U	4.2 U	3.1 U	3.4 U	0.97 U	1.5 U	-	-	-
1,2-Dichloropropane	µg/kg	2.0 U	5.3 U	4.6 U	3.4 U	3.7 U	1.1 U	1.7 U	-	-	-
1,3-Dichlorobenzene	µg/kg	1.9 U	5.0 U	4.4 U	3.3 U	3.6 U	1.0 U	1.6 U	-	-	-
1,4-Dichlorobenzene	µg/kg	2.1 U	5.5 U	4.8 U	3.6 U	3.9 U	1.1 U	1.7 U	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	**21 J**	**41 J**	**49 J**	**34 J**	**39 J**	**12 J**	6.9 U	-	-	-
2-Hexanone	µg/kg	9.6 U	25 U	22 U	17 U	18 U	5.1 U	8.0 U	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	µg/kg	8.8 U	23 U	20 U	15 U	16 U	4.7 U	7.2 U	-	-	-
Acetone	µg/kg	**65**	130 U	**110 J**	85 U	**150**	26 U	41 U	-	-	-
Benzene	µg/kg	1.6 U	4.3 U	3.8 U	2.8 U	3.1 U	0.88 U	1.4 U	-	-	-
Bromodichloromethane	µg/kg	1.6 U	4.2 U	3.7 U	2.8 U	3.0 U	0.86 U	1.3 U	-	-	-
Bromoform	µg/kg	5.7 U	15 U	13 U	9.7 U	11 U	3.0 U	4.7 U	-	-	-
Bromomethane (Methyl bromide)	µg/kg	2.3 U	6.1 U	5.4 U	4.0 U	4.3 U	1.2 U	1.9 UJ	-	-	-
Carbon disulfide	µg/kg	2.7 U	7.2 U	6.3 U	4.7 U	5.1 U	1.5 U	2.3 U	-	-	-
Carbon tetrachloride	µg/kg	7.7 U	20 U	18 U	13 U	14 U	4.1 U	6.3 U	-	-	-
Chlorobenzene	µg/kg	2.2 U	5.7 U	5.0 U	3.7 U	4.0 U	1.2 U	1.8 U	-	-	-
Chloroethane	µg/kg	2.9 U	7.5 U	6.6 U	4.9 U	5.4 U	1.5 U	2.4 U	-	-	-
Chloroform (Trichloromethane)	µg/kg	1.9 U	4.9 U	4.3 U	3.2 U	3.5 U	0.99 U	1.5 U	-	-	-
Chloromethane (Methyl chloride	µg/kg	2.5 U	6.4 U	5.7 U	4.2 U	4.6 U	1.3 U	2.0 U	-	-	-
cis-1,2-Dichloroethene	µg/kg	1.5 U	4.0 U	3.5 U	2.6 U	2.9 U	0.82 U	1.3 U	-	-	-
cis-1,3-Dichloropropene	µg/kg	3.4 U	8.9 U	7.8 U	5.8 U	6.3 U	1.8 U	2.8 U	-	-	-
Cyclohexane	µg/kg	3.2 U	8.5 U	7.5 U	5.6 U	6.0 U	1.7 U	2.7 U	-	-	-
Dibromochloromethane	µg/kg	6.6 U	17 U	15 U	11 U	12 U	3.5 U	5.4 U	-	-	-
Dichlorodifluoromethane (CFC-12)	µg/kg	2.2 U	5.8 U	5.1 U	3.8 U	4.1 U	1.2 U	1.8 U	-	-	-
Ethylbenzene	µg/kg	2.5 U	6.5 U	5.7 U	4.2 U	4.6 U	1.3 U	2.0 U	-	-	-
Isopropyl benzene	µg/kg	2.0 U	5.1 U	4.5 U	3.4 U	3.7 U	1.0 U	1.6 U	-	-	-
Methyl acetate	µg/kg	8.0 U	21 U	19 U	14 U	15 U	4.3 U	6.6 U	-	-	-
Methyl cyclohexane	µg/kg	2.9 U	7.6 U	6.7 U	5.0 U	5.4 U	1.5 U	2.4 U	-	-	-
Methyl tert butyl ether (MTBE)	µg/kg	1.9 U	5.1 U	4.5 U	3.3 U	3.6 U	1.0 U	1.6 U	-	-	-
Methylene chloride	µg/kg	28 U	74 U	65 U	49 U	53 U	15 U	23 U	-	-	-
Styrene	µg/kg	2.7 U	7.2 U	6.3 U	4.7 U	5.1 U	1.5 U	2.3 U	-	-	-
Tetrachloroethene	µg/kg	1.7 U	4.5 U	4.0 U	3.0 U	3.2 U	0.92 U	1.4 U	-	-	-
Toluene	µg/kg	1.8 U	4.8 U	4.2 U	3.1 U	3.4 U	**1.5 J**	**3.6 J**	-	-	-
trans-1,2-Dichloroethene	µg/kg	1.1 U	2.9 U	2.5 U	1.9 U	2.0 U	0.59 U	0.91 U	-	-	-
trans-1,3-Dichloropropene	µg/kg	2.4 U	6.4 U	5.6 U	4.2 U	4.5 U	1.3 U	2.0 U	-	-	-
Trichloroethene	µg/kg	1.5 U	3.9 U	3.4 U	2.6 U	2.8 U	0.80 U	1.2 U	-	-	-
Trichlorofluoromethane (CFC-11)	µg/kg	2.5 U	6.7 U	5.9 U	4.4 U	4.7 U	1.4 U	2.1 U	-	-	-
Trifluorotrichloroethane (CFC-113)	µg/kg	3.0 U	7.9 U	7.0 U	5.2 U	5.6 U	1.6 U	2.5 U	-	-	-
Vinyl chloride	µg/kg	2.0 U	5.2 U	4.6 U	3.4 U	3.7 U	1.1 U	1.6 U	-	-	-
Xylenes (total)	µg/kg	3.7 U	9.8 U	8.6 U	6.4 U	7.0 U	2.0 U	3.1 U	-	-	-

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-13**	**SD-14**	**SD-14**	**SD-14**	**SD-15**	**SD-16**	**SD-17**	**SD-17A**	**SD-17A**	**SD-17B**
Sample ID:		**SED-092518-38443-JPF-024**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-029**	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-38443-100319-JPF-001**	**SED-38443-100319-JPF-002**	**SED-38443-100319-JPF-003**
Sample Date:		**9/25/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/21/2018**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.3 ft BSS**	**0-0.5 ft BSS**
				Duplicate							
Parameters	**Units**										
Semivolatile Organic Compounds											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	µg/kg	16 U	37 U	36 U	25 U	32 U	12 U	650 U	29 U	42 U	26 U
2,4,5-Trichlorophenol	µg/kg	110 U	260 U	250 U	170 U	220 U	86 U	4500 U	200 U	290 U	180 U
2,4,6-Trichlorophenol	µg/kg	100 U	240 U	230 U	160 U	210 U	79 U	4100 U	190 U	270 U	170 U
2,4-Dichlorophenol	µg/kg	69 U	160 U	160 U	110 U	140 U	55 U	2900 U	130 U	190 U	110 U
2,4-Dimethylphenol	µg/kg	63 U	150 U	140 U	99 U	130 U	50 U	2600 U	120 U	170 U	100 U
2,4-Dinitrophenol	µg/kg	220 U	530 U	510 U	350 U	460 U	180 U	9200 U	420 U	600 U	370 U
2,4-Dinitrotoluene	µg/kg	97 U	230 U	220 U	150 U	200 U	77 U	4000 U	180 U	260 U	160 U
2,6-Dinitrotoluene	µg/kg	88 U	210 U	200 U	140 U	180 U	69 U	3600 U	160 U	240 U	150 U
2-Chloronaphthalene	µg/kg	22 U	52 U	50 U	35 U	45 U	17 U	910 U	41 U	59 U	36 U
2-Chlorophenol	µg/kg	16 U	37 U	36 U	25 U	32 U	12 U	650 U	29 U	42 U	26 U
2-Methylphenol	µg/kg	49 U	110 U	110 U	77 U	100 U	38 U	2000 U	91 U	130 U	80 U
2-Nitroaniline	µg/kg	63 U	150 U	140 U	99 U	130 U	50 U	2600 U	120 U	170 U	100 U
2-Nitrophenol	µg/kg	20 U	48 U	46 U	32 U	42 U	16 U	840 U	38 U	55 U	34 U
3&4-Methylphenol	µg/kg	46 U	110 U	100 U	72 U	94 U	36 U	1900 U	85 U	120 U	75 U
3,3'-Dichlorobenzidine	µg/kg	68 U	160 U	150 U	110 U	140 U	53 U	2800 U	130 U	180 U	110 U
3-Nitroaniline	µg/kg	77 U	180 U	170 U	120 U	160 U	61 U	3200 U	140 U	210 U	130 U
4,6-Dinitro-2-methylphenol	µg/kg	130 U	300 U	290 U	200 U	260 U	99 U	5200 U	230 U	340 U	210 U
4-Bromophenyl phenyl ether	µg/kg	22 U	52 U	50 U	35 U	45 U	17 U	910 U	41 U	59 U	36 U
4-Chloro-3-methylphenol	µg/kg	71 U	170 U	160 U	110 U	150 U	56 U	2900 U	130 U	190 U	120 U
4-Chloroaniline	µg/kg	47 U	110 U	110 U	75 U	97 U	37 U	1900 U	88 U	130 U	78 U
4-Chlorophenyl phenyl ether	µg/kg	22 U	52 U	50 U	35 U	45 U	17 U	910 U	41 U	59 U	36 U
4-Nitroaniline	µg/kg	94 U	220 U	210 U	150 U	190 U	74 U	3900 U	180 U	250 U	160 U
4-Nitrophenol	µg/kg	150 U	350 U	340 U	230 U	300 U	120 U	6100 U	280 U	400 U	240 U
Acetophenone	µg/kg	17 U	41 U	39 U	27 U	36 U	14 U	710 U	32 U	47 U	29 U
Atrazine	µg/kg	57 U	130 U	130 U	89 U	120 U	45 U	2300 U	110 U	150 U	93 U
Benzaldehyde	µg/kg	36 U	85 U	82 U	57 U	74 U	28 U	1500 U	67 U	97 U	60 U
Biphenyl (1,1-Biphenyl	µg/kg	27 U	63 U	61 U	42 U	55 U	21 U	1100 U	50 U	72 U	44 U
bis(2-Chloroethoxy)methane	µg/kg	19 U	44 U	43 U	30 U	39 U	15 U	780 U	35 U	51 U	31 U
bis(2-Chloroethyl)ether	µg/kg	19 U	44 U	43 U	30 U	39 U	15 U	780 U	35 U	51 U	31 U
bis(2-Ethylhexyl)phthalate (DEHP	µg/kg	80 U	190 U	180 U	130 U	160 U	63 U	3300 U	**160 J**	220 U	130 U
Butyl benzylphthalate (BBP	µg/kg	35 U	81 U	79 U	55 U	71 U	27 U	1400 U	64 U	93 U	57 U
Caprolactam	µg/kg	120 U	280 U	270 U	190 U	240 U	93 U	4900 U	220 U	320 U	190 U
Carbazole	µg/kg	**35 J**	70 U	68 U	47 U	61 U	24 U	**5400**	**130 J**	**200 J**	**130**
Dibenzofuran	µg/kg	**22 J**	48 U	46 U	32 U	42 U	16 U	**1600 J**	**48 J**	**56 J**	34 U
Diethyl phthalate	µg/kg	49 U	110 U	110 U	77 U	100 U	38 U	2000 U	91 U	130 U	80 U
Dimethyl phthalate	µg/kg	22 U	52 U	50 U	35 U	45 U	17 U	910 U	41 U	59 U	36 U
Di-n-butylphthalate (DBP)	µg/kg	35 U	81 U	79 U	55 U	71 U	27 U	1400 U	64 U	93 U	57 U
Di-n-octyl phthalate (DnOP)	µg/kg	44 U	100 U	100 U	70 U	91 U	35 U	1800 U	82 U	120 U	73 U
Hexachlorobenzene	µg/kg	4.5 U	11 U	10 U	7.1 U	9.2 U	3.5 U	180 U	8.3 U	12 U	7.4 U
Hexachlorobutadiene	µg/kg	19 U	44 U	43 U	30 U	39 U	15 U	780 U	35 U	51 U	31 U
Hexachlorocyclopentadiene	µg/kg	97 U	230 U	220 U	150 U	200 U	77 U	4000 U	180 U	260 U	160 U
Hexachloroethane	µg/kg	14 U	33 U	32 U	22 U	29 U	11 U	580 U	26 U	38 U	23 U
Isophorone	µg/kg	19 U	44 U	43 U	30 U	39 U	15 U	780 U	35 U	51 U	31 U
Nitrobenzene	µg/kg	20 U	48 U	46 U	32 U	42 U	16 U	840 U	38 U	55 U	34 U
N-Nitrosodi-n-propylamine	µg/kg	17 U	41 U	39 U	27 U	36 U	14 U	710 U	32 U	47 U	29 U
N-Nitrosodiphenylamine	µg/kg	19 U	44 U	43 U	30 U	39 U	15 U	780 U	35 U	51 U	31 U
Pentachlorophenol	µg/kg	91 U	210 U	210 U	140 U	190 U	72 U	3800 U	170 U	250 U	150 U
Phenol	µg/kg	13 U	30 U	29 U	20 U	26 U	9.9 U	520 U	23 U	34 U	21 U
LMW-PAHs											
2-Methylnaphthalene	µg/kg	**22 J**	7.3 U	7.0 U	**9.6 J**	6.3 U	2.4 U	**260 J**	**36 J**	**37 J**	**11 J**
Acenaphthene	µg/kg	**31**	11 U	10 U	**19 J**	9.2 U	3.5 U	**2900**	**57**	**110**	**57**
Acenaphthylene	µg/kg	**12 J**	15 U	14 U	**13 J**	13 U	5.0 U	260 U	**46**	**43 J**	10 U
Anthracene	µg/kg	**64**	**13 J**	8.6 U	**39**	**17 J**	**11 J**	**7800**	**220**	**350**	**150**
Fluorene	µg/kg	**35**	10 U	9.8 U	**23 J**	**11 J**	**5.1 J**	**3000**	**76**	**100**	**61**
Naphthalene	µg/kg	**20 J**	8.9 U	8.6 U	6.0 U	7.8 U	3.0 U	**300 J**	**41 J**	**46 J**	**13 J**
Phenanthrene	µg/kg	**270**	**67**	**66**	**240**	**79**	**51**	**37000**	**910**	**1400**	**720**
Total LMW-PAHs	µg/kg	**454**	**80**	**66**	**343.6**	**107**	**67.1**	**51260**	**1386**	**2086**	**1012**

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		SD-13	SD-14	SD-14	SD-14	SD-15	SD-16	SD-17	SD-17A	SD-17A	SD-17B
Sample ID:		SED-092518-38443-JPF-024	SED-092618-38443-JPF-026	SED-092618-38443-JPF-027	SED-092618-38443-JPF-028	SED-092618-38443-JPF-029	SED-092618-38443-JPF-025	SED-092118-38443-JPF-009	SED-38443-100319-JPF-001	SED-38443-100319-JPF-002	SED-38443-100319-JPF-003
Sample Date:		9/25/2018	9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/21/2018	10/3/2019	10/3/2019	10/3/2019
Sample Depth:		0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.3 ft BSS	0-0.5 ft BSS
				Duplicate							
Parameters	**Units**										
HMW-PAHs											
Benzo(a)anthracene	µg/kg	250	78	91	190	110	44	26000	910	1400	750
Benzo(a)pyrene	µg/kg	280	100	110	190	120	49	22000	1000	1400	710
Benzo(b)fluoranthene	µg/kg	390	150	180	310	160	67	33000	1300	1800	980
Benzo(g,h,i)perylene	µg/kg	150	41 J	39 J	150	110	30	11000	380	780	410
Benzo(k)fluoranthene	µg/kg	150	64	59	100	87	27	9300	610	730	280
Chrysene	µg/kg	290	97	110	230	140	54	29000	970	1700	770
Dibenz(a,h)anthracene	µg/kg	42	26 U	25 U	38	22 U	8.6 U	3700	100	240	150
Fluoranthene	µg/kg	610	170	190	450	220	100	59000	1600	2900	1300
Indeno(1,2,3-cd)pyrene	µg/kg	130	42 J	45 J	130	88	29	11000	390	710	370
Pyrene	µg/kg	470	140	160	360	200	76	41000	1500	2400	1200
Total HMW-PAHs	µg/kg	2762	882	984	2148	1235	476	245000	8760	14060	6920
Total PAHs	µg/kg	3216	962	1050	2491.6	1342	543.1	296260	10146	16146	7932
Metals											
Aluminum	mg/kg	8000	7600	7400	8500	7400	1500	4500	-	-	-
Antimony	mg/kg	0.33 J	0.63 J	0.59 J	0.71 J	0.53 J	0.12 J	0.24 J	-	-	-
Arsenic	mg/kg	11	12	12	12	13	6.4	7.9	-	-	-
Barium	mg/kg	120	180	180	160	140	19	53	-	-	-
Beryllium	mg/kg	0.50	0.47 U	0.44 U	0.46 U	0.21 U	0.15 U	0.38	-	-	-
Cadmium	mg/kg	0.50	0.50 J	0.50 J	0.64	0.34 J	0.059 J	0.37	-	-	-
Calcium	mg/kg	64000	110000	97000	94000	210000	150000	84000	-	-	-
Chromium	mg/kg	15	14	13	19	12	3.7	12	-	-	-
Cobalt	mg/kg	7.2	5.8	5.6	7.1	7.8	2.4	4.1	-	-	-
Copper	mg/kg	31	24	24	30	19	2.9	19	-	-	-
Iron	mg/kg	16000	15000	14000	16000	15000	5800	12000	-	-	-
Lead	mg/kg	49	25	25	37	20	3.2	35	-	-	-
Magnesium	mg/kg	19000	17000	16000	20000	33000	63000	33000	-	-	-
Manganese	mg/kg	460	390	380	460	570	320	320	-	-	-
Mercury	mg/kg	0.092 J	0.098 J	0.10 J	0.11 J	0.070 J	0.021 U	0.068 J	-	-	-
Methyl mercury	µg/kg	0.46	0.69	0.64	0.51	0.55	0.087 U	0.61	-	-	-
Nickel	mg/kg	19	17	17	19	16	4.1	11	-	-	-
Potassium	mg/kg	1200	1400	1300	1400	1500	320	770	-	-	-
Selenium	mg/kg	0.71 J	1.1 J	1.2 J	1.2 J	0.82 J	0.12 U	0.28 J	-	-	-
Silver	mg/kg	0.078 J	0.13 J	0.13 J	0.22 J	0.068 J	0.022 U	0.055 J	-	-	-
Sodium	mg/kg	120 J	200 J	190 J	160 J	240 J	170 J	140 J	-	-	-
Thallium	mg/kg	0.28 J	0.32 J	0.32 J	0.38 J	0.32 J	0.079 J	0.23 J	-	-	-
Vanadium	mg/kg	20	20	19	22	20	6.1	15	-	-	-
Zinc	mg/kg	120	90	87	110	77	13	62	-	-	-
SEM Metals											
Cadmium	umol/g	0.0083	0.0021 J	0.0019 J	0.0033	0.00095 J	0.00018 J	0.0029	-	-	-
Copper	umol/g	0.70	0.27	0.25	0.30	0.12	0.030	0.20	-	-	-
Lead	umol/g	0.47	0.15	0.13	0.20	0.11	0.014	0.13	-	-	-
Mercury	umol/g	0.000014 U	0.000029 U	0.000029 U	0.000021 U	0.000027 U	0.0000098 U	0.000013 U	-	-	-
Nickel	umol/g	0.22	0.21	0.20	0.23	0.18	0.020 J	0.090	-	-	-
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	0.34	0.024	0.025	0.029	0.015	0.12	0.34	-	-	-
Zinc	umol/g	2.4	1.2	1.2	1.3	1.0	0.14 J	0.58	-	-	-
PCBs											
Aroclor-1016 (PCB-1016)	µg/kg	34 U	80 U	77 U	53 U	71 U	26 U	35 U	-	-	-
Aroclor-1221 (PCB-1221)	µg/kg	37 U	88 U	84 U	58 U	77 U	29 U	38 U	-	-	-
Aroclor-1232 (PCB-1232)	µg/kg	36 U	84 U	81 U	55 U	74 U	28 U	37 U	-	-	-
Aroclor-1242 (PCB-1242)	µg/kg	71 J	69 U	67 U	46 U	61 U	23 U	30 U	-	-	-
Aroclor-1248 (PCB-1248)	µg/kg	37 U	88 U	84 U	58 U	77 U	29 U	38 U	-	-	-
Aroclor-1254 (PCB-1254)	µg/kg	36 U	84 U	81 U	78 J	74 U	28 U	420	-	-	-
Aroclor-1260 (PCB-1260)	µg/kg	34 U	80 U	77 U	53 U	71 U	26 U	35 U	-	-	-
Herbicides											
2,4,5-T	µg/kg	20 U	47 UJ	45 UJ	32 UJ	41 UJ	16 UJ	21 UJ	-	-	-
2,4,5-TP (Silvex)	µg/kg	21 U	51 U	48 U	34 U	44 U	17 U	23 U	-	-	-
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	75 U	180 U	170 U	120 U	160 U	59 U	79 U	-	-	-

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-13**	**SD-14**	**SD-14**	**SD-14**	**SD-15**	**SD-16**	**SD-17**	**SD-17A**	**SD-17A**	**SD-17B**
Sample ID:		**SED-092518-38443-JPF-024**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-029**	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-38443-100319-JPF-001**	**SED-38443-100319-JPF-002**	**SED-38443-100319-JPF-003**
Sample Date:		**9/25/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/26/2018**	**9/21/2018**	**10/3/2019**	**10/3/2019**	**10/3/2019**
Sample Depth:		**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.3 ft BSS**	**0-0.5 ft BSS**
				Duplicate							
Parameters	**Units**										
Pesticides											
4,4'-DDD	µg/kg	2.3 U	540 U	520 U	360 U	470 U	35 U	48 U	-	-	-
4,4'-DDE	µg/kg	2.3 U	5.5 U	5.3 U	3.6 U	4.8 U	1.8 U	49 U	-	-	-
4,4'-DDT	µg/kg	1.8 U	410 U	400 U	270 U	360 U	27 U	36 U	-	-	-
Aldrin	µg/kg	1.2 U	2.8 U	2.7 U	1.9 U	2.5 U	0.92 U	25 U	-	-	-
alpha-BHC	µg/kg	1.4 U	330 U	320 U	220 U	290 U	22 U	29 U	-	-	-
alpha-Chlordane	µg/kg	2.3 U	5.5 U	5.3 U	3.6 U	4.8 U	1.8 U	48 U	-	-	-
beta-BHC	µg/kg	2.7 U	6.3 U	6.1 U	4.2 U	5.5 U	2.1 U	56 U	-	-	-
delta-BHC	µg/kg	140 UJ	620 U	590 U	410 U	540 U	40 U	55 UJ	-	-	-
Dieldrin	µg/kg	1.7 U	4.0 U	3.9 U	2.6 U	3.5 U	1.3 U	35 U	-	-	-
Endosulfan I	µg/kg	1.9 U	4.4 U	4.2 U	2.9 U	3.8 U	1.4 U	39 U	-	-	-
Endosulfan II	µg/kg	2.3 U	5.4 U	5.2 U	3.6 U	4.7 U	1.8 U	48 U	-	-	-
Endosulfan sulfate	µg/kg	99 U	470 U	450 U	310 U	410 U	31 U	41 U	-	-	-
Endrin	µg/kg	2.9 U	6.9 U	6.7 U	4.6 U	6.1 U	2.3 U	61 U	-	-	-
Endrin aldehyde	µg/kg	100 U	480 U	460 U	310 U	420 U	1.6 U	42 U	-	-	-
Endrin ketone	µg/kg	1.4 U	3.2 U	3.1 U	2.1 U	2.9 U	1.1 U	29 U	-	-	-
gamma-BHC (lindane)	µg/kg	2.8 U	650 U	630 U	430 U	570 U	43 U	58 U	-	-	-
gamma-Chlordane	µg/kg	**2.3 J**	**12 J**	**12 NJ**	3.0 U	**4.5 NJ**	1.5 U	40 U	-	-	-
Heptachlor	µg/kg	2.4 U	5.8 U	5.5 U	3.8 U	5.1 U	1.9 U	51 U	-	-	-
Heptachlor epoxide	µg/kg	2.2 U	5.3 U	5.0 U	3.5 U	4.6 U	1.7 U	46 U	-	-	-
Methoxychlor	µg/kg	10 U	24 U	23 U	16 U	21 U	7.9 U	210 UJ	-	-	-
Toxaphene	µg/kg	39 U	91 U	88 U	60 U	80 U	30 U	800 U	-	-	-
General Chemistry											
Cyanide (total)	mg/kg	0.31 U	0.61 U	**0.77 J**	**0.58 J**	**2.6**	0.27 U	0.29 U	-	-	-
Soot carbon	mg/kg	**7700**	**15000**	**14000**	**9200**	**11000**	**15000**	**18000**	-	-	-
Sulfide	umol/g	**11**	**77 J**	**72 J**	**69 J**	**94 J**	**1.7 J**	**2.9 J**	-	-	-
Total organic carbon (TOC)	mg/kg	**16000**	**51000**	**40000**	**35000**	**30000**	**1900**	**14000**	-	-	-

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-17B**	**SD-17C**	**SD-17C**	**SD-17D**	**SD-17D**	**SD-17E**	**SD-18**	**SD-19**	**SD-19**	**SD-20**
Sample ID:		**SED-38443-100319-JPF-004**	**SED-38443-100419-JPF-005**	**SED-38443-100419-JPF-006**	**SED-38443-100419-JPF-007**	**SED-38443-100419-JPF-008**	**SED-38443-100419-JPF-009**	**SED-092418-38443-JPF-013**	**SED-092418-38443-JPF-011**	**SED-092418-38443-JPF-012**	**SED-092118-38443-JPF-010**
Sample Date:		**10/3/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**9/24/2018**	**9/24/2018**	**9/24/2018**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-0.83 ft BSS**	**0-0.5 ft BSS**	**0.5-0.92 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**
		Duplicate									
Parameters	**Units**										
Volatile Organic Compounds											
1,1,1-Trichloroethane	µg/kg	-	-	-	-	-	-	3.1 U	4.4 U	2.2 U	2.7 U
1,1,2,2-Tetrachloroethane	µg/kg	-	-	-	-	-	-	5.4 U	7.7 U	3.8 U	4.7 U
1,1,2-Trichloroethane	µg/kg	-	-	-	-	-	-	4.2 U	6.1 U	3.0 U	3.7 U
1,1-Dichloroethane	µg/kg	-	-	-	-	-	-	2.6 U	3.7 U	1.9 U	2.3 U
1,1-Dichloroethene	µg/kg	-	-	-	-	-	-	3.4 U	4.8 U	2.4 U	3.0 U
1,2,4-Trichlorobenzene	µg/kg	-	-	-	-	-	-	2.1 U	3.1 U	1.5 U	1.9 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	-	-	-	-	-	-	13 U	19 U	9.7 U	12 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	-	-	-	-	-	-	2.9 U	4.1 U	2.1 U	2.5 U
1,2-Dichlorobenzene	µg/kg	-	-	-	-	-	-	4.2 U	6.0 U	3.0 U	3.7 U
1,2-Dichloroethane	µg/kg	-	-	-	-	-	-	2.9 U	4.1 U	2.1 U	2.6 U
1,2-Dichloropropane	µg/kg	-	-	-	-	-	-	3.2 U	4.6 U	2.3 U	2.8 U
1,3-Dichlorobenzene	µg/kg	-	-	-	-	-	-	3.1 U	4.4 U	2.2 U	2.7 U
1,4-Dichlorobenzene	µg/kg	-	-	-	-	-	-	3.3 U	4.7 U	2.4 U	2.9 U
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	-	-	-	-	-	-	13 U	**73 J**	**16 J**	**20 J**
2-Hexanone	µg/kg	-	-	-	-	-	-	15 U	22 U	11 U	14 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK	µg/kg	-	-	-	-	-	-	14 U	20 U	10 U	12 U
Acetone	µg/kg	-	-	-	-	-	-	79 U	**210**	56 U	70 U
Benzene	µg/kg	-	-	-	-	-	-	2.6 U	3.7 U	1.9 U	**6.4 J**
Bromodichloromethane	µg/kg	-	-	-	-	-	-	2.5 U	3.6 U	1.8 U	2.2 U
Bromoform	µg/kg	-	-	-	-	-	-	9.0 U	13 U	6.5 U	7.9 U
Bromomethane (Methyl bromide)	µg/kg	-	-	-	-	-	-	3.7 U	5.3 UJ	2.7 UJ	3.3 UJ
Carbon disulfide	µg/kg	-	-	-	-	-	-	4.4 U	6.2 U	3.1 U	3.9 U
Carbon tetrachloride	µg/kg	-	-	-	-	-	-	12 U	17 U	8.7 U	11 U
Chlorobenzene	µg/kg	-	-	-	-	-	-	3.4 U	4.9 U	2.5 U	3.0 U
Chloroethane	µg/kg	-	-	-	-	-	-	4.6 U	6.5 U	3.3 U	4.0 U
Chloroform (Trichloromethane)	µg/kg	-	-	-	-	-	-	2.9 U	4.2 U	2.1 U	2.6 U
Chloromethane (Methyl chloride	µg/kg	-	-	-	-	-	-	3.9 U	5.6 U	2.8 U	3.5 U
cis-1,2-Dichloroethene	µg/kg	-	-	-	-	-	-	2.4 U	3.5 U	1.8 U	2.2 U
cis-1,3-Dichloropropene	µg/kg	-	-	-	-	-	-	5.4 U	7.7 U	3.9 U	4.8 U
Cyclohexane	µg/kg	-	-	-	-	-	-	5.1 U	7.4 U	3.7 U	4.6 U
Dibromochloromethane	µg/kg	-	-	-	-	-	-	10 U	15 U	7.5 U	9.2 U
Dichlorodifluoromethane (CFC-12)	µg/kg	-	-	-	-	-	-	3.5 U	5.0 U	2.5 U	3.1 U
Ethylbenzene	µg/kg	-	-	-	-	-	-	3.9 U	5.6 U	2.8 U	3.5 U
Isopropyl benzene	µg/kg	-	-	-	-	-	-	3.1 U	4.5 U	2.2 U	2.8 U
Methyl acetate	µg/kg	-	-	-	-	-	-	13 U	18 U	9.1 U	11 U
Methyl cyclohexane	µg/kg	-	-	-	-	-	-	4.6 U	6.6 U	3.3 U	4.1 U
Methyl tert butyl ether (MTBE)	µg/kg	-	-	-	-	-	-	3.1 U	4.4 U	2.2 U	2.7 U
Methylene chloride	µg/kg	-	-	-	-	-	-	45 U	64 U	32 U	40 U
Styrene	µg/kg	-	-	-	-	-	-	4.3 U	6.2 U	3.1 U	3.8 U
Tetrachloroethene	µg/kg	-	-	-	-	-	-	2.7 U	3.9 U	2.0 U	2.4 U
Toluene	µg/kg	-	-	-	-	-	-	2.9 U	4.1 U	2.1 U	2.6 U
trans-1,2-Dichloroethene	µg/kg	-	-	-	-	-	-	1.7 U	2.5 U	1.3 U	1.5 U
trans-1,3-Dichloropropene	µg/kg	-	-	-	-	-	-	3.9 U	5.5 U	2.8 U	3.4 U
Trichloroethene	µg/kg	-	-	-	-	-	-	2.4 U	3.4 U	1.7 U	2.1 U
Trichlorofluoromethane (CFC-11)	µg/kg	-	-	-	-	-	-	4.0 U	5.8 U	2.9 U	3.6 U
Trifluorotrichloroethane (CFC-113)	µg/kg	-	-	-	-	-	-	4.8 U	6.9 U	3.4 U	4.2 U
Vinyl chloride	µg/kg	-	-	-	-	-	-	3.1 U	4.5 U	2.3 U	2.8 U
Xylenes (total)	µg/kg	-	-	-	-	-	-	5.9 U	8.5 U	4.3 U	5.3 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-17B**	**SD-17C**	**SD-17C**	**SD-17D**	**SD-17D**	**SD-17E**	**SD-18**	**SD-19**	**SD-19**	**SD-20**
Sample ID:		**SED-38443-100319-JPF-004**	**SED-38443-100419-JPF-005**	**SED-38443-100419-JPF-006**	**SED-38443-100419-JPF-007**	**SED-38443-100419-JPF-008**	**SED-38443-100419-JPF-009**	**SED-092418-38443-JPF-013**	**SED-092418-38443-JPF-011**	**SED-092418-38443-JPF-012**	**SED-092118-38443-JPF-010**
Sample Date:		**10/3/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**9/24/2018**	**9/24/2018**	**9/24/2018**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-0.83 ft BSS**	**0-0.5 ft BSS**	**0.5-0.92 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**
		Duplicate									
Parameters	**Units**										
Semivolatile Organic Compounds											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	µg/kg	24 U	23 U	41 U	26 U	39 U	68 U	29 U	32 U	22 U	23 U
2,4,5-Trichlorophenol	µg/kg	170 U	160 U	280 U	180 U	270 U	470 U	200 U	220 U	150 U	160 U
2,4,6-Trichlorophenol	µg/kg	160 U	150 U	260 U	170 U	250 U	440 U	180 U	200 U	140 U	150 U
2,4-Dichlorophenol	µg/kg	110 U	100 U	180 U	110 U	170 U	300 U	130 U	140 U	99 U	100 U
2,4-Dimethylphenol	µg/kg	98 U	94 U	160 U	100 U	160 U	270 U	120 U	130 U	90 U	91 U
2,4-Dinitrophenol	µg/kg	350 U	330 U	580 U	370 U	550 U	R	410 U	450 U	320 U	320 U
2,4-Dinitrotoluene	µg/kg	150 U	150 U	250 U	160 U	240 U	420 U	180 U	200 U	140 U	140 U
2,6-Dinitrotoluene	µg/kg	140 U	130 U	230 U	150 U	220 U	380 U	160 U	180 U	130 U	130 U
2-Chloronaphthalene	µg/kg	34 U	33 U	57 U	36 U	54 U	95 U	40 U	44 U	31 U	32 U
2-Chlorophenol	µg/kg	24 U	23 U	41 U	26 U	39 U	68 U	29 U	32 U	22 U	23 U
2-Methylphenol	µg/kg	76 U	73 U	130 U	81 U	120 U	210 U	89 U	98 U	70 U	71 U
2-Nitroaniline	µg/kg	98 U	94 U	160 U	100 U	160 U	270 U	120 U	130 U	90 U	91 U
2-Nitrophenol	µg/kg	32 U	30 U	53 U	34 U	51 U	88 U	37 U	41 U	29 U	30 U
3&4-Methylphenol	µg/kg	71 U	68 U	120 U	76 U	110 U	200 U	83 U	92 U	65 U	66 U
3,3'-Dichlorobenzidine	µg/kg	110 U	100 U	180 U	110 U	170 U	290 U	120 U	140 U	96 U	98 U
3-Nitroaniline	µg/kg	120 U	110 U	200 U	130 U	190 U	330 U	140 U	160 U	110 U	110 U
4,6-Dinitro-2-methylphenol	µg/kg	200 U	190 U	330 U	210 U	310 U	540 U	230 U	250 U	180 U	180 U
4-Bromophenyl phenyl ether	µg/kg	34 U	33 U	57 U	36 U	54 U	95 U	40 U	44 U	31 U	32 U
4-Chloro-3-methylphenol	µg/kg	110 U	110 U	180 U	120 U	170 U	310 U	130 U	140 U	100 U	100 U
4-Chloroaniline	µg/kg	73 U	70 U	120 U	78 U	120 U	200 U	86 U	95 U	67 U	69 U
4-Chlorophenyl phenyl ether	µg/kg	34 U	33 U	57 U	36 U	54 U	95 U	40 U	44 U	31 U	32 U
4-Nitroaniline	µg/kg	150 U	140 U	240 U	160 U	230 U	410 U	170 U	190 U	130 U	140 U
4-Nitrophenol	µg/kg	230 U	220 U	380 U	240 U	370 U	640 U	270 U	300 U	210 U	210 U
Acetophenone	µg/kg	27 U	26 U	45 U	29 U	43 U	75 U	32 U	35 U	25 U	25 U
Atrazine	µg/kg	88 U	84 U	150 U	94 U	140 U	240 U	100 U	110 U	81 U	82 U
Benzaldehyde	µg/kg	56 U	54 U	94 U	60 U	89 U	160 U	66 U	73 U	52 U	53 U
Biphenyl (1,1-Biphenyl	µg/kg	42 U	40 U	69 U	44 U	66 U	120 U	49 U	54 U	38 U	39 U
bis(2-Chloroethoxy)methane	µg/kg	29 U	28 U	49 U	31 U	47 U	82 U	35 U	38 U	27 U	27 U
bis(2-Chloroethyl)ether	µg/kg	29 U	28 U	49 U	31 U	47 U	82 U	35 U	38 U	27 U	27 U
bis(2-Ethylhexyl)phthalate (DEHP	µg/kg	120 U	120 U	210 U	130 U	200 U	350 U	**200**	160 U	**120 J**	**230**
Butyl benzylphthalate (BBP	µg/kg	54 U	51 U	90 U	57 U	86 U	150 U	63 U	70 U	49 U	50 U
Caprolactam	µg/kg	180 U	180 U	310 U	200 U	290 U	510 U	220 U	240 U	170 U	170 U
Carbazole	µg/kg	**90 J**	**63 J**	**250**	**240**	**220**	**560**	55 U	60 U	43 U	43 U
Dibenzofuran	µg/kg	32 U	30 U	**97 J**	**50 J**	**95 J**	**150 J**	37 U	41 U	29 U	30 U
Diethyl phthalate	µg/kg	76 U	73 U	130 U	81 U	120 U	210 U	89 U	98 U	70 U	71 U
Dimethyl phthalate	µg/kg	34 U	33 U	57 U	36 U	54 U	95 U	40 U	44 U	31 U	32 U
Di-n-butylphthalate (DBP)	µg/kg	54 U	51 U	90 U	57 U	**2900**	150 U	63 U	70 U	49 U	50 U
Di-n-octyl phthalate (DnOP)	µg/kg	69 U	65 U	110 U	73 U	110 U	190 U	81 U	89 U	63 U	64 U
Hexachlorobenzene	µg/kg	7.0 U	6.7 U	12 U	7.4 U	11 U	19 U	8.2 U	9.0 U	6.4 U	6.5 U
Hexachlorobutadiene	µg/kg	29 U	28 U	49 U	31 U	47 U	82 U	35 U	38 U	27 U	27 U
Hexachlorocyclopentadiene	µg/kg	150 U	150 U	250 U	160 U	240 U	R	180 U	200 U	140 U	140 U
Hexachloroethane	µg/kg	22 U	21 U	37 U	23 U	35 U	61 U	26 U	29 U	20 U	21 U
Isophorone	µg/kg	29 U	28 U	49 U	31 U	47 U	82 U	35 U	38 U	27 U	27 U
Nitrobenzene	µg/kg	32 U	30 U	53 U	34 U	51 U	88 U	37 U	41 U	29 U	30 U
N-Nitrosodi-n-propylamine	µg/kg	27 U	26 U	45 U	29 U	43 U	75 U	32 U	35 U	25 U	25 U
N-Nitrosodiphenylamine	µg/kg	29 U	28 U	49 U	31 U	47 U	82 U	35 U	38 U	27 U	27 U
Pentachlorophenol	µg/kg	140 U	140 U	240 U	150 U	230 U	390 U	170 U	180 U	130 U	130 U
Phenol	µg/kg	20 U	19 U	33 U	21 U	31 U	54 U	23 U	25 U	18 U	18 U
LMW-PAHs											
2-Methylnaphthalene	µg/kg	4.8 U	**11 J**	**61**	**12 J**	**44 J**	**34 J**	5.6 U	6.2 U	**8.8 J**	4.5 U
Acenaphthene	µg/kg	**54**	**27 J**	**110**	**100**	**75**	**320**	8.2 U	9.1 U	**13 J**	**10 J**
Acenaphthylene	µg/kg	9.8 U	**16 J**	**42 J**	10 U	**62**	27 U	12 U	13 U	**11 J**	9.2 U
Anthracene	µg/kg	**120**	**97**	**370**	**280**	**370**	**770**	**21 J**	7.6 U	**26 J**	**20 J**
Fluorene	µg/kg	**45**	**36**	**160**	**110**	**130**	**310**	**10 J**	8.7 U	**16 J**	**9.6 J**
Naphthalene	µg/kg	5.9 U	**13 J**	**62**	**17 J**	**47 J**	**39 J**	6.9 U	7.6 U	5.4 U	5.5 U
Phenanthrene	µg/kg	**550**	**390**	**1600**	**1400**	**1700**	**3800 J**	**120**	**43 J**	**150**	**110**
Total LMW-PAHs	µg/kg	**769**	**590**	**2405**	**1919**	**2428**	**5273**	**151**	**43**	**224.8**	**149.6**

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		SD-17B	SD-17C	SD-17C	SD-17D	SD-17D	SD-17E	SD-18	SD-19	SD-19	SD-20
Sample ID:		SED-38443-100319-JPF-004	SED-38443-100419-JPF-005	SED-38443-100419-JPF-006	SED-38443-100419-JPF-007	SED-38443-100419-JPF-008	SED-38443-100419-JPF-009	SED-092418-38443-JPF-013	SED-092418-38443-JPF-011	SED-092418-38443-JPF-012	SED-092118-38443-JPF-010
Sample Date:		10/3/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	9/24/2018	9/24/2018	9/24/2018	9/21/2018
Sample Depth:		0-0.5 ft BSS	0-0.5 ft BSS	0.5-0.83 ft BSS	0-0.5 ft BSS	0.5-0.92 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS
		Duplicate									
Parameters	**Units**										
HMW-PAHs											
Benzo(a)anthracene	µg/kg	490	290	1400	1200	1200	3200 J	120	57	120	130
Benzo(a)pyrene	µg/kg	500	290	1400	1200	1400	2800 J	130	61	130	150
Benzo(b)fluoranthene	µg/kg	750	400	1700	1600	2000	3200 J	200	86	200	210
Benzo(g,h,i)perylene	µg/kg	340	190	690	790	510	1600	100	50	99	88
Benzo(k)fluoranthene	µg/kg	160	160	790	730	810	1500	70	40 J	70	74
Chrysene	µg/kg	510	310	1300	1200	1200	3000 J	150	62	150	170
Dibenz(a,h)anthracene	µg/kg	97	16 U	240	230	160	510	20 U	22 U	26 J	23 J
Fluoranthene	µg/kg	980	600	2500	2500	2200	5800	270	110	270	290
Indeno(1,2,3-cd)pyrene	µg/kg	290	170	630	720	530	1400	86	46 J	87	83
Pyrene	µg/kg	810	500	2000	2000	1800	5300	230	100	240	240
Total HMW-PAHs	µg/kg	4927	2910	12650	12170	11810	28310	1356	612	1392	1458
Total PAHs	µg/kg	5696	3500	15055	14089	14238	33583	1507	655	1616.8	1607.6
Metals											
Aluminum	mg/kg	-	-	-	-	-	-	7400	10000	9900	12000
Antimony	mg/kg	-	-	-	-	-	-	0.43 J	0.44 J	0.45 J	0.37 J
Arsenic	mg/kg	-	-	-	-	-	-	9.2	15	14	10
Barium	mg/kg	-	-	-	-	-	-	170	200	160	140
Beryllium	mg/kg	-	-	-	-	-	-	0.44 J	0.60	0.63	0.62
Cadmium	mg/kg	-	-	-	-	-	-	0.41 J	0.45 J	0.51	0.26 J
Calcium	mg/kg	-	-	-	-	-	-	140000	110000	100000	49000
Chromium	mg/kg	-	-	-	-	-	-	15	16	19	16
Cobalt	mg/kg	-	-	-	-	-	-	6.0	7.6	8.6	6.6
Copper	mg/kg	-	-	-	-	-	-	24	27	32	18
Iron	mg/kg	-	-	-	-	-	-	14000	20000	19000	18000
Lead	mg/kg	-	-	-	-	-	-	26	27	37	17
Magnesium	mg/kg	-	-	-	-	-	-	26000	21000	20000	14000
Manganese	mg/kg	-	-	-	-	-	-	420	550	540	340
Mercury	mg/kg	-	-	-	-	-	-	0.046 U	0.062 J	0.10 J	0.049 J
Methyl mercury	µg/kg	-	-	-	-	-	-	0.20 U	0.23 U	0.26	0.48
Nickel	mg/kg	-	-	-	-	-	-	17	20	21	18
Potassium	mg/kg	-	-	-	-	-	-	1300	1800	1600	1700
Selenium	mg/kg	-	-	-	-	-	-	0.97 J	1.1 J	1.1 J	0.62 J
Silver	mg/kg	-	-	-	-	-	-	0.13 J	0.084 J	0.099 J	0.061 J
Sodium	mg/kg	-	-	-	-	-	-	190 J	180 J	160 J	140 J
Thallium	mg/kg	-	-	-	-	-	-	0.28 J	0.39 J	0.39	0.26 J
Vanadium	mg/kg	-	-	-	-	-	-	20	25	24	27
Zinc	mg/kg	-	-	-	-	-	-	84	100	120	69
SEM Metals											
Cadmium	umol/g	-	-	-	-	-	-	0.0014	0.0038 J	0.0046	0.0020 J
Copper	umol/g	-	-	-	-	-	-	0.14	0.33	0.37	0.10
Lead	umol/g	-	-	-	-	-	-	0.048	0.14	0.21	0.079
Mercury	umol/g	-	-	-	-	-	-	0.000011 U	0.000028 U	0.000020 U	0.000018 U
Nickel	umol/g	-	-	-	-	-	-	0.096	0.28	0.27	0.17
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	-	-	-	-	0.058	0.033	0.054	0.082
Zinc	umol/g	-	-	-	-	-	-	0.39	1.2	1.3	0.48
PCBs											
Aroclor-1016 (PCB-1016)	µg/kg	-	-	-	-	-	-	64 U	69 U	49 U	49 U
Aroclor-1221 (PCB-1221)	µg/kg	-	-	-	-	-	-	70 U	76 U	53 U	54 U
Aroclor-1232 (PCB-1232)	µg/kg	-	-	-	-	-	-	67 U	73 U	51 U	52 U
Aroclor-1242 (PCB-1242)	µg/kg	-	-	-	-	-	-	55 J	60 J	77 J	43 U
Aroclor-1248 (PCB-1248)	µg/kg	-	-	-	-	-	-	70 U	76 U	53 U	54 U
Aroclor-1254 (PCB-1254)	µg/kg	-	-	-	-	-	-	67 U	73 U	51 U	52 U
Aroclor-1260 (PCB-1260)	µg/kg	-	-	-	-	-	-	64 U	69 U	49 U	49 U
Herbicides											
2,4,5-T	µg/kg	-	-	-	-	-	-	38 UJ	41 UJ	29 UJ	29 UJ
2,4,5-TP (Silvex)	µg/kg	-	-	-	-	-	-	41 U	44 U	32 U	32 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	-	-	-	-	-	-	140 U	160 U	110 U	110 U

Table 3.3a

Summary of Analytical Results
Sediment Samples
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:		**SD-17B**	**SD-17C**	**SD-17C**	**SD-17D**	**SD-17D**	**SD-17E**	**SD-18**	**SD-19**	**SD-19**	**SD-20**
Sample ID:		**SED-38443-100319-JPF-004**	**SED-38443-100419-JPF-005**	**SED-38443-100419-JPF-006**	**SED-38443-100419-JPF-007**	**SED-38443-100419-JPF-008**	**SED-38443-100419-JPF-009**	**SED-092418-38443-JPF-013**	**SED-092418-38443-JPF-011**	**SED-092418-38443-JPF-012**	**SED-092118-38443-JPF-010**
Sample Date:		**10/3/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**10/4/2019**	**9/24/2018**	**9/24/2018**	**9/24/2018**	**9/21/2018**
Sample Depth:		**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-0.83 ft BSS**	**0-0.5 ft BSS**	**0.5-0.92 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**
		Duplicate									
Parameters	**Units**										
Pesticides											
4,4'-DDD	µg/kg	-	-	-	-	-	-	4.3 U	4.7 U	3.3 U	16 U
4,4'-DDE	µg/kg	-	-	-	-	-	-	4.4 U	4.8 U	3.4 U	17 U
4,4'-DDT	µg/kg	-	-	-	-	-	-	3.3 U	3.6 U	2.5 U	13 U
Aldrin	µg/kg	-	-	-	-	-	-	2.2 U	2.4 U	1.7 U	8.5 U
alpha-BHC	µg/kg	-	-	-	-	-	-	2.6 U	2.9 U	2.0 U	10 U
alpha-Chlordane	µg/kg	-	-	-	-	-	-	4.4 U	4.7 U	3.3 U	17 U
beta-BHC	µg/kg	-	-	-	-	-	-	5.0 U	5.5 U	3.8 U	19 U
delta-BHC	µg/kg	-	-	-	-	-	-	240 UJ	280 UJ	200 UJ	190 UJ
Dieldrin	µg/kg	-	-	-	-	-	-	3.2 U	3.5 U	2.4 U	12 U
Endosulfan I	µg/kg	-	-	-	-	-	-	3.5 U	3.8 U	2.7 U	13 U
Endosulfan II	µg/kg	-	-	-	-	-	-	4.3 U	4.7 U	3.3 U	16 U
Endosulfan sulfate	µg/kg	-	-	-	-	-	-	190 U	200 U	140 U	14 U
Endrin	µg/kg	-	-	-	-	-	-	5.5 U	6.0 U	4.2 U	21 U
Endrin aldehyde	µg/kg	-	-	-	-	-	-	190 U	210 U	150 U	150 U
Endrin ketone	µg/kg	-	-	-	-	-	-	2.6 U	2.8 U	2.0 U	9.9 U
gamma-BHC (lindane)	µg/kg	-	-	-	-	-	-	5.2 U	5.6 U	4.0 U	20 U
gamma-Chlordane	µg/kg	-	-	-	-	-	-	3.6 U	3.9 U	2.7 U	14 U
Heptachlor	µg/kg	-	-	-	-	-	-	4.6 U	5.0 U	3.5 U	18 U
Heptachlor epoxide	µg/kg	-	-	-	-	-	-	4.2 U	4.5 U	3.2 U	16 U
Methoxychlor	µg/kg	-	-	-	-	-	-	19 U	21 U	15 U	73 UJ
Toxaphene	µg/kg	-	-	-	-	-	-	73 U	79 U	56 U	280 U
General Chemistry											
Cyanide (total)	mg/kg	-	-	-	-	-	-	0.55 U	**0.70 J**	0.41 U	0.39 U
Soot carbon	mg/kg	-	-	-	-	-	-	**7400**	**8100**	**4100**	**9500**
Sulfide	umol/g	-	-	-	-	-	-	**12 J**	**58**	**40**	**10 J**
Total organic carbon (TOC)	mg/kg	-	-	-	-	-	-	**31000**	**28000**	**21000**	**24000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-01	SD-02	SD-02	SD-03	SD-04	SD-04	SD-05	SD-05	SD-05A
Sample ID:						SED-092518-38443-JPF-021	SED-092118-38443-JPF-006	SED-092118-38443-JPF-007	SED-092118-38443-JPF-005	SED-092118-38443-JPF-003	SED-092118-38443-JPF-004	SED-092018-38443-JPF-001	SED-092118-38443-JPF-002	SED-38443-100419-JPF-010
Sample Date:						9/25/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/20/2018	9/21/2018	10/4/2019
Sample Depth:						0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS
								Duplicate						
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**									
Volatile Organic Compounds														
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	7604	-	23	73	**39 J**	4.7 U	4.4 U	**65 J**	**21 J**	8.4 U	**21 J**	**5.2 J**	-
Acetone	µg/kg	65	-	4	210	88 U	28 U	26 U	180 U	90 U	50 U	95 U	30 U	-
Benzene	µg/kg	10	-	3	6.4	**3.9 J**	0.93 U	0.86 U	5.9 U	3.0 U	1.7 U	**4.3 J**	1.0 U	-
Toluene	µg/kg	10	-	3	5.8	**5.8 J**	1.0 U	0.95 U	6.5 U	3.3 U	1.8 U	3.5 U	1.1 U	-
trans-1,3-Dichloropropene	µg/kg	-	-	1	4.7	4.3 U	1.4 U	1.3 U	8.7 U	4.4 U	2.4 U	4.7 U	1.5 U	-
Semivolatile Organic Compounds														
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	180	-	10	560	140 U	**120**	**140**	**560[a]**	**330[a]**	255 U	140 U	190 U	100 U
Carbazole	µg/kg	69	-	13	5400	52 U	26 U	26 U	110 U	51 U	**100 J[a]**	52 U	**150 J[a]**	38 U
Dibenzofuran	µg/kg	510	-	10	1600	35 U	18 U	18 U	74 U	35 U	**50 J**	36 U	**65 J**	26 U
Di-n-butylphthalate (DBP)	µg/kg	11	-	1	2900	60 U	30 U	30 U	130 U	59 U	85 U	60 U	84 U	44 U
LMW-PAHs														
2-Methylnaphthalene	µg/kg	20.2	-	18	260	**65[a]**	**15 J**	2.7 U	11 U	5.3 U	**21 J[a]**	5.4 U	**36 J[a]**	3.9 U
Acenaphthene	µg/kg	6.7	-	24	2900	7.8 U	**4.8 J**	3.9 U	16 U	**15 J[a]**	**80[a]**	**13 J[a]**	**160[a]**	5.7 U
Acenaphthylene	µg/kg	5.9	-	14	120	11 U	5.5 U	5.5 U	23 U	**17 J[a]**	**88[a]**	**20 J[a]**	**120[a]**	8.0 U
Anthracene	µg/kg	57	-	38	7800	**24 J**	**6.5 J**	**5.7 J**	**28 J**	**49**	**290[a]**	**46**	**390[a]**	**16 J**
Fluorene	µg/kg	77	-	28	3000	7.4 U	**5.1 J**	3.8 U	16 U	**19 J**	**99[a]**	**16 J**	**220[a]**	**6.8 J**
Naphthalene	µg/kg	176	-	19	300	**49**	**7.1 J**	3.3 U	14 U	6.5 U	**32 J**	6.6 U	**48 J**	4.8 U
Phenanthrene	µg/kg	204	-	41	37000	**110**	**48**	**25**	**120**	**200**	**1100[a]**	**180**	**1800[a]**	**63**
Total LMW-PAHs	µg/kg	600	-	41	51260	**248**	**86.5**	**30.7**	**148**	**300**	**1710[a]**	**275**	**2774[a]**	**85.8**
HMW-PAHs														
Benzo(a)anthracene	µg/kg	108	-	41	26000	**150[a]**	**41**	**33**	**180[a]**	**310[a]**	**1200[a]**	**300[a]**	**1800[a]**	**74**
Benzo(a)pyrene	µg/kg	150	-	41	22000	**160[a]**	**44**	**43**	**230[a]**	**360[a]**	**1200[a]**	**310[a]**	**1700[a]**	**96**
Benzo(b)fluoranthene	µg/kg	190	-	41	33000	**220[a]**	**79**	**51**	**290[a]**	**490[a]**	**1700[a]**	**450[a]**	**2400[a]**	**130**
Benzo(g,h,i)perylene	µg/kg	170	-	41	11000	**95**	**36**	**29**	**140**	**220[a]**	**730[a]**	**180[a]**	**1100[a]**	**58**
Benzo(k)fluoranthene	µg/kg	240	-	41	9300	**98**	**14 J**	**19 J**	**100**	**180**	**470[a]**	**140**	**950[a]**	**46**
Chrysene	µg/kg	166	-	41	29000	**160**	**54**	**39**	**220[a]**	**370[a]**	**1300[a]**	**330[a]**	**1800[a]**	**85**
Dibenz(a,h)anthracene	µg/kg	33	-	23	3700	**25 J**	9.4 U	9.5 U	40 U	**52[a]**	**220[a]**	**42[a]**	**260[a]**	14 U
Fluoranthene	µg/kg	423	-	41	59000	**300**	**92**	**67**	**380**	**610[a]**	**2900[a]**	**570[a]**	**4600[a]**	**160**
Indeno(1,2,3-cd)pyrene	µg/kg	200	-	40	11000	**79**	**31**	**24**	**140**	**220[a]**	**650[a]**	**170**	**910[a]**	**58**
Pyrene	µg/kg	195	-	41	41000	**240[a]**	**76**	**58**	**330[a]**	**540[a]**	**2100[a]**	**500[a]**	**3400[a]**	**130**
Total HMW-PAHs	µg/kg	1000	-	41	245000	**1527[a]**	**467**	**363**	**2010[a]**	**3352[a]**	**12470[a]**	**2992[a]**	**18920[a]**	**837**
Total PAHs	µg/kg	1610	-	41	296260	**1775[a]**	**553.5**	**393.7**	**2158[a]**	**3652[a]**	**14180[a]**	**3267[a]**	**21694[a]**	**922.8**
Metals														
Aluminum	mg/kg	25000	-	30	12000	**6300**	**2100**	**1900**	**6800**	**6800**	**8200**	**5400**	**6300**	-
Antimony	mg/kg	2	-	26	0.76	**0.45 J**	**0.14 J**	0.16 U	0.66 U	**0.29 J**	**0.39 J**	0.31 U	**0.76**	-
Arsenic	mg/kg	9.8	-	30	24	**8.7**	**3.1**	**3.0**	**11[a]**	**11[a]**	**11[a]**	**8.4**	**7.9**	-
Barium	mg/kg	20	-	30	290	**140[a]**	**33[a]**	**30[a]**	**290[a]**	**130[a]**	**130[a]**	**94[a]**	**78[a]**	-
Beryllium	mg/kg	-	-	24	0.89	**0.37 J**	**0.12 J**	**0.12 J**	**0.41 J**	**0.40 J**	**0.50**	**0.30 J**	**0.43**	-
Cadmium	mg/kg	1	-	30	0.86	**0.35 J**	**0.11 J**	**0.12 J**	**0.36 J**	**0.26 J**	**0.49**	**0.21 J**	**0.46**	-
Calcium	mg/kg	-	-	30	210000	**110000**	**90000**	**95000**	**200000**	**110000**	**110000**	**130000**	**90000**	-
Chromium	mg/kg	43.4	-	30	20	**16**	**5.6**	**6.0**	**13**	**11**	**14**	**10**	**11**	-
Cobalt	mg/kg	50	-	30	11	**5.2**	**2.4**	**2.6**	**5.0**	**5.3**	**6.4**	**5.1**	**5.6**	-
Copper	mg/kg	31.6	-	30	39	**23**	**3.8**	**5.5**	**23**	**17**	**26**	**12**	**20**	-
Iron	mg/kg	20000	-	30	25000	**13000**	**5600**	**5900**	**14000**	**14000**	**16000**	**11000**	**12000**	-
Lead	mg/kg	35.8	-	30	140	**140[a]**	**8.6**	**7.5**	**25**	**18**	**65[a]**	**16**	**52[a]**	-
Magnesium	mg/kg	-	-	30	63000	**22000**	**26000**	**36000**	**19000**	**24000**	**28000**	**37000**	**34000**	-
Manganese	mg/kg	460	-	30	1000	**380**	**240**	**260**	**340**	**630[a]**	**550[a]**	**590[a]**	**430**	-
Mercury	mg/kg	0.18 (AL)	0.17 (WB)	22	0.17	**0.051 J**	0.023 U	0.023 U	0.10 U	**0.059 J**	**0.17 J**	**0.057 J**	**0.097 J**	-
Methyl mercury	µg/kg	0.45	-	16	0.69	**0.65[a]**	0.097 U	0.098 U	0.42 U	**0.26 J**	**0.14 J**	**0.26 J**	**0.31**	-
Nickel	mg/kg	22.7	-	30	26	**14**	**4.7**	**6.0**	**15**	**14**	**17**	**12**	**13**	-
Potassium	mg/kg	-	-	30	2000	**960**	**340**	**280**	**1200**	**1300**	**1400**	**1100**	**910**	-
Selenium	mg/kg	0.72	0.8 (WB)	28	1.8	**0.89 J[ab]**	**0.14 J**	0.16 U	**1.8 J[ab]**	**0.61 J**	**0.77 J[a]**	**0.40 J**	**0.47 J**	-
Silver	mg/kg	1	-	24	0.35	**0.080 J**	0.025 U	0.029 U	0.12 U	**0.049 J**	**0.086 J**	0.054 U	**0.061 J**	-
Sodium	mg/kg	-	-	30	380	**170 J**	**120 J**	**130 J**	**380 J**	**180 J**	**160 J**	**210 J**	**170 J**	-
Thallium	mg/kg	-	-	30	0.55	**0.24 J**	**0.077 J**	**0.073 J**	**0.32 J**	**0.27 J**	**0.31**	**0.21 J**	**0.22**	-
Vanadium	mg/kg	-	-	30	29	**17**	**7.9**	**6.8**	**17**	**17**	**20**	**14**	**17**	-
Zinc	mg/kg	121	-	30	390	**76**	**27**	**29**	**86**	**65**	**110**	**52**	**71**	-

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater ESVs a	Region 4 Freshwater ESVs b	Detects	Max Detect	SD-01	SD-02	SD-02	SD-03	SD-04	SD-04	SD-05	SD-05	SD-05A
Sample ID:						SED-092518-38443-JPF-021	SED-092118-38443-JPF-006	SED-092118-38443-JPF-007	SED-092118-38443-JPF-005	SED-092118-38443-JPF-003	SED-092118-38443-JPF-004	SED-092018-38443-JPF-001	SED-092118-38443-JPF-002	SED-38443-100419-JPF-010
Sample Date:						9/25/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/21/2018	9/20/2018	9/21/2018	10/4/2019
Sample Depth:						0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS
								Duplicate						
SEM Metals														
Cadmium	umol/g	-	-	30	0.0083	**0.0027**	**0.00096 J**	**0.00092 J**	**0.0027 J**	**0.0024 J**	**0.0043**	**0.0020 J**	**0.0037**	-
Copper	umol/g	-	-	30	0.7	**0.23**	**0.069**	**0.069**	**0.19**	**0.21**	**0.21**	**0.18**	**0.15**	-
Lead	umol/g	-	-	30	0.47	**0.16**	**0.040**	**0.036**	**0.11**	**0.089**	**0.32**	**0.067**	**0.22**	-
Nickel	umol/g	-	-	30	0.33	**0.16**	**0.057**	**0.054**	**0.17**	**0.15**	**0.20**	**0.13**	**0.12**	-
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	30	0.47	**0.044**	**0.13**	**0.12**	**0.064**	**0.12**	**0.47**	**0.067**	**0.36**	-
Zinc	umol/g	-	-	30	4.2	**0.85**	**0.37**	**0.35**	**0.95**	**0.71**	**1.4**	**0.61**	**0.68**	-
PCBs														
Aroclor-1242 (PCB-1242)	µg/kg	-	-	11	130	49 U	26 U	26 U	100 U	51 U	36 U	52 U	29 U	-
Aroclor-1254 (PCB-1254)	µg/kg	-	-	4	420	60 U	32 U	31 U	130 U	61 U	43 U	63 U	**75 J**	-
Pesticides														
alpha-Chlordane	µg/kg	-	-	1	5.5	3.9 U	2.0 U	2.1 U	8.7 U	3.9 U	2.9 U	4.1 U	**5.5 J**	-
gamma-Chlordane	µg/kg	-	-	6	12	3.2 U	1.7 U	1.8 U	7.2 U	3.2 U	2.4 U	3.4 U	**4.7 J**	-
General Chemistry														
Cyanide (total)	mg/kg	-	-	6	2.6	0.46 U	0.25 U	0.24 U	1.1 U	0.50 U	0.34 U	0.53 U	0.26 U	-
Soot carbon	mg/kg	-	-	30	20000	**6600**	**9200**	**6000**	**8400**	**14000**	**12000**	**9300**	**6500**	-
Sulfide	umol/g	-	-	30	160	**32**	**4.1 J**	**4.2 J**	**22 J**	**9.7 J**	**4.5 J**	**15 J**	**3.3 J**	-
Total organic carbon (TOC)	mg/kg	-	-	30	56000	**28000**	**3800**	**3100**	**56000**	**21000**	**15000**	**15000**	**9900**	-

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
[a],[b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
Originally published November 1995

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-05B	SD-06	SD-06	SD-07	SD-08	SD-08	SD-10	SD-11
Sample ID:						SED-38443-100419-JPF-011	SED-092118-38443-JPF-008	SED-092518-38443-JPF-018	SED-092518-38443-JPF-017	SED-092518-38443-JPF-015	SED-092518-38443-JPF-014	SED-092518-38443-JPF-016	SED-092518-38443-JPF-019
Sample Date:						10/4/2019	9/21/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018
Sample Depth:						0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.4 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**								
Volatile Organic Compounds													
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	7604	-	23	73	-	39 J	15 J	6.4 U	18 J	12 J	42 J	20 J
Acetone	µg/kg	65	-	4	210	-	120 U	58 U	38 U	110 U	63 U	150 U	87 U
Benzene	µg/kg	10	-	3	6.4	-	3.9 U	1.9 U	1.3 U	3.5 U	2.1 U	5.0 U	2.9 U
Toluene	µg/kg	10	-	3	5.8	-	4.3 U	2.1 U	1.4 U	3.9 U	2.3 U	5.5 U	3.2 U
trans-1,3-Dichloropropene	µg/kg	-	-	1	4.7	-	5.8 U	2.9 U	4.7 J	5.2 U	3.1 U	7.4 U	4.3 U
Semivolatile Organic Compounds													
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	180	-	10	560	100 U	330[a]	98 U	97 U	160 U	98 U	220 J[a]	140 U
Carbazole	µg/kg	69	-	13	5400	38 U	71 U	37 U	36 U	59 U	37 U	77 U	54 U
Dibenzofuran	µg/kg	510	-	10	1600	26 U	48 U	25 U	25 U	41 U	25 U	52 U	37 U
Di-n-butylphthalate (DBP)	µg/kg	11	-	1	2900	44 U	82 U	42 U	42 U	69 U	42 U	89 U	62 U
LMW-PAHs													
2-Methylnaphthalene	µg/kg	20.2	-	18	260	3.9 U	7.3 U	8.3 J	3.7 U	6.1 U	7.4 J	7.9 U	5.5 U
Acenaphthene	µg/kg	6.7	-	24	2900	5.8 U	11 U	9.7 J[a]	5.5 U	14 J[a]	14 J[a]	12 U	8.1 U
Acenaphthylene	µg/kg	5.9	-	14	120	8.1 U	15 U	11 J[a]	7.7 U	13 U	14 J[a]	16 U	11 U
Anthracene	µg/kg	57	-	38	7800	6.8 J	13 J	22 J	7.0 J	35 J	31	15 J	12 J
Fluorene	µg/kg	77	-	28	3000	5.5 U	10 U	11 J	5.2 U	15 J	15 J	11 U	7.7 U
Naphthalene	µg/kg	176	-	19	300	4.9 U	9.0 U	10 J	4.6 U	12 J	8.3 J	9.7 U	6.8 U
Phenanthrene	µg/kg	204	-	41	37000	35	53 J	110	38	160	110	71	57
Total LMW-PAHs	µg/kg	600	-	41	51260	41.8	66	182	45	236	199.7	86	69
HMW-PAHs													
Benzo(a)anthracene	µg/kg	108	-	41	26000	46	77	110[a]	52	180[a]	170[a]	79	76
Benzo(a)pyrene	µg/kg	150	-	41	22000	54	97	140	68	220[a]	200[a]	110	99
Benzo(b)fluoranthene	µg/kg	190	-	41	33000	67	130	160	99	310[a]	290[a]	170	150
Benzo(g,h,i)perylene	µg/kg	170	-	41	11000	41	83	85	42	100	80	76	67
Benzo(k)fluoranthene	µg/kg	240	-	41	9300	26 J	48 J	69	36	120	98	66	50
Chrysene	µg/kg	166	-	41	29000	47	94	130	68	210[a]	190[a]	100	93
Dibenz(a,h)anthracene	µg/kg	33	-	23	3700	14 U	26 U	20 J	13 U	29 J	24 J	28 U	20 U
Fluoranthene	µg/kg	423	-	41	59000	68	160	280	110	420	380	210	170
Indeno(1,2,3-cd)pyrene	µg/kg	200	-	40	11000	15 U	66	76	32	95	76	73	59
Pyrene	µg/kg	195	-	41	41000	73	150	210[a]	96	330[a]	320[a]	170	130
Total HMW-PAHs	µg/kg	1000	-	41	245000	422	905	1280[a]	603	2014[a]	1828[a]	1054[a]	894
Total PAHs	µg/kg	1610	-	41	296260	463.8	971	1462	648	2250[a]	2027.7[a]	1140	963
Metals													
Aluminum	mg/kg	25000	-	30	12000	-	11000 J	8600	2900	8200	8800	12000 J	8300
Antimony	mg/kg	2	-	26	0.76	-	0.63 J	0.72	0.24 U	0.42 J	0.27 J	0.63 J	0.36 J
Arsenic	mg/kg	9.8	-	30	24	-	20[a]	13[a]	7.6	14[a]	12[a]	24[a]	14[a]
Barium	mg/kg	20	-	30	290	-	190[a]	140[a]	96[a]	170[a]	120[a]	230[a]	140[a]
Beryllium	mg/kg	-	-	24	0.89	-	0.66 J	0.59	0.22 J	0.55	0.70	0.89	0.46
Cadmium	mg/kg	1	-	30	0.86	-	0.52 J	0.86	0.13 J	0.45 J	0.43	0.61 J	0.38 J
Calcium	mg/kg	-	-	30	210000	-	110000	91000	130000	90000	72000	120000	110000
Chromium	mg/kg	43.4	-	30	20	-	19	20	9.5	15	17	20	13
Cobalt	mg/kg	50	-	30	11	-	7.8	8.3	3.5	6.7	8.8	10	7.2
Copper	mg/kg	31.6	-	30	39	-	29	39[a]	7.6	29	28	34[a]	24
Iron	mg/kg	20000	-	30	25000	-	21000[a]	19000	10000	18000	20000	25000[a]	18000
Lead	mg/kg	35.8	-	30	140	-	41[a]	94[a]	7.2	36[a]	38[a]	40[a]	21
Magnesium	mg/kg	-	-	30	63000	-	20000	24000	29000	20000	25000	23000	26000
Manganese	mg/kg	460	-	30	1000	-	640[a]	520[a]	430	660[a]	620[a]	730[a]	790[a]
Mercury	mg/kg	0.18 (AL)	0.17 (WB)	22	0.17	-	0.089 J	0.10 J	0.034 U	0.081 J	0.072 J	0.063 U	0.056 U
Methyl mercury	µg/kg	0.45	-	16	0.69	-	0.27 J	0.24	0.14 U	0.21 U	0.14 U	0.33 J	0.20 U
Nickel	mg/kg	22.7	-	30	26	-	21	20	8.1	18	20	25[a]	18
Potassium	mg/kg	-	-	30	2000	-	1900	1400	620	1400	1200	2000 J	1600
Selenium	mg/kg	0.72	0.8 (WB)	28	1.8	-	1.2 J[ab]	1.1 J[ab]	0.31 J	0.95 J[ab]	0.73 J[a]	1.6 J[ab]	0.76 J[a]
Silver	mg/kg	1	-	24	0.35	-	0.12 J	0.10 J	0.35 J	0.11 J	0.079 J	0.12 J	0.071 J
Sodium	mg/kg	-	-	30	380	-	300 J	150 J	140 J	170 J	130 J	250 J	170 J
Thallium	mg/kg	-	-	30	0.55	-	0.47 J	0.34	0.15 J	0.35 J	0.33 J	0.55 J	0.39 J
Vanadium	mg/kg	-	-	30	29	-	25	22	9.0	21	24	29	21
Zinc	mg/kg	121	-	30	390	-	150[a]	390[a]	28	100	96	160[a]	89

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater ESVs a	Region 4 Freshwater ESVs b	Detects	Max Detect								
Sample Location:						**SD-05B**	**SD-06**	**SD-06**	**SD-07**	**SD-08**	**SD-08**	**SD-10**	**SD-11**
Sample ID:						**SED-38443-100419-JPF-011**	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-014**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-019**
Sample Date:						**10/4/2019**	**9/21/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**	**9/25/2018**
Sample Depth:						**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.5 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**	**0.5-1.4 ft BSS**	**0-0.5 ft BSS**	**0-0.5 ft BSS**
SEM Metals													
Cadmium	umol/g	-	-	30	0.0083	-	**0.0050**	**0.0067**	**0.0011 J**	**0.0038**	**0.0032**	**0.0049**	**0.0034**
Copper	umol/g	-	-	30	0.7	-	**0.34 J**	**0.46**	**0.15**	**0.45**	**0.34**	**0.42**	**0.38**
Lead	umol/g	-	-	30	0.47	-	**0.21**	**0.35**	**0.030**	**0.17**	**0.16**	**0.17**	**0.11**
Nickel	umol/g	-	-	30	0.33	-	**0.25**	**0.25**	**0.11**	**0.25**	**0.23**	**0.33**	**0.26**
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	30	0.47	-	**0.13**	**0.17**	**0.059**	**0.078**	**0.077**	**0.022**	**0.047**
Zinc	umol/g	-	-	30	4.2	-	**2.0 J**	**4.2**	**0.39**	**1.3**	**0.95**	**2.7 J**	**1.1**
PCBs													
Aroclor-1242 (PCB-1242)	µg/kg	-	-	11	130	-	68 U	**88 J**	**43 J**	**60 NJ**	37 U	76 U	**61 J**
Aroclor-1254 (PCB-1254)	µg/kg	-	-	4	420	-	83 U	**69 J**	43 U	72 U	44 U	92 U	65 U
Pesticides													
alpha-Chlordane	µg/kg	-	-	1	5.5	-	28 U	2.9 U	2.8 U	4.7 U	2.9 U	6.0 U	4.3 U
gamma-Chlordane	µg/kg	-	-	6	12	-	23 U	**3.5 J**	2.3 U	3.9 U	2.4 U	4.9 U	3.5 U
General Chemistry													
Cyanide (total)	mg/kg	-	-	6	2.6	-	**1.4 J**	0.32 U	0.33 U	0.52 U	0.37 U	**2.4**	0.47 U
Soot carbon	mg/kg	-	-	30	20000	-	**7200**	**11000**	**11000**	**12000**	**10000**	**6700**	**12000**
Sulfide	umol/g	-	-	30	160	-	**23 J**	**31**	**11**	**28**	**22**	**160**	**40**
Total organic carbon (TOC)	mg/kg	-	-	30	56000	-	**26000**	**16000**	**16000**	**29000**	**15000**	**34000**	**24000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
[a],[b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
Originally published November 1995

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-11	SD-12	SD-13	SD-13	SD-13	SD-14	SD-14	SD-14
Sample ID:						SED-092518-38443-JPF-020	SED-092618-38443-JPF-030	SED-092518-38443-JPF-022	SED-092518-38443-JPF-023	SED-092518-38443-JPF-024	SED-092618-38443-JPF-026	SED-092618-38443-JPF-027	SED-092618-38443-JPF-028
Sample Date:						9/25/2018	9/26/2018	9/25/2018	9/25/2018	9/25/2018	9/26/2018	9/26/2018	9/26/2018
Sample Depth:						0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS
									Duplicate			Duplicate	
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**								
Volatile Organic Compounds													
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	7604	-	23	73	11 U	**17 J**	**22 J**	**31 J**	**21 J**	**41 J**	**49 J**	**34 J**
Acetone	µg/kg	65	-	4	210	64 U	78 U	110 U	110 U	**65**	130 U	**110 J[a]**	85 U
Benzene	µg/kg	10	-	3	6.4	2.1 U	2.6 U	3.7 U	3.8 U	1.6 U	4.3 U	3.8 U	2.8 U
Toluene	µg/kg	10	-	3	5.8	2.3 U	2.9 U	4.1 U	4.2 U	1.8 U	4.8 U	4.2 U	3.1 U
trans-1,3-Dichloropropene	µg/kg	-	-	1	4.7	3.1 U	3.8 U	5.5 U	5.6 U	2.4 U	6.4 U	5.6 U	4.2 U
Semivolatile Organic Compounds													
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	180	-	10	560	120 U	150 U	160 U	170 U	80 U	190 U	180 U	130 U
Carbazole	µg/kg	69	-	13	5400	43 U	54 U	60 U	62 U	**35 J**	70 U	68 U	47 U
Dibenzofuran	µg/kg	510	-	10	1600	30 U	37 U	41 U	42 U	**22 J**	48 U	46 U	32 U
Di-n-butylphthalate (DBP)	µg/kg	11	-	1	2900	50 U	63 U	70 U	72 U	35 U	81 U	79 U	55 U
LMW-PAHs													
2-Methylnaphthalene	µg/kg	20.2	-	18	260	4.5 U	5.6 U	6.2 U	6.4 U	**22 J[a]**	7.3 U	7.0 U	**9.6 J**
Acenaphthene	µg/kg	6.7	-	24	2900	6.5 U	8.2 U	**31 J[a]**	**36 J[a]**	**31[a]**	11 U	10 U	**19 J[a]**
Acenaphthylene	µg/kg	5.9	-	14	120	9.2 U	11 U	13 U	13 U	**12 J[a]**	15 U	14 U	**13 J[a]**
Anthracene	µg/kg	57	-	38	7800	5.5 U	**13 J**	**74[a]**	**86[a]**	**64[a]**	**13 J**	8.6 U	**39**
Fluorene	µg/kg	77	-	28	3000	6.3 U	7.8 U	**30 J**	**37 J**	**35**	10 U	9.8 U	**23 J**
Naphthalene	µg/kg	176	-	19	300	5.5 U	6.9 U	**11 J**	**12 J**	**20 J**	8.9 U	8.6 U	6.0 U
Phenanthrene	µg/kg	204	-	41	37000	**27 J**	**58**	**340[a]**	**400[a]**	**270[a]**	**67**	**66**	**240[a]**
Total LMW-PAHs	µg/kg	600	-	41	51260	**27**	**71**	**486**	**571**	**454**	**80**	**66**	**343.6**
HMW-PAHs													
Benzo(a)anthracene	µg/kg	108	-	41	26000	**31 J**	**72**	**390[a]**	**450[a]**	**250[a]**	**78**	**91**	**190[a]**
Benzo(a)pyrene	µg/kg	150	-	41	22000	**38**	**89**	**410[a]**	**530[a]**	**280[a]**	**100**	**110**	**190[a]**
Benzo(b)fluoranthene	µg/kg	190	-	41	33000	**50**	**110**	**680[a]**	**750[a]**	**390[a]**	**150**	**180**	**310[a]**
Benzo(g,h,i)perylene	µg/kg	170	-	41	11000	**20 J**	**59**	**140**	**180[a]**	**150**	**41 J**	**39 J**	**150**
Benzo(k)fluoranthene	µg/kg	240	-	41	9300	**23 J**	**42 J**	**210**	**230**	**150**	**64**	**59**	**100**
Chrysene	µg/kg	166	-	41	29000	**38**	**82**	**430[a]**	**550[a]**	**290[a]**	**97**	**110**	**230[a]**
Dibenz(a,h)anthracene	µg/kg	33	-	23	3700	16 U	20 U	**52[a]**	**71[a]**	**42[a]**	26 U	25 U	**38[a]**
Fluoranthene	µg/kg	423	-	41	59000	**78**	**150**	**830[a]**	**980[a]**	**610[a]**	**170**	**190**	**450[a]**
Indeno(1,2,3-cd)pyrene	µg/kg	200	-	40	11000	**20 J**	**47**	**140**	**200**	**130**	**42 J**	**45 J**	**130**
Pyrene	µg/kg	195	-	41	41000	**57**	**130**	**670[a]**	**800[a]**	**470[a]**	**140**	**160**	**360[a]**
Total HMW-PAHs	µg/kg	1000	-	41	245000	**355**	**781**	**3952[a]**	**4741[a]**	**2762[a]**	**882**	**984**	**2148[a]**
Total PAHs	µg/kg	1610	-	41	296260	**382**	**852**	**4438[a]**	**5312[a]**	**3216[a]**	**962**	**1050**	**2491.6[a]**
Metals													
Aluminum	mg/kg	25000	-	30	12000	**10000**	**4600**	**9400**	**9900**	**8000**	**7600**	**7400**	**8500**
Antimony	mg/kg	2	-	26	0.76	**0.53 J**	**0.41 J**	**0.48 J**	**0.58 J**	**0.33 J**	**0.63 J**	**0.59 J**	**0.71 J**
Arsenic	mg/kg	9.8	-	30	24	**23[a]**	**6.8**	**15[a]**	**15[a]**	**11[a]**	**12[a]**	**12[a]**	**12[a]**
Barium	mg/kg	20	-	30	290	**150[a]**	**190[a]**	**190[a]**	**200[a]**	**120[a]**	**180[a]**	**180[a]**	**160[a]**
Beryllium	mg/kg	-	-	24	0.89	**0.61**	0.13 U	**0.59**	**0.66**	**0.50**	0.47 U	0.44 U	0.46 U
Cadmium	mg/kg	1	-	30	0.86	**0.54**	**0.24 J**	**0.58**	**0.58 J**	**0.50**	**0.50 J**	**0.50 J**	**0.64**
Calcium	mg/kg	-	-	30	210000	**120000**	**150000**	**96000**	**98000**	**64000**	**110000**	**97000**	**94000**
Chromium	mg/kg	43.4	-	30	20	**19**	**8.3**	**16**	**17**	**15**	**14**	**13**	**19**
Cobalt	mg/kg	50	-	30	11	**11**	**4.3**	**7.6**	**7.6**	**7.2**	**5.8**	**5.6**	**7.1**
Copper	mg/kg	31.6	-	30	39	**37[a]**	**14**	**34[a]**	**34[a]**	**31**	**24**	**24**	**30**
Iron	mg/kg	20000	-	30	25000	**24000[a]**	**9300**	**20000**	**21000[a]**	**16000**	**15000**	**14000**	**16000**
Lead	mg/kg	35.8	-	30	140	**37[a]**	**15**	**48[a]**	**48[a]**	**49[a]**	**25**	**25**	**37[a]**
Magnesium	mg/kg	-	-	30	63000	**32000**	**19000**	**22000**	**23000**	**19000**	**17000**	**16000**	**20000**
Manganese	mg/kg	460	-	30	1000	**1000[a]**	**520[a]**	**640[a]**	**660[a]**	**460**	**390**	**380**	**460**
Mercury	mg/kg	0.18 (AL)	0.17 (WB)	22	0.17	**0.10 J**	**0.061 J**	**0.10 J**	**0.11 J**	**0.092 J**	**0.098 J**	**0.10 J**	**0.11 J**
Methyl mercury	µg/kg	0.45	-	16	0.69	0.16 U	0.20 U	0.22 U	0.23 U	**0.46[a]**	**0.69[a]**	**0.64[a]**	**0.51[a]**
Nickel	mg/kg	22.7	-	30	26	**26[a]**	**11**	**20**	**21**	**19**	**17**	**17**	**19**
Potassium	mg/kg	-	-	30	2000	**1900**	**940**	**1500**	**1600**	**1200**	**1400**	**1300**	**1400**
Selenium	mg/kg	0.72	0.8 (WB)	28	1.8	**1.0 J[ab]**	**0.73 J[a]**	**1.1 J[ab]**	**1.1 J[ab]**	**0.71 J**	**1.1 J[ab]**	**1.2 J[ab]**	**1.2 J[ab]**
Silver	mg/kg	1	-	24	0.35	**0.11 J**	0.055 U	**0.10 J**	**0.11 J**	**0.078 J**	**0.13 J**	**0.13 J**	**0.22 J**
Sodium	mg/kg	-	-	30	380	**180 J**	**180 J**	**170 J**	**180 J**	**120 J**	**200 J**	**190 J**	**160 J**
Thallium	mg/kg	-	-	30	0.55	**0.50**	**0.27 J**	**0.34 J**	**0.35 J**	**0.28 J**	**0.32 J**	**0.32 J**	**0.38 J**
Vanadium	mg/kg	-	-	30	29	**26**	**13**	**24**	**25**	**20**	**20**	**19**	**22**
Zinc	mg/kg	121	-	30	390	**130[a]**	**54**	**140[a]**	**150[a]**	**120**	**90**	**87**	**110**

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater ESVs a	Region 4 Freshwater ESVs b	Detects	Max Detect	SD-11	SD-12	SD-13	SD-13	SD-13	SD-14	SD-14	SD-14
Sample ID:						SED-092518-38443-JPF-020	SED-092618-38443-JPF-030	SED-092518-38443-JPF-022	SED-092518-38443-JPF-023	SED-092518-38443-JPF-024	SED-092618-38443-JPF-026	SED-092618-38443-JPF-027	SED-092618-38443-JPF-028
Sample Date:						9/25/2018	9/26/2018	9/25/2018	9/25/2018	9/25/2018	9/26/2018	9/26/2018	9/26/2018
Sample Depth:						0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS Duplicate	0.5-1.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS Duplicate	0.5-1.5 ft BSS
SEM Metals													
Cadmium	umol/g	-	-	30	0.0083	**0.0047**	**0.00094 J**	**0.0045**	**0.0047**	**0.0083**	**0.0021 J**	**0.0019 J**	**0.0033**
Copper	umol/g	-	-	30	0.7	**0.43**	**0.18**	**0.46**	**0.47**	**0.70**	**0.27**	**0.25**	**0.30**
Lead	umol/g	-	-	30	0.47	**0.16**	**0.078**	**0.22**	**0.22**	**0.47**	**0.15**	**0.13**	**0.20**
Nickel	umol/g	-	-	30	0.33	**0.33**	**0.13**	**0.27**	**0.29**	**0.22**	**0.21**	**0.20**	**0.23**
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	30	0.47	**0.067**	**0.024**	**0.050**	**0.052**	**0.34**	**0.024**	**0.025**	**0.029**
Zinc	umol/g	-	-	30	4.2	**1.4**	**0.72**	**1.7**	**1.7**	**2.4**	**1.2**	**1.2**	**1.3**
PCBs													
Aroclor-1242 (PCB-1242)	µg/kg	-	-	11	130	**83 J**	54 U	**88 J**	**130 J**	**71 J**	69 U	67 U	46 U
Aroclor-1254 (PCB-1254)	µg/kg	-	-	4	420	52 U	65 U	74 U	75 U	36 U	84 U	81 U	**78 J**
Pesticides													
alpha-Chlordane	µg/kg	-	-	1	5.5	3.4 U	4.2 U	4.8 U	4.9 U	2.3 U	5.5 U	5.3 U	3.6 U
gamma-Chlordane	µg/kg	-	-	6	12	2.8 U	3.5 U	3.9 U	4.0 U	**2.3 J**	**12 J**	**12 NJ**	3.0 U
General Chemistry													
Cyanide (total)	mg/kg	-	-	6	2.6	0.49 U	0.50 U	0.53 U	0.54 U	0.31 U	0.61 U	**0.77 J**	**0.58 J**
Soot carbon	mg/kg	-	-	30	20000	**20000**	**9500**	**9300**	**15000**	**7700**	**15000**	**14000**	**9200**
Sulfide	umol/g	-	-	30	160	**35**	**46 J**	**52**	**51**	**11**	**77 J**	**72 J**	**69 J**
Total organic carbon (TOC)	mg/kg	-	-	30	56000	**15000**	**25000**	**36000**	**33000**	**16000**	**51000**	**40000**	**35000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
[a],[b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
Originally published November 1995

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-15	SD-16	SD-17	SD-17A	SD-17A	SD-17B	SD-17B	SD-17C
Sample ID:						SED-092618-38443-JPF-029	SED-092618-38443-JPF-025	SED-092118-38443-JPF-009	SED-38443-100319-JPF-001	SED-38443-100319-JPF-002	SED-38443-100319-JPF-003	SED-38443-100319-JPF-004	SED-38443-100419-JPF-005
Sample Date:						9/26/2018	9/26/2018	9/21/2018	10/3/2019	10/3/2019	10/3/2019	10/3/2019	10/4/2019
Sample Depth:						0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.3 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS
												Duplicate	
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**								
Volatile Organic Compounds													
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	7604	-	23	73	**39 J**	**12 J**	6.9 U	-	-	-	-	-
Acetone	µg/kg	65	-	4	210	**150[a]**	26 U	41 U	-	-	-	-	-
Benzene	µg/kg	10	-	3	6.4	3.1 U	0.88 U	1.4 U	-	-	-	-	-
Toluene	µg/kg	10	-	3	5.8	3.4 U	**1.5 J**	**3.6 J**	-	-	-	-	-
trans-1,3-Dichloropropene	µg/kg	-	-	1	4.7	4.5 U	1.3 U	2.0 U	-	-	-	-	-
Semivolatile Organic Compounds													
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	180	-	10	560	160 U	63 U	3300 U	**160 J**	220 U	130 U	120 U	120 U
Carbazole	µg/kg	69	-	13	5400	61 U	24 U	**5400[a]**	**130 J[a]**	**200 J[a]**	**130[a]**	**90 J[a]**	**63 J**
Dibenzofuran	µg/kg	510	-	10	1600	42 U	16 U	**1600 J[a]**	**48 J**	**56 J**	34 U	32 U	30 U
Di-n-butylphthalate (DBP)	µg/kg	11	-	1	2900	71 U	27 U	1400 U	64 U	93 U	57 U	54 U	51 U
LMW-PAHs													
2-Methylnaphthalene	µg/kg	20.2	-	18	260	6.3 U	2.4 U	**260 J[a]**	**36 J[a]**	**37 J[a]**	**11 J**	4.8 U	**11 J**
Acenaphthene	µg/kg	6.7	-	24	2900	9.2 U	3.5 U	**2900[a]**	**57[a]**	**110[a]**	**57[a]**	**54[a]**	**27 J[a]**
Acenaphthylene	µg/kg	5.9	-	14	120	13 U	5.0 U	260 U	**46[a]**	**43 J[a]**	10 U	9.8 U	**16 J[a]**
Anthracene	µg/kg	57	-	38	7800	**17 J**	**11 J**	**7800[a]**	**220[a]**	**350[a]**	**150[a]**	**120[a]**	**97[a]**
Fluorene	µg/kg	77	-	28	3000	**11 J**	**5.1 J**	**3000[a]**	**76**	**100[a]**	**61**	**45**	**36**
Naphthalene	µg/kg	176	-	19	300	7.8 U	3.0 U	**300 J[a]**	**41 J**	**46 J**	**13 J**	5.9 U	**13 J**
Phenanthrene	µg/kg	204	-	41	37000	**79**	**51**	**37000[a]**	**910[a]**	**1400[a]**	**720[a]**	**550[a]**	**390[a]**
Total LMW-PAHs	µg/kg	600	-	41	51260	**107**	**67.1**	**51260[a]**	**1386[a]**	**2086[a]**	**1012[a]**	**769[a]**	**590**
HMW-PAHs													
Benzo(a)anthracene	µg/kg	108	-	41	26000	**110[a]**	**44**	**26000[a]**	**910[a]**	**1400[a]**	**750[a]**	**490[a]**	**290[a]**
Benzo(a)pyrene	µg/kg	150	-	41	22000	**120**	**49**	**22000[a]**	**1000[a]**	**1400[a]**	**710[a]**	**500[a]**	**290[a]**
Benzo(b)fluoranthene	µg/kg	190	-	41	33000	**160**	**67**	**33000[a]**	**1300[a]**	**1800[a]**	**980[a]**	**750[a]**	**400[a]**
Benzo(g,h,i)perylene	µg/kg	170	-	41	11000	**110**	**30**	**11000[a]**	**380[a]**	**780[a]**	**410[a]**	**340[a]**	**190[a]**
Benzo(k)fluoranthene	µg/kg	240	-	41	9300	**87**	**27**	**9300[a]**	**610[a]**	**730[a]**	**280[a]**	**160**	**160**
Chrysene	µg/kg	166	-	41	29000	**140**	**54**	**29000[a]**	**970[a]**	**1700[a]**	**770[a]**	**510[a]**	**310[a]**
Dibenz(a,h)anthracene	µg/kg	33	-	23	3700	22 U	8.6 U	**3700[a]**	**100[a]**	**240[a]**	**150[a]**	**97[a]**	16 U
Fluoranthene	µg/kg	423	-	41	59000	**220**	**100**	**59000[a]**	**1600[a]**	**2900[a]**	**1300[a]**	**980[a]**	**600[a]**
Indeno(1,2,3-cd)pyrene	µg/kg	200	-	40	11000	**88**	**29**	**11000[a]**	**390[a]**	**710[a]**	**370[a]**	**290[a]**	**170**
Pyrene	µg/kg	195	-	41	41000	**200[a]**	**76**	**41000[a]**	**1500[a]**	**2400[a]**	**1200[a]**	**810[a]**	**500[a]**
Total HMW-PAHs	µg/kg	1000	-	41	245000	**1235[a]**	**476**	**245000[a]**	**8760[a]**	**14060[a]**	**6920[a]**	**4927[a]**	**2910[a]**
Total PAHs	µg/kg	1610	-	41	296260	**1342**	**543.1**	**296260[a]**	**10146[a]**	**16146[a]**	**7932[a]**	**5696[a]**	**3500[a]**
Metals													
Aluminum	mg/kg	25000	-	30	12000	**7400**	**1500**	**4500**	-	-	-	-	-
Antimony	mg/kg	2	-	26	0.76	**0.53 J**	**0.12 J**	**0.24 J**	-	-	-	-	-
Arsenic	mg/kg	9.8	-	30	24	**13[a]**	**6.4**	**7.9**	-	-	-	-	-
Barium	mg/kg	20	-	30	290	**140[a]**	**19**	**53[a]**	-	-	-	-	-
Beryllium	mg/kg	-	-	24	0.89	0.21 U	0.15 U	**0.38**	-	-	-	-	-
Cadmium	mg/kg	1	-	30	0.86	**0.34 J**	**0.059 J**	**0.37**	-	-	-	-	-
Calcium	mg/kg	-	-	30	210000	**210000**	**150000**	**84000**	-	-	-	-	-
Chromium	mg/kg	43.4	-	30	20	**12**	**3.7**	**12**	-	-	-	-	-
Cobalt	mg/kg	50	-	30	11	**7.8**	**2.4**	**4.1**	-	-	-	-	-
Copper	mg/kg	31.6	-	30	39	**19**	**2.9**	**19**	-	-	-	-	-
Iron	mg/kg	20000	-	30	25000	**15000**	**5800**	**12000**	-	-	-	-	-
Lead	mg/kg	35.8	-	30	140	**20**	**3.2**	**35**	-	-	-	-	-
Magnesium	mg/kg	-	-	30	63000	**33000**	**63000**	**33000**	-	-	-	-	-
Manganese	mg/kg	460	-	30	1000	**570[a]**	**320**	**320**	-	-	-	-	-
Mercury	mg/kg	0.18 (AL)	0.17 (WB)	22	0.17	**0.070 J**	0.021 U	**0.068 J**	-	-	-	-	-
Methyl mercury	µg/kg	0.45	-	16	0.69	**0.55[a]**	0.087 U	**0.61[a]**	-	-	-	-	-
Nickel	mg/kg	22.7	-	30	26	**16**	**4.1**	**11**	-	-	-	-	-
Potassium	mg/kg	-	-	30	2000	**1500**	**320**	**770**	-	-	-	-	-
Selenium	mg/kg	0.72	0.8 (WB)	28	1.8	**0.82 J[ab]**	0.12 U	**0.28 J**	-	-	-	-	-
Silver	mg/kg	1	-	24	0.35	**0.068 J**	0.022 U	**0.055 J**	-	-	-	-	-
Sodium	mg/kg	-	-	30	380	**240 J**	**170 J**	**140 J**	-	-	-	-	-
Thallium	mg/kg	-	-	30	0.55	**0.32 J**	**0.079 J**	**0.23 J**	-	-	-	-	-
Vanadium	mg/kg	-	-	30	29	**20**	**6.1**	**15**	-	-	-	-	-
Zinc	mg/kg	121	-	30	390	**77**	**13**	**62**	-	-	-	-	-

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Region 4 Freshwater ESVs a	Region 4 Freshwater ESVs b	Detects	Max Detect	SD-15	SD-16	SD-17	SD-17A	SD-17A	SD-17B	SD-17B	SD-17C
Sample Location:						SD-15	SD-16	SD-17	SD-17A	SD-17A	SD-17B	SD-17B	SD-17C
Sample ID:						SED-092618-38443-JPF-029	SED-092618-38443-JPF-025	SED-092118-38443-JPF-009	SED-38443-100319-JPF-001	SED-38443-100319-JPF-002	SED-38443-100319-JPF-003	SED-38443-100319-JPF-004	SED-38443-100419-JPF-005
Sample Date:						9/26/2018	9/26/2018	9/21/2018	10/3/2019	10/3/2019	10/3/2019	10/3/2019	10/4/2019
Sample Depth:						0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.3 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS Duplicate	0-0.5 ft BSS
SEM Metals													
Cadmium	umol/g	-	-	30	0.0083	**0.00095 J**	**0.00018 J**	**0.0029**	-	-	-	-	-
Copper	umol/g	-	-	30	0.7	**0.12**	**0.030**	**0.20**	-	-	-	-	-
Lead	umol/g	-	-	30	0.47	**0.11**	**0.014**	**0.13**	-	-	-	-	-
Nickel	umol/g	-	-	30	0.33	**0.18**	**0.020 J**	**0.090**	-	-	-	-	-
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	30	0.47	**0.015**	**0.12**	**0.34**	-	-	-	-	-
Zinc	umol/g	-	-	30	4.2	**1.0**	**0.14 J**	**0.58**	-	-	-	-	-
PCBs													
Aroclor-1242 (PCB-1242)	µg/kg	-	-	11	130	61 U	23 U	30 U	-	-	-	-	-
Aroclor-1254 (PCB-1254)	µg/kg	-	-	4	420	74 U	28 U	**420**	-	-	-	-	-
Pesticides													
alpha-Chlordane	µg/kg	-	-	1	5.5	4.8 U	1.8 U	48 U	-	-	-	-	-
gamma-Chlordane	µg/kg	-	-	6	12	**4.5 NJ**	1.5 U	40 U	-	-	-	-	-
General Chemistry													
Cyanide (total)	mg/kg	-	-	6	2.6	**2.6**	0.27 U	0.29 U	-	-	-	-	-
Soot carbon	mg/kg	-	-	30	20000	**11000**	**15000**	**18000**	-	-	-	-	-
Sulfide	umol/g	-	-	30	160	**94 J**	**1.7 J**	**2.9 J**	-	-	-	-	-
Total organic carbon (TOC)	mg/kg	-	-	30	56000	**30000**	**1900**	**14000**	-	-	-	-	-

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
[a],[b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
Originally published November 1995

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-17C	SD-17D	SD-17D	SD-17E	SD-18	SD-19	SD-19	SD-20
Sample ID:						SED-38443-100419-JPF-006	SED-38443-100419-JPF-007	SED-38443-100419-JPF-008	SED-38443-100419-JPF-009	SED-092418-38443-JPF-013	SED-092418-38443-JPF-011	SED-092418-38443-JPF-012	SED-092118-38443-JPF-010
Sample Date:						10/4/2019	10/4/2019	10/4/2019	10/4/2019	9/24/2018	9/24/2018	9/24/2018	9/21/2018
Sample Depth:						0.5-0.83 ft BSS	0-0.5 ft BSS	0.5-0.92 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**								
Volatile Organic Compounds													
2-Butanone (Methyl ethyl ketone) (MEK	µg/kg	7604	-	23	73	-	-	-	-	13 U	73 J	16 J	20 J
Acetone	µg/kg	65	-	4	210	-	-	-	-	79 U	210[a]	56 U	70 U
Benzene	µg/kg	10	-	3	6.4	-	-	-	-	2.6 U	3.7 U	1.9 U	6.4 J
Toluene	µg/kg	10	-	3	5.8	-	-	-	-	2.9 U	4.1 U	2.1 U	2.6 U
trans-1,3-Dichloropropene	µg/kg	-	-	1	4.7	-	-	-	-	3.9 U	5.5 U	2.8 U	3.4 U
Semivolatile Organic Compounds													
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	180	-	10	560	210 U	130 U	200 U	350 U	200[a]	160 U	120 J	230[a]
Carbazole	µg/kg	69	-	13	5400	250[a]	240[a]	220[a]	560[a]	55 U	60 U	43 U	43 U
Dibenzofuran	µg/kg	510	-	10	1600	97 J	50 J	95 J	150 J	37 U	41 U	29 U	30 U
Di-n-butylphthalate (DBP)	µg/kg	11	-	1	2900	90 U	57 U	2900[a]	150 U	63 U	70 U	49 U	50 U
LMW-PAHs													
2-Methylnaphthalene	µg/kg	20.2	-	18	260	61[a]	12 J	44 J[a]	34 J[a]	5.6 U	6.2 U	8.8 J	4.5 U
Acenaphthene	µg/kg	6.7	-	24	2900	110[a]	100[a]	75[a]	320[a]	8.2 U	9.1 U	13 J[a]	10 J[a]
Acenaphthylene	µg/kg	5.9	-	14	120	42 J[a]	10 U	62[a]	27 U	12 U	13 U	11 J[a]	9.2 U
Anthracene	µg/kg	57	-	38	7800	370[a]	280[a]	370[a]	770[a]	21 J	7.6 U	26 J	20 J
Fluorene	µg/kg	77	-	28	3000	160[a]	110[a]	130[a]	310[a]	10 J	8.7 U	16 J	9.6 J
Naphthalene	µg/kg	176	-	19	300	62	17 J	47 J	39 J	6.9 U	7.6 U	5.4 U	5.5 U
Phenanthrene	µg/kg	204	-	41	37000	1600[a]	1400[a]	1700[a]	3800 J[a]	120	43 J	150	110
Total LMW-PAHs	µg/kg	600	-	41	51260	2405[a]	1919[a]	2428[a]	5273[a]	151	43	224.8	149.6
HMW-PAHs													
Benzo(a)anthracene	µg/kg	108	-	41	26000	1400[a]	1200[a]	1200[a]	3200 J[a]	120[a]	57	120[a]	130[a]
Benzo(a)pyrene	µg/kg	150	-	41	22000	1400[a]	1200[a]	1400[a]	2800 J[a]	130	61	130	150
Benzo(b)fluoranthene	µg/kg	190	-	41	33000	1700[a]	1600[a]	2000[a]	3200 J[a]	200[a]	86	200[a]	210[a]
Benzo(g,h,i)perylene	µg/kg	170	-	41	11000	690[a]	790[a]	510[a]	1600[a]	100	50	99	88
Benzo(k)fluoranthene	µg/kg	240	-	41	9300	790[a]	730[a]	810[a]	1500[a]	70	40 J	70	74
Chrysene	µg/kg	166	-	41	29000	1300[a]	1200[a]	1200[a]	3000 J[a]	150	62	150	170[a]
Dibenz(a,h)anthracene	µg/kg	33	-	23	3700	240[a]	230[a]	160[a]	510[a]	20 U	22 U	26 J	23 J
Fluoranthene	µg/kg	423	-	41	59000	2500[a]	2500[a]	2200[a]	5800[a]	270	110	270	290
Indeno(1,2,3-cd)pyrene	µg/kg	200	-	40	11000	630[a]	720[a]	530[a]	1400[a]	86	46 J	87	83
Pyrene	µg/kg	195	-	41	41000	2000[a]	2000[a]	1800[a]	5300[a]	230[a]	100	240[a]	240[a]
Total HMW-PAHs	µg/kg	1000	-	41	245000	12650[a]	12170[a]	11810[a]	28310[a]	1356[a]	612	1392[a]	1458[a]
Total PAHs	µg/kg	1610	-	41	296260	15055[a]	14089[a]	14238[a]	33583[a]	1507	655	1616.8[a]	1607.6
Metals													
Aluminum	mg/kg	25000	-	30	12000	-	-	-	-	7400	10000	9900	12000
Antimony	mg/kg	2	-	26	0.76	-	-	-	-	0.43 J	0.44 J	0.45 J	0.37 J
Arsenic	mg/kg	9.8	-	30	24	-	-	-	-	9.2	15[a]	14[a]	10[a]
Barium	mg/kg	20	-	30	290	-	-	-	-	170[a]	200[a]	160[a]	140[a]
Beryllium	mg/kg	-	-	24	0.89	-	-	-	-	0.44 J	0.60	0.63	0.62
Cadmium	mg/kg	1	-	30	0.86	-	-	-	-	0.41 J	0.45 J	0.51	0.26 J
Calcium	mg/kg	-	-	30	210000	-	-	-	-	140000	110000	100000	49000
Chromium	mg/kg	43.4	-	30	20	-	-	-	-	15	16	19	16
Cobalt	mg/kg	50	-	30	11	-	-	-	-	6.0	7.6	8.6	6.6
Copper	mg/kg	31.6	-	30	39	-	-	-	-	24	27	32[a]	18
Iron	mg/kg	20000	-	30	25000	-	-	-	-	14000	20000	19000	18000
Lead	mg/kg	35.8	-	30	140	-	-	-	-	26	27	37[a]	17
Magnesium	mg/kg	-	-	30	63000	-	-	-	-	26000	21000	20000	14000
Manganese	mg/kg	460	-	30	1000	-	-	-	-	420	550[a]	540[a]	340
Mercury	mg/kg	0.18 (AL)	0.17 (WB)	22	0.17	-	-	-	-	0.046 U	0.062 J	0.10 J	0.049 J
Methyl mercury	µg/kg	0.45	-	16	0.69	-	-	-	-	0.20 U	0.23 U	0.26	0.48[a]
Nickel	mg/kg	22.7	-	30	26	-	-	-	-	17	20	21	18
Potassium	mg/kg	-	-	30	2000	-	-	-	-	1300	1800	1600	1700
Selenium	mg/kg	0.72	0.8 (WB)	28	1.8	-	-	-	-	0.97 J[ab]	1.1 J[ab]	1.1 J[ab]	0.62 J
Silver	mg/kg	1	-	24	0.35	-	-	-	-	0.13 J	0.084 J	0.099 J	0.061 J
Sodium	mg/kg	-	-	30	380	-	-	-	-	190 J	180 J	160 J	140 J
Thallium	mg/kg	-	-	30	0.55	-	-	-	-	0.28 J	0.39 J	0.39	0.26 J
Vanadium	mg/kg	-	-	30	29	-	-	-	-	20	25	24	27
Zinc	mg/kg	121	-	30	390	-	-	-	-	84	100	120	69

Table 3.3b

Summary of Analytical Results
Sediment Samples - Detected Parameters and ESVs
South Dayton Dump and Landfill Site
Moraine, Ohio

Sample Location:						SD-17C	SD-17D	SD-17D	SD-17E	SD-18	SD-19	SD-19	SD-20
Sample ID:						SED-38443-100419-JPF-006	SED-38443-100419-JPF-007	SED-38443-100419-JPF-008	SED-38443-100419-JPF-009	SED-092418-38443-JPF-013	SED-092418-38443-JPF-011	SED-092418-38443-JPF-012	SED-092118-38443-JPF-010
Sample Date:						10/4/2019	10/4/2019	10/4/2019	10/4/2019	9/24/2018	9/24/2018	9/24/2018	9/21/2018
Sample Depth:						0.5-0.83 ft BSS	0-0.5 ft BSS	0.5-0.92 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0-0.5 ft BSS	0.5-1.5 ft BSS	0-0.5 ft BSS
Parameters	**Units**	**Region 4 Freshwater ESVs a**	**Region 4 Freshwater ESVs b**	**Detects**	**Max Detect**								
SEM Metals													
Cadmium	umol/g	-	-	30	0.0083	-	-	-	-	**0.0014**	**0.0038 J**	**0.0046**	**0.0020 J**
Copper	umol/g	-	-	30	0.7	-	-	-	-	**0.14**	**0.33**	**0.37**	**0.10**
Lead	umol/g	-	-	30	0.47	-	-	-	-	**0.048**	**0.14**	**0.21**	**0.079**
Nickel	umol/g	-	-	30	0.33	-	-	-	-	**0.096**	**0.28**	**0.27**	**0.17**
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS	none	-	-	30	0.47	-	-	-	-	**0.058**	**0.033**	**0.054**	**0.082**
Zinc	umol/g	-	-	30	4.2	-	-	-	-	**0.39**	**1.2**	**1.3**	**0.48**
PCBs													
Aroclor-1242 (PCB-1242)	µg/kg	-	-	11	130	-	-	-	-	**55 J**	**60 J**	**77 J**	43 U
Aroclor-1254 (PCB-1254)	µg/kg	-	-	4	420	-	-	-	-	67 U	73 U	51 U	52 U
Pesticides													
alpha-Chlordane	µg/kg	-	-	1	5.5	-	-	-	-	4.4 U	4.7 U	3.3 U	17 U
gamma-Chlordane	µg/kg	-	-	6	12	-	-	-	-	3.6 U	3.9 U	2.7 U	14 U
General Chemistry													
Cyanide (total)	mg/kg	-	-	6	2.6	-	-	-	-	0.55 U	**0.70 J**	0.41 U	0.39 U
Soot carbon	mg/kg	-	-	30	20000	-	-	-	-	**7400**	**8100**	**4100**	**9500**
Sulfide	umol/g	-	-	30	160	-	-	-	-	**12 J**	**58**	**40**	**10 J**
Total organic carbon (TOC)	mg/kg	-	-	30	56000	-	-	-	-	**31000**	**28000**	**21000**	**24000**

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
AL - Aquatic life.
WB - Wildlife based.
[a],[b] - United States Environmental Protection Agency Region 4 Ecological Risk Assessment Supplemental Guidance Report, Updated March 2018.
Originally published November 1995

Table 4.1a

Summary of Surface Water Sample Results - September 2018
Detected Parameters and Calculated RSLs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Calculated RSL for recreational user based on CR=1E-06 and HI=0.1	Detects	Max Detect
Volatile Organic Compounds				
1,2,4-Trichlorobenzene	µg/L	6.7	1	0.41
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	22700	1	2.9
2-Hexanone	µg/L	160	1	1.1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	630	1	0.88
Acetone	µg/L	35100	4	36
Benzene	µg/L	19	1	0.21
cis-1,2-Dichloroethene	µg/L	45.1	2	0.22
Ethylbenzene	µg/L	36.1	4	0.34
m&p-Xylenes	µg/L	1690	17	1.2
o-Xylene	µg/L	1850	12	0.56
Toluene	µg/L	1030	17	3.6
Trichloroethene	µg/L	10.3	4	0.29
Xylenes (total)	µg/L	1770	17	1.8
Semivolatile Organic Compounds				
2-Methylnaphthalene	µg/L	18	2	0.14
Butyl benzylphthalate (BBP)	µg/L	90.2	1	7.9
Naphthalene	µg/L	171	3	0.17
Metals				
Aluminum	µg/L	38300	4	110
Arsenic	µg/L	1.82	17	**14**
Arsenic (dissolved)	µg/L	1.82	17	**12**
Barium	µg/L	4590	17	250
Barium (dissolved)	µg/L	4590	17	200
Beryllium	µg/L	9.41	4	0.67
Beryllium (dissolved)	µg/L	9.41	3	0.88
Calcium	µg/L	--	17	80000
Calcium (dissolved)	µg/L	--	17	71000
Cobalt	µg/L	11.9	2	0.64
Cobalt (dissolved)	µg/L	11.9	2	0.43
Iron	µg/L	26800	9	7400
Iron (dissolved)	µg/L	26800	3	6300
Magnesium	µg/L	--	17	32000
Magnesium (dissolved)	µg/L	--	17	29000
Manganese	µg/L	416	17	**2000**
Manganese (dissolved)	µg/L	416	2	**1600**
Mercury (Low Level)	ng/L	--	2	2.6
Potassium	µg/L	--	17	6500
Potassium (dissolved)	µg/L	--	17	6200
Sodium	µg/L	--	17	27000
Sodium (dissolved)	µg/L	--	17	25000
Vanadium	µg/L	66.9	2	1.4
Vanadium (dissolved)	µg/L	66.9	1	1.1
PCBs				
Aroclor-1254 (PCB-1254)	µg/L	0.807	1	0.074
General Chemistry				
Chloride	mg/L	--	17	36
Fluoride	mg/L	1.53	17	0.19
Hardness	mg/L	--	17	330
Hardness, carbonate	mg/L	--	17	200
Hardness, magnesium	mg/L	--	17	130
Nitrate (as N)	µg/L	61300	8	410
Sulfate	mg/L	--	17	25
Total dissolved solids (TDS)	mg/L	--	17	390

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Regional Screening Level (RSL) Calculator (TR = 1E-06, HI = 0.1) , Recreator Surface Water, accessed on February 3, 2020

Table 4.1b

Summary of Surface Water Sample Results - October 2019
Detected Parameters and Calculated RSLs
South Dayton Dump And Landfill Site
Moraine, Ohio

Parameters	Units	Calculated RSL for recreational user based on CR=1E-06 and HI=0.1	Detects	Max Detect
Volatile Organic Compounds				
cis-1,2-Dichloroethene	µg/L	45.1	1	0.23
Toluene	µg/L	1030	2	1.4
Trichloroethene	µg/L	10.3	2	0.35
Semivolatile Organic Compounds				
2-Methylnaphthalene	µg/L	18	2	0.15
Naphthalene	µg/L	171	7	1.1
Phenol	µg/L	9230	1	0.32
Metals				
Aluminum	µg/L	38300	2	49
Antimony	µg/L	11.9	3	0.82
Antimony (dissolved)	µg/L	11.9	3	0.92
Arsenic	µg/L	1.82	19	**5.8**
Arsenic (dissolved)	µg/L	1.82	19	**4.8**
Barium	µg/L	4590	19	230
Barium (dissolved)	µg/L	4590	19	230
Beryllium	µg/L	9.41	1	0.57
Beryllium (dissolved)	µg/L	9.41	1	0.78
Calcium	µg/L	--	19	76000
Calcium (dissolved)	µg/L	--	19	77000
Chromium (dissolved)	µg/L	--	2	6.4
Cobalt	µg/L	11.9	1	0.67
Cobalt (dissolved)	µg/L	11.9	1	0.42
Iron	µg/L	26800	6	3400
Iron (dissolved)	µg/L	26800	2	3400
Magnesium	µg/L	--	19	31000
Magnesium (dissolved)	µg/L	--	19	31000
Manganese	µg/L	416	19	**3000**
Manganese (dissolved)	µg/L	416	7	**2800**
Mercury (Low Level)	ng/L	--	2	1.8
Nickel	µg/L	638	1	1.6
Nickel (dissolved)	µg/L	638	1	4
Potassium	µg/L	--	19	6100
Potassium (dissolved)	µg/L	--	19	6000
Selenium	µg/L	192	1	1
Selenium (dissolved)	µg/L	192	2	1.1
Sodium	µg/L	--	19	24000
Sodium (dissolved)	µg/L	--	19	24000
Thallium	µg/L	0.383	2	**0.55**
Thallium (dissolved)	µg/L	0.383	1	**0.73**
Vanadium	µg/L	66.9	1	0.89
Zinc (dissolved)	µg/L	11700	2	89
General Chemistry				
Chloride	mg/L	--	19	34
Fluoride	mg/L	1.53	19	0.18
Hardness	mg/L	--	19	320
Hardness, carbonate	mg/L	--	19	190
Hardness, magnesium	mg/L	--	19	130
Sulfate	mg/L	--	19	20
Sulfide	mg/L	--	6	1.6
Total dissolved solids (TDS)	mg/L	--	19	390

Notes:

J - Estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
ft BWS - Feet below water surface

Criteria Notes:
Regional Screening Level (RSL) Calculator (TR = 1E-06, HI = 0.1) , Recreator Surface Water, accessed on February 3, 2020

Table 4.2

Summary of Sediment Sample Results
Detected Parameters and Calculated RSLs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Calculated RSL for recreational user based on CR=1E-06 and HI=0.1	Detects	Max Detect
Volatile Organic Compounds				
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	28300000	23	73
Acetone	µg/kg	42500000	4	210
Benzene	µg/kg	76300	3	6.4
Toluene	µg/kg	3780000	3	5.8
trans-1,3-Dichloropropene	µg/kg	42000	1	4.7
Semivolatile Organic Compounds				
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	234000	10	560
Carbazole	µg/kg	-	13	5400
Dibenzofuran	µg/kg	44100	10	1600
Di-n-butylphthalate (DBP)	µg/kg	3810000	1	2900
LMW-PAHs				
2-Methylnaphthalene	µg/kg	144000	18	260
Acenaphthene	µg/kg	2160000	24	2900
Acenaphthylene	µg/kg	-	14	120
Anthracene	µg/kg	10800000	38	7800
Fluorene	µg/kg	1440000	28	3000
Naphthalene	µg/kg	721000	19	300
Phenanthrene	µg/kg	-	41	37000
HMW-PAHs				
Benzo(a)anthracene	µg/kg	6930	41	**26000**
Benzo(a)pyrene	µg/kg	693	41	**22000**
Benzo(b)fluoranthene	µg/kg	6930	41	**33000**
Benzo(g,h,i)perylene	µg/kg	-	41	11000
Benzo(k)fluoranthene	µg/kg	69300	41	9300
Chrysene	µg/kg	693000	41	29000
Dibenz(a,h)anthracene	µg/kg	693	23	**3700**
Fluoranthene	µg/kg	1440000	41	59000
Indeno(1,2,3-cd)pyrene	µg/kg	6930	40	**11000**
Pyrene	µg/kg	1080000	41	41000
Metals				
Aluminum	mg/kg	47200	30	12000
Antimony	mg/kg	18.9	26	0.76
Arsenic	mg/kg	4.09	30	**24**
Barium	mg/kg	9440	30	290
Beryllium	mg/kg	94.4	24	0.89
Cadmium	mg/kg	43.1	30	0.86
Calcium	mg/kg	-	30	210000
Chromium	mg/kg	-	30	20
Cobalt	mg/kg	14.2	30	11
Copper	mg/kg	1890	30	39
Iron	mg/kg	33000	30	25000
Lead	mg/kg	-	30	140
Magnesium	mg/kg	-	30	63000
Manganese	mg/kg	1130	30	1000
Mercury	mg/kg	-	22	0.17
Methyl mercury	µg/kg	4720	16	0.69
Nickel	mg/kg	944	30	26
Potassium	mg/kg	-	30	2000
Selenium	mg/kg	236	28	1.8
Silver	mg/kg	236	24	0.35
Sodium	mg/kg	-	30	380
Thallium	mg/kg	0.472	30	**0.55**
Vanadium	mg/kg	238	30	29
Zinc	mg/kg	14200	30	390

Table 4.2

Summary of Sediment Sample Results
Detected Parameters and Calculated RSLs
South Dayton Dump and Landfill Site
Moraine, Ohio

Parameters	Units	Calculated RSL for recreational user based on CR=1E-06 and HI=0.1	Detects	Max Detect
PCBs				
Aroclor-1242 (PCB-1242)	µg/kg	1500	11	130
Aroclor-1254 (PCB-1254)	µg/kg	709	4	420
Pesticides				
alpha-Chlordane	µg/kg	-	1	5.5
gamma-Chlordane	µg/kg	-	6	12
General Chemistry				
Cyanide (total)	mg/kg	28.3	6	2.6
Soot carbon	mg/kg	-	30	20000
Sulfide	umol/g	-	30	160
Total organic carbon (TOC)	mg/kg	-	30	56000

Notes:

J - Estimated concentration.
NJ - Tentatively identified compound, estimated concentration.
R - Rejected.
U - Not detected at the associated reporting limit.
UJ - Not detected; associated reporting limit is estimated.
- - Not applicable.

Criteria Notes:
Regional Screening Level (RSL) Calculator (TR = 1E-06, HI = 0.1) , Recreator Sediment, accessed on January 21, 2020

Appendices

Appendix A
Hydrographic Survey Report
Dated June 11, 2018

June 11, 2018 Reference No. 038443

Ms. Leslie Patterson
Remedial Project Manager
United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Mail Code SR-6J
Chicago, Illinois
60604

Ms. Tamara McPeek
Environmental Response and Revitalization
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio
45402

Dear Ms. Patterson and Ms. McPeek:

Re: Quarry Pond Investigation – Hydrographic Survey
South Dayton Dump and Landfill Site, Moraine, Ohio (Site)

This letter provides the results of the Quarry Pond hydrographic survey conducted at the South Dayton Dump and Landfill Site (Site) in March 2018. GHD has prepared this letter on behalf of the Respondents to the Administrative Settlement Agreement and Order on Consent (ASAOC) for Remedial Investigation/Feasibility Study (RI/FS) of the Site, Docket No. V-W-16-C-011 (Respondents).

The Quarry Pond investigation comprises characterization of surface water and sediment quality, and determining whether the "foreign objects" in the Quarry Pond may be sources of contamination, as described in the Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2 (RI/FS Work Plan). The presence of "foreign objects" was assessed by conducting the hydrographic survey as discussed below. Characterization of surface water and sediment quality will be completed in September.

The hydrographic survey was conducted by J.F. Brennan Co., Inc. (Brennan) and included use of a multi-beam echo sounder (MBES) and side-scan sonar (SSS) as described in the report included in Attachment 1. The MBES and SSS data were used to produce a bathymetry map and images of notable features indicated by the survey data. The maps and images are included as Attachment 1, Appendix A and Appendix B, respectively. The data provided by Brennan were further processed by GHD to produce a two dimensional interactive map with images of notable features (Attachment 2). The interactive map can be used to select or deselect object types from the legend on the lower left side of the figure, and to view images by clicking on an individual object within the map area.

The results of the hydrographic survey are summarized by the following:

- The elevation of the base of the Quarry Pond ranges from approximately 669 feet at the deepest point to approximately 713 feet at the shoreline.
- The Quarry Pond has steep banks with the deepest depths in the western section, and the shallowest depths to the south/ southwest and northeast of the island.
- Scattered debris, both manmade and natural was located throughout the Quarry Pond.
- The objects identified by Brennan, based on the hydrographic survey, are classified as: suspected vehicle/ vessel; potential boulder; potential drum; potential log; potential logs and/or boulders; potential manmade debris; potential tire; potential vertical manmade structure; and suspected debris/ rubble field.

The hydrographic survey information was reviewed by GHD with respect to the proposed surface water and sediment sampling locations shown on Figure 5.3 of the RI/FS Work Plan. This resulted in adjustments to the proposed sediment sampling locations, in the following areas: vicinity of objects 5, 6 and 17; near the "Potential Drum"; vicinity of objects 59, 60 and 61; and near the "Suspected Vehicle". Additional adjustments were made to reflect to bathymetry data, to provide representation of the various depth conditions. The map included in Attachment 2 includes proposed sample locations with above-noted adjustments. To view the proposed sample locations it is necessary to select the symbol within the legend on the lower left side of the figure.

It is anticipated that the Quarry Pond surface water and sediment sampling will be conducted in September 2018. The need for potential further action will be evaluated after the results of the surface water and sediment samples are available.

Should you have any questions on the above, please do not hesitate to contact us.

Sincerely,

GHD

Julian Hayward

JH/cb/3

Encl.

cc: (all by pdf) Ken Brown, ITW
Bryan Heath, NCR
Wendell Barner, Barner Consulting
Jim Campbell, EMI
Brett Fishwild, Jacobs
Valerie Chan, GHD

Attachment 1
Quarry Pond Hydrographic Survey Report
(Appendices provided separately due to file size)

J.F. BRENNAN CO., INC.

820 BAINBRIDGE · BOX 2557 · LA CROSSE, WI 54602-2557 PHONE: 608 / 784-7173 FAX: 608 / 785-2090

This report outlines the Approach, Methods and Results for the hydrographic surveys performed by J.F. Brennan Co., Inc. to map the bathymetry and underwater features within the Quarry Pond located at Moraine, Ohio.

Approach

The purpose of this work was to locate areas of manmade and natural features and create a bathymetric surface within the bounds of the Quarry Pond.

On March 6th, 2018 J.F. Brennan Co., Inc. dispatched a hydrographic survey crew to the Quarry Pond, located in the town of Moraine, Ohio. A pre-survey meeting was held with Mr. Jason Close (GHD), Mr. Ryan Sands (JFB) and Mr. Taylor Blumenstein (JFB) to discuss the scope of the hydrographic survey to be performed as well as analyze safety risks and hazards that may be present while performing work.

1. Perform a hydrographic survey using a multi-beam echosounder (MBES) to locate prominent features and obstructions located in the pond. Perform additional hydrographic data collection using side-scan sonar (SSS) to add detail to the MBES data collected.
2. Process MBES and SSS data to create bathymetric map data and further identify notable features and their locations.

The work was to be completed and data produced relative to the following horizontal and vertical survey datum:

Horizontal Datum: U.S. State Plane NAD83

Zone: OH-3402, Ohio South

Units: U.S. Survey Feet

Vertical Datum: North American Vertical Datum 1988

Units: U.S. Survey Feet

Geoid: g2012a-CONUS

Methods

Quality Control

The following quality control measures were utilizes to ensure proper data collection.

- GPS system –Check against NGS site control monument using the Ohio DOT's VRS network

- MBES – Patch test, GAMs Calibration, water column sound velocity measurements
- IMU system – Patch test

Geodetic Control

Horizontal control and vertical control, was located by Mr. Sands and Mr. Blumenstein. The value of this control was obtained from the standard NGS control datasheet
Prior to bathymetric data collection a connection to Ohio DOT's VRS Network was established and a check-in shot was performed at the vertical and horizontal NGS control monument listed below:

PID: JZ0006
Name: E140
Northing: 645510.603'
Easting: 1484932.205'
NAVD88 Elevation: 748.284'

A check on the established point using the VRS network showed differences of less than 0.08' both vertically and horizontally.

Positioning and Depth Measurement

RTK GPS was used as the method for horizontal and vertical positioning during the survey. Acoustic depth measurements were collected utilizing a multi-beam echo sounder in combination with an inertial navigation system for motion corrections.

Equipment and Software Utilized

J.F. Brennan 7751 Survey Launch

R2Sonic 2020, multi-beam echosounder operating at 400 kHz.

Applanix Pos MV 320, full-range of motion corrections for heave, pitch, roll, yaw, position and heading

AML MicroX, sound-speed profiler

Castaway CTD, sound-speed profiler

Edgetech 4125 SideScan Sonar

Trimble R8 GNSS, global positioning system

Ohio DOT VRS RTK Network, GNSS corrections

Hypack 2017, hydrographic data collection software

Hydrographic Survey Summary

Starting on March 6th the survey vessel was trailered to and launched at the pond, where it would remain until the survey was concluded on March 8th. Due to high water conditions at the time, the

vessel was first launched and mobilized thereafter with GPS and acoustic sounding equipment. Upon completion of mobilization, configuration and quality control checks were completed. Data collection with the MBES system at 0 degree and 45 degree tilts were completed on March 7th, while SSS collection was conducted on the morning of March 8th. All hydrographic data collection concluded on the afternoon of March 8.

MBES bathymetry and SideScan imagery was collected with approx. 100% overlap in areas where water depth and safe navigation allowed. Water conditions in the beginning stages of the survey were approximately 2-3 feet higher than typical water levels in the quarry pond; throughout the course of the survey observed water level dropped from the initial water surface elevation at 713.8'. Quarry Pond elevations surveyed at the time ranged from approximately 669' at its deepest to 713' at shoreline. The quarry pond was characterized by steep banks with heavily wooded vegetation on the shoreline, the deepest depths occurring in western section, and the shallowest occurring to the south/southwest and northeast of the island. Scattered debris, both manmade and natural, was located throughout the entire quarry pond. This data represents an area with continually changing conditions and is only representative of the conditions at the time of the data collection.

Hydrographic Data Reduction and Edit Summary

The hydrographic data was edited and reduced to the datum listed above (see *Approach*) using both Hypack software version 2017 (MBES) and Sonarwiz software version 6.0 (SSS).

MBES:

Raw point data was brought into the Hypack 2017 Hysweep editor where different files and values were applied to the raw soundings. A sound velocity file was applied to correct for sound refraction throughout the water column, and a patch test was performed and appropriate values applied to correct for pitch, roll, and yaw. Corrected multi-beam point data was then exported to XYZ files. These files include an XYZ dataset comprised of ALL corrected multi-beam soundings and a one-foot-by-one-foot gridded XYZ dataset of corrected soundings. This process involves creating a one-foot-by-one-foot grid of the entire survey surface and selecting one sounding per cell based on an average value for that cell. TIN, (triangulated irregular network) and matrix surfaces were created with Hypack software from the final sorted XYZ data set and used for charting, contouring and for use in Fledermaus and Iview4D.

SSS:

Raw data collecting using the side-scan sonar was brought into the SonarWiz software, where bottom tracking was applied and gains were adjusted to provide sharper imagery. Once imagery was processed, a mosaic was stitched together and a feature report complied. The feature report is comprised of notable features found within the side scan data and may not include all features located within the quarry pond. Images within the feature report may contain more features than those listed.

Results

Results of the hydrographic surveys are best represented in the Bathymetric chart package and SideScan features report (See *Appendix A, B*)

Deliverables

- 180306 GHD Quarry Pond MBES Bathymetry Chart Package- Printable PDF map depicting the survey results in color-shaded relief, colored shaded relief with 2' contours and aerial background, and color shaded relief with features.
- iView4D.exe - Software installation (iView4D) file for program to view .scene files (see below)
- 180306 GHD_3Dcontours_2ft_25weight_8hgt_Labeled.dxf- Labeled 2ft 3D Contours created from 1ft x 1ft gridded MBES data in AutoCAD format
- GHD Quarry Pond Side Scan Features Report.pdf- Report of notable features located during the SSS portion of the hydrographic surveys in PDF format. Includes state plane coordinates and brief descriptions
- 180308 GHD SSS Contact Features.csv- An Excel CSV provided Easting and Northing Coordinates of contact features located using SSS
- 180306 GHD Ohio Quarry Pond.scene- Surface model overlaid with Side Scan Sonar (SSS) for viewing in iView4D
- 180308_GHD_SSS_UGC.tif- Tiff image of SSS survey
- GHD_1x1res_45_220.tif- color shaded relief Tiff image of MBES survey surface, created from 1x1 gridded MBES data.
- 180306 GHD_QuarryPond_MBES_1x1_MED.xyz- 1x1 gridded multi-beam (MBES) bathymetric data in Easting, Northing, Elevation format collected from March 6-8th, 2018 in the GHD Quarry Pond
- 180306 GHD_QuarryPond_MBES_AllPoints.xyz- un-gridded multi-beam (MBES) bathymetric data in Easting, Northing, Elevation format collected from March 6-8th, 2018 in the GHD Quarry Pond

Table of Contents

Appendix A

Charts

1. Color-shaded Bathymetric Surface with Contours (with basemap)
2. Color-shaded Bathymetric Surface with Contours (without basemap)
3. Color-shaded Bathymetric Surface with features

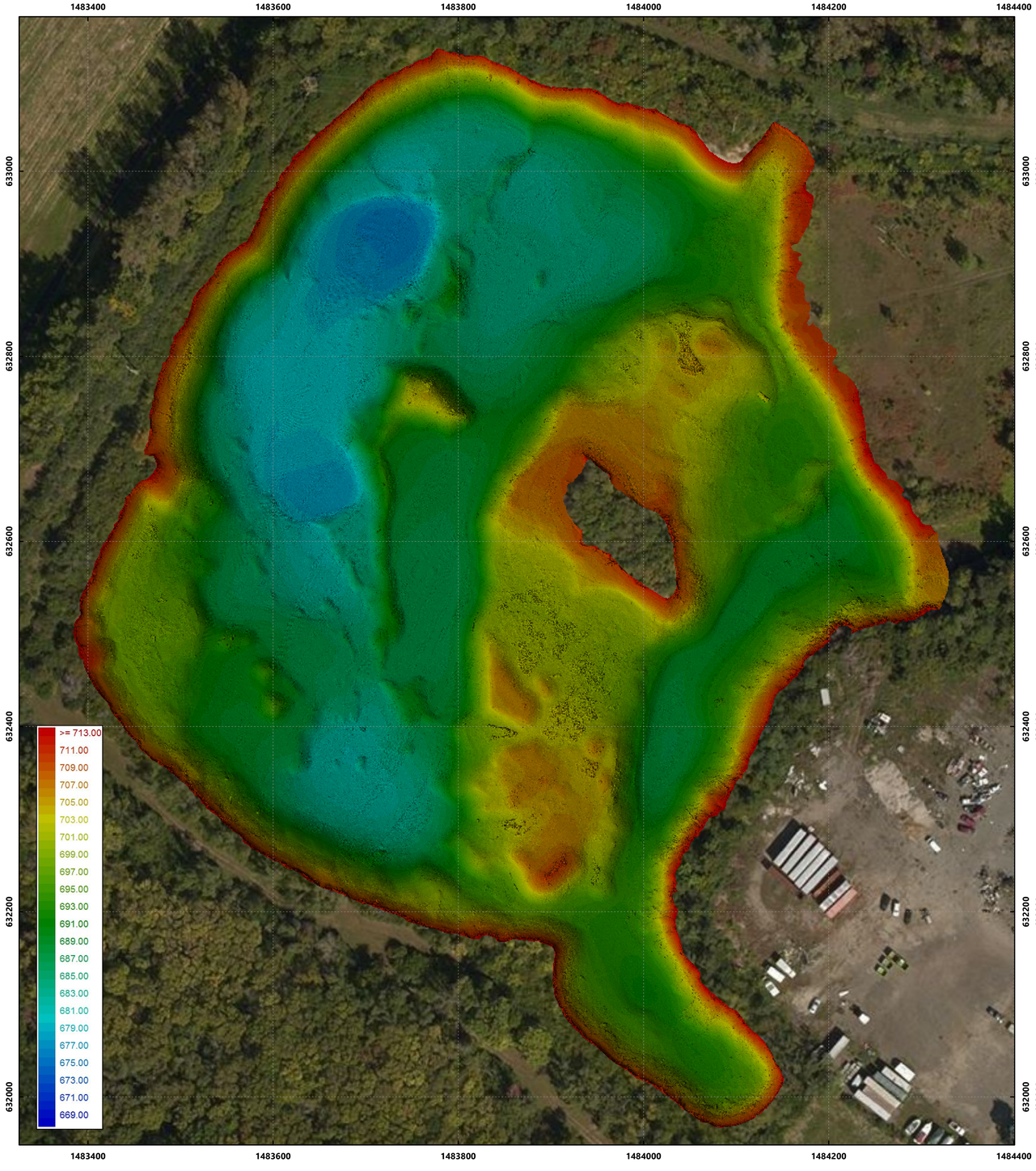
Appendix B

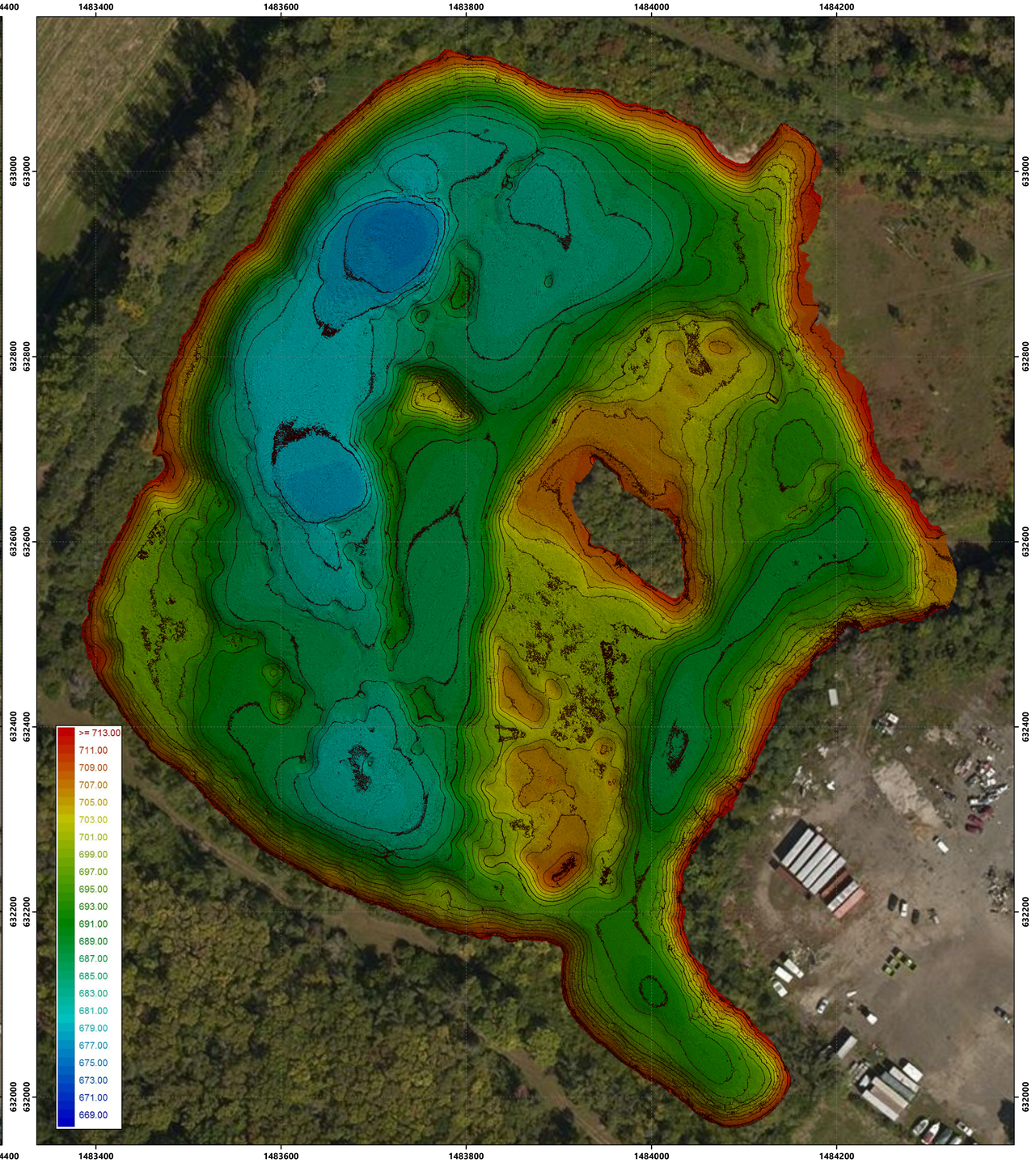
Side Scan Sonar Feature Report

Attachment 2
Quarry Pond Features and Proposed Sampling Locations
(See separate file)

Appendix B
Quarry Pond Maps

Appendix B.1
MBES Survey Maps by Brennan





180306 GHD QUARRY POND
MULTI-BEAM BATHYMETRIC SURVEY

Horizontal Datum: State Plane NAD83 - Ohio South

Horizontal Units: U.S. Survey Feet

Vertical Datum: NAVD88

Vertical Units: U.S. Survey Feet

Date of Survey: March 6th-8th, 2018
Location of Survey: Moraine, Ohio

Survey Crew: T. Blumenstein, R. Sands

N
W E
S

J.F. Brennan Co., INC. Contact Information

818 Bainbridge St.
La Crosse, WI 54603

(608)-784-7173

0 62.5 125 250 375 500 625 750 875 1,000 1,125 1,250 1,375 1,500 Feet

1 inch = 63 feet

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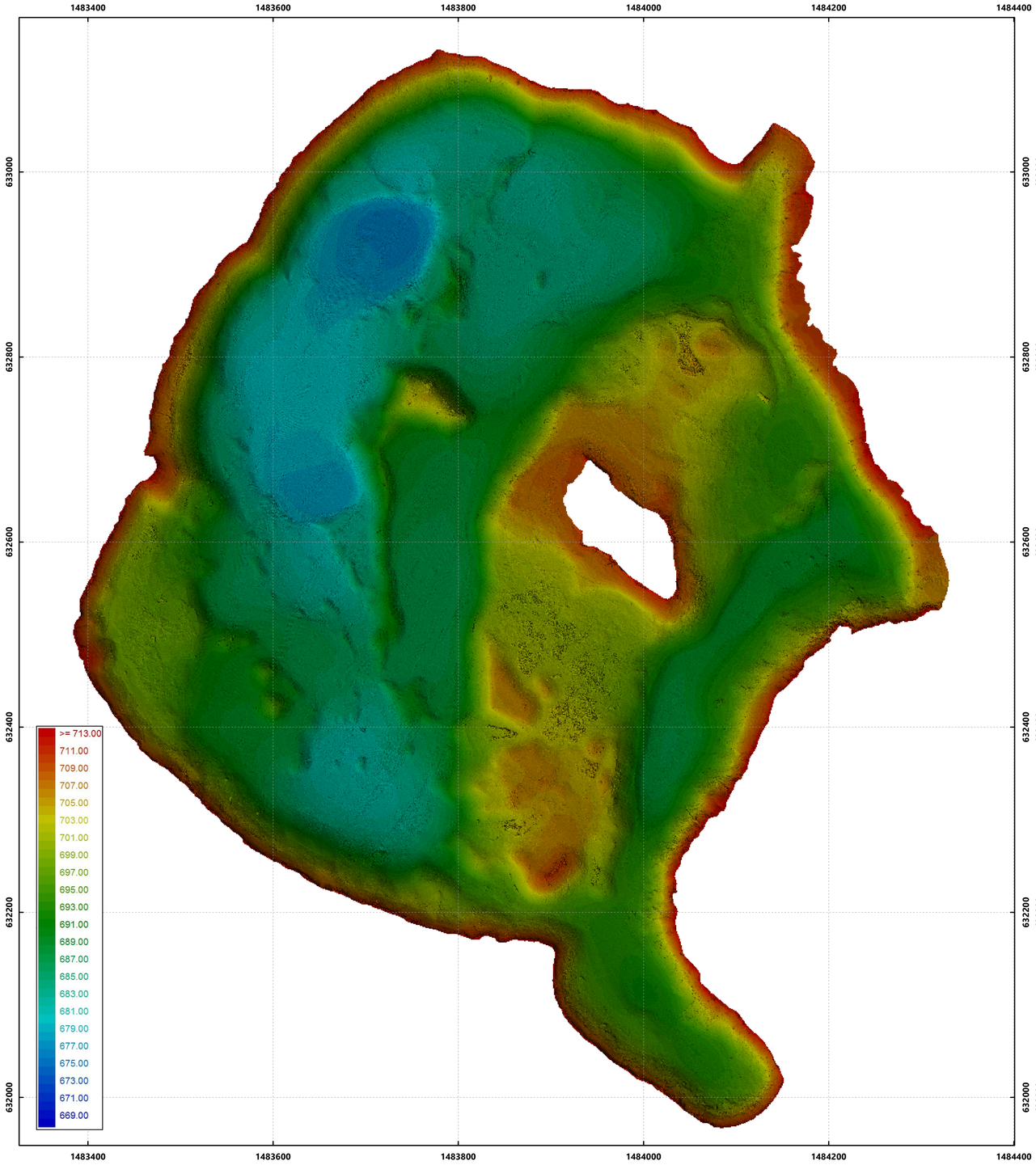

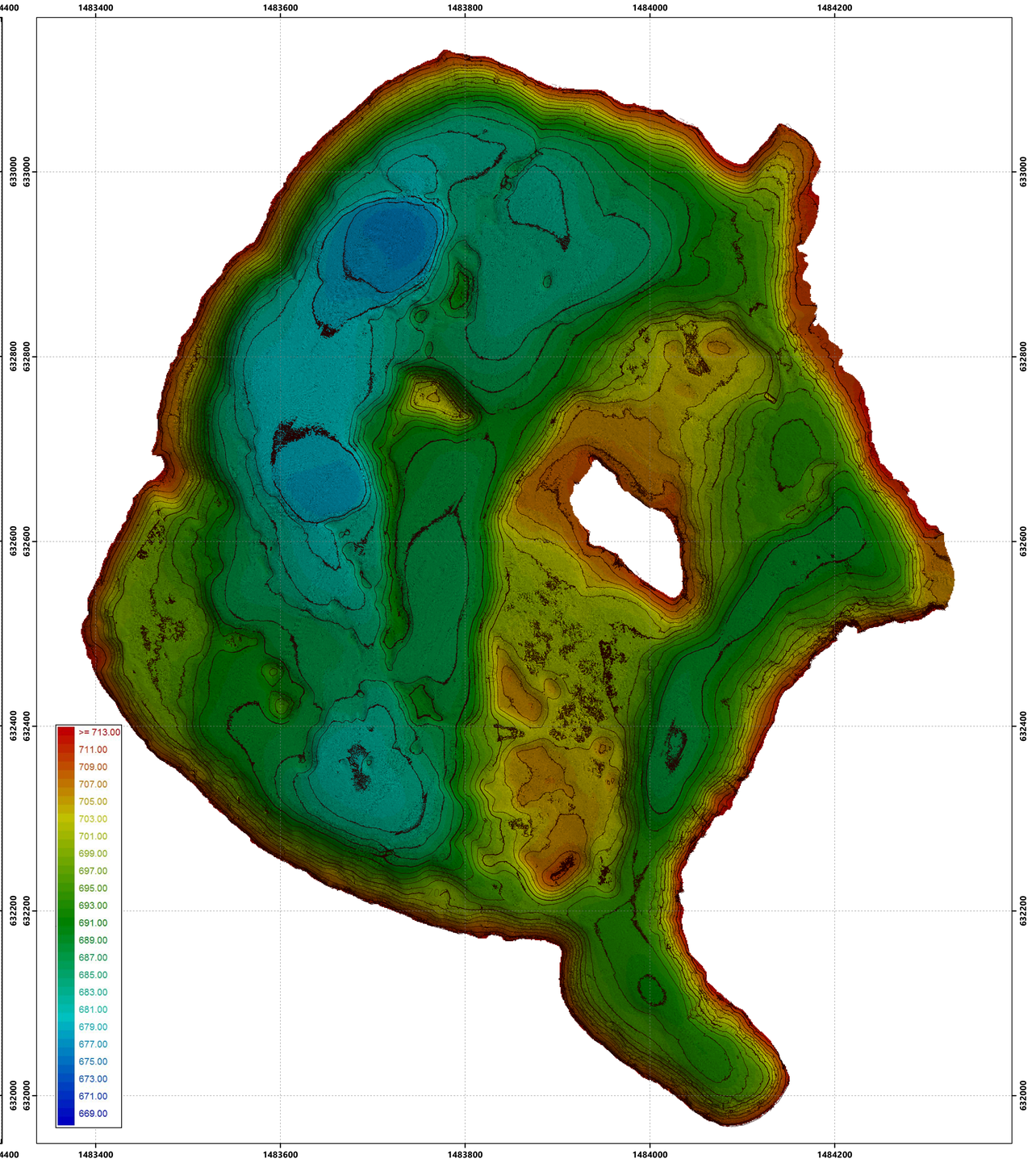

180306 GHD QUARRY POND
MULTI-BEAM BATHYMETRIC SURVEY

Horizontal Datum: State Plane NAD83 - Ohio South

Horizontal Units: U.S. Survey Feet

Vertical Datum: NAVD88

Vertical Units: U.S. Survey Feet

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Location of Survey: Moraine, Ohio

Survey Crew: T. Blumenstein, R. Sands

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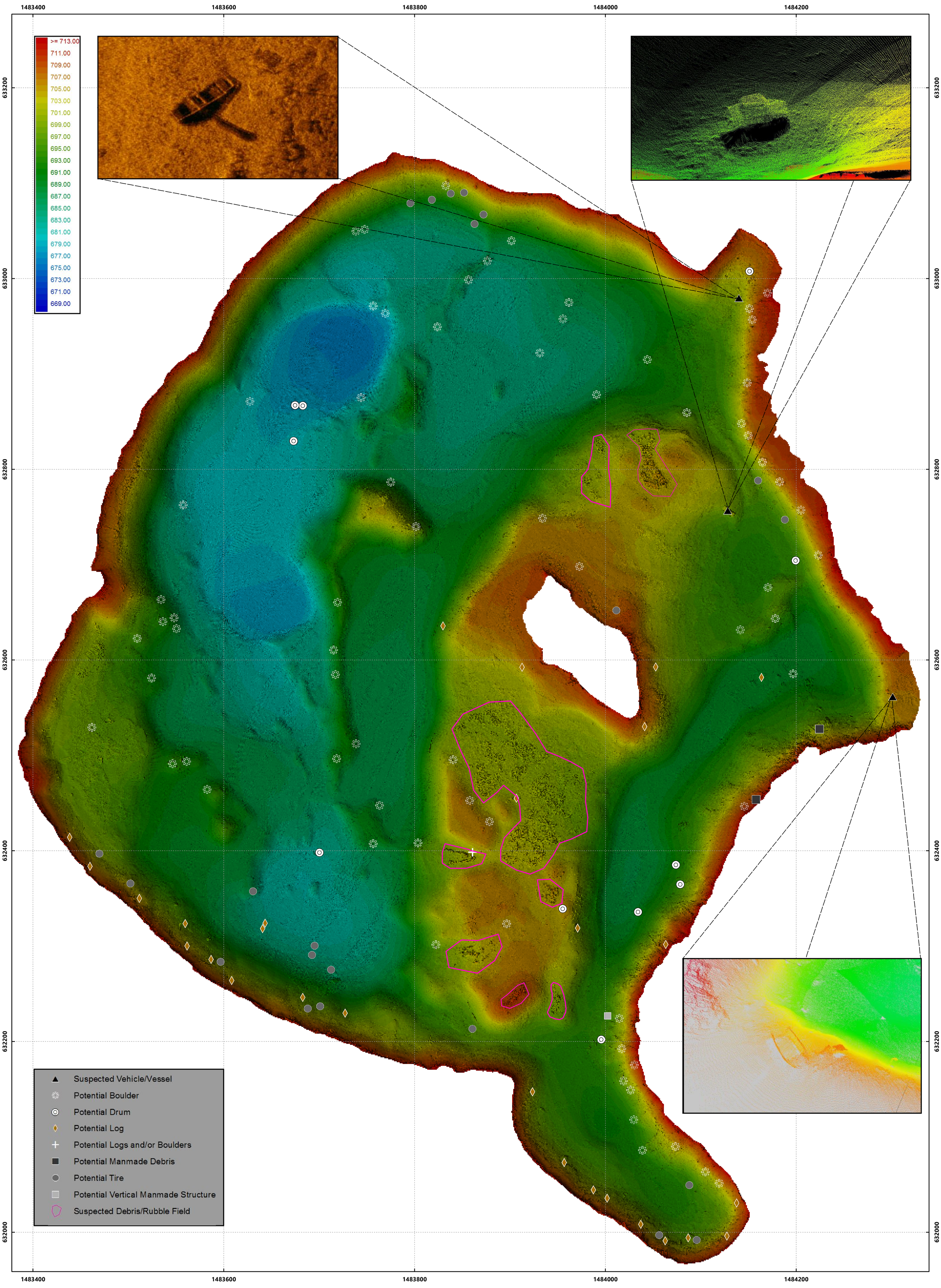
818 Bainbridge St.
La Crosse, WI 54603

(608)-784-7173

0 62.5 125 250 375 500 625 750 875 1,000 1,125 1,250 1,375 1,500 Feet

1 inch = 63 feet

Marine Professionals Since 1919
BRENNAN



180306 GHD QUARRY POND MULTI-BEAM BATHYMETRIC SURVEY FEATURES

Horizontal Datum: State Plane NAD83 - Ohio South

Horizontal Units: U.S. Survey Feet

Vertical Datum: NAVD88

Vertical Units: U.S. Survey Feet

Date of Survey: March 6th-8th, 2018

Location of Survey: Moraine, OH

Survey Crew: T. Blumenstein, R. Sands

N W E S

J.F. Brennan Co., INC. Contact Information

818 Bainbridge St.
La Crosse, WI 54603

(608)-784-7173

0 20 40 80 120 160 200 240 280 320 360 400 440 480 Feet

1 inch = 42 feet

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Appendix B.2
Side Scan Features Location Map by GHD

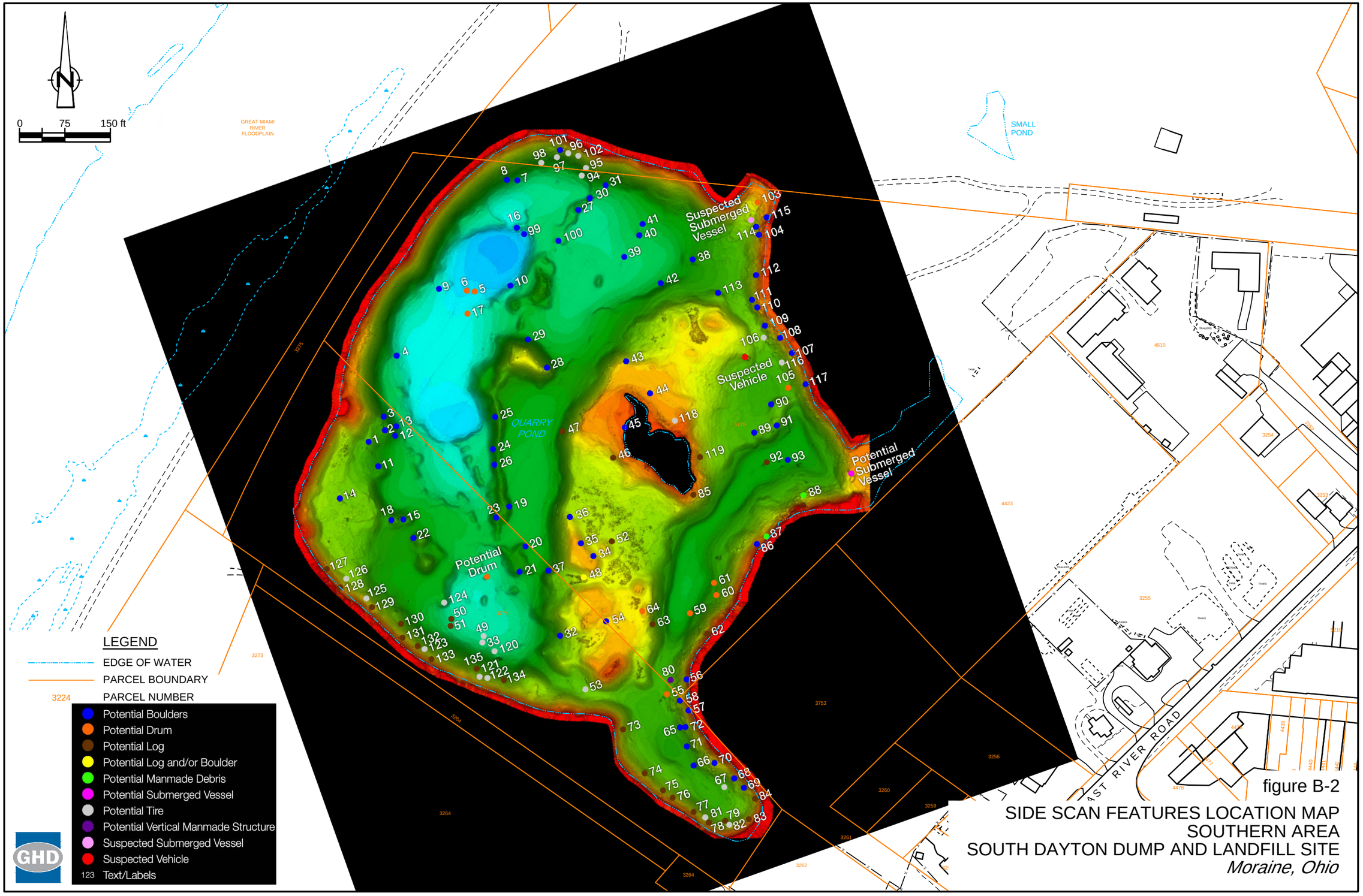

figure B-2

SIDE SCAN FEATURES LOCATION MAP
SOUTHERN AREA
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

N:\CA\Waterloo\Legacy\CAD\drawings\38000s\38443\38443-REPORTS\38443-340(037)\38443-340(037)GN\38443-340(037)GN-WA004.dwg Plot Date: JAN 13, 2020

Appendix C
Quarry Pond Features

GHD Quarry Pond Side Scan Features

Moraine, OH

J.F. BRENNAN CO, INC

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- THE FOLLOWING CONTAIN IMAGES AND DESCRIPTIONS OF NOTABLE FEATURES CAPTURED DURING THE SIDE-SCAN SONAR PORTION OF THE HYDROGRAPHIC SURVEYS CONDUCTED AT THE QUARRY POND ON MARCH 8TH, 2018 BY J.F. BRENNAN CO, INC FOR GHD
- APPROXIMATE LOCATIONS OF FEATURES ARE PROVIDED IN STATE PLANE COORDINATE SYSTEM- OHIO SOUTH (3402), U.S. SURVEY FEET
- IMAGES SHOWN MAY NOT ENCOMPASS EVERY FEATURE LOCATED WITHIN THE QUARRY POND AND ONLY REFLECT CONDITIONS PRESENT AT THE TIME OF THE SURVEY.
- IMAGES MAY CONTAIN MULTIPLE/MORE THAN ONE TYPE OF FEATURE THAN THOSE NOTED IN THE DESCRIPTION. THE DESCRIBED FEATURES APPEAR TO THE LEFT OF THE BLUE NAME/NUMBER INDICATOR ON THE IMAGE
- FEATURE DIMENSIONS (LENGTH, WIDTH, HEIGHT) ARE APPROXIMATE, BASED ON MEASUREMENT TOOLS WITHIN THE SONARWIZ PROCESSING PROGRAM. NOT ALL IMAGES CONTAIN MEASURED DIMENSIONS.

Photo ID: Potential Drum
Easting (X): 1483700.36
Northing (Y): 632398.28
Description: Potential Drum

Dimensions and attributes

- Target Length: 5.31 US ft
- Target Width: 3.21 US ft
- Target Height: 1.31 US ft

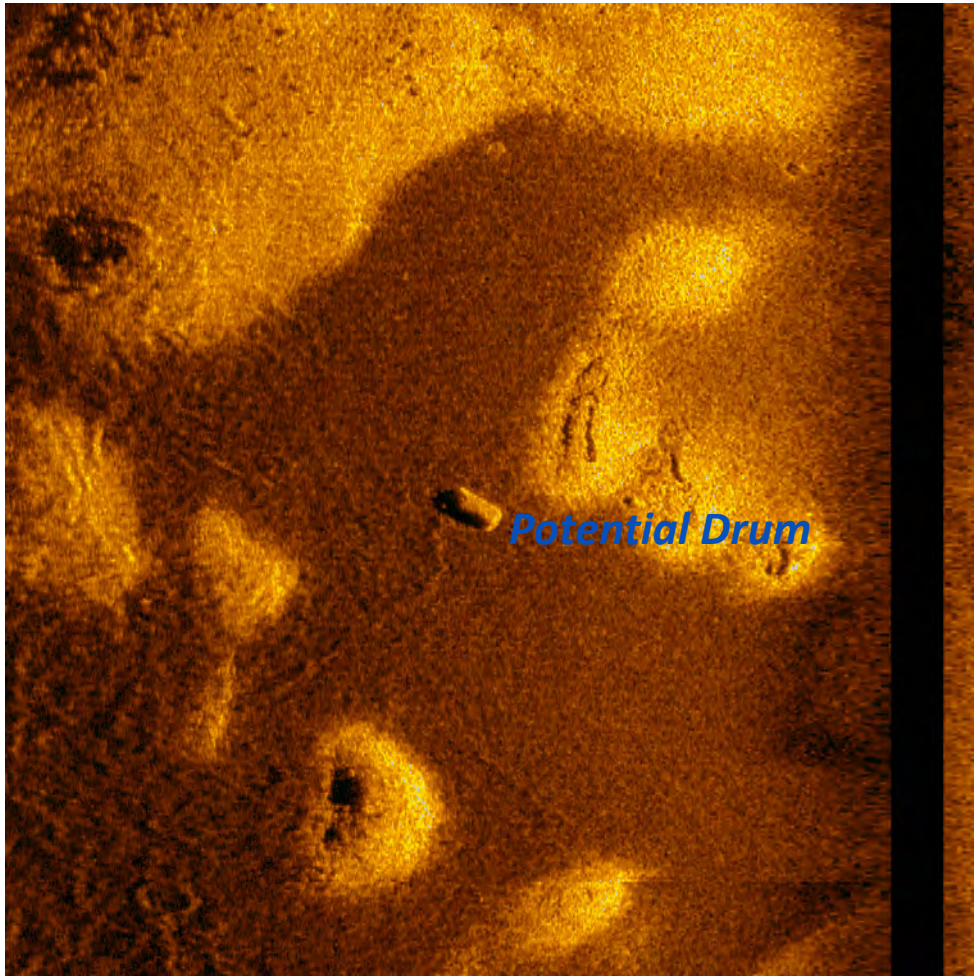

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Photo ID: Potential Submerged Vessel
Easting (X) 1484301.14
Northing (Y) 632561.67
Description: Potential Submerged Vessel

Dimensions and attributes

- Target Length: 9.39 US ft
- Target Width: 7.50 US ft
- Target Height: 2.50 US ft

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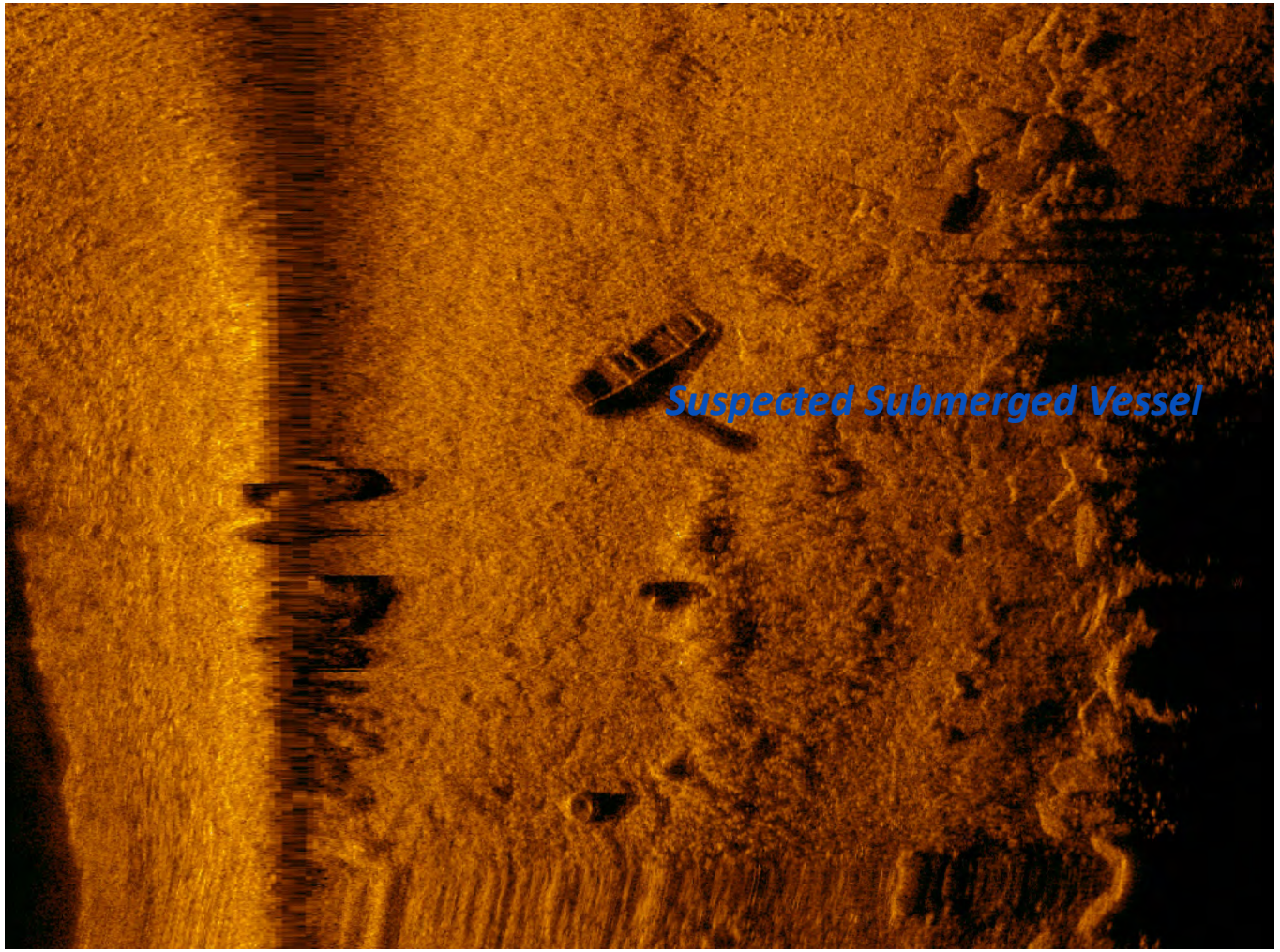
BRENNAN

Photo ID: Suspected Submerged Vessel
Easting (X) 1484139.99
Northing (Y) 632979.58
Description: Suspected Submerged Vessel

Dimensions and attributes

- Target Length: 10.67 US ft
- Target Width: 3.55 US ft
- Target Height: 1.51 US ft

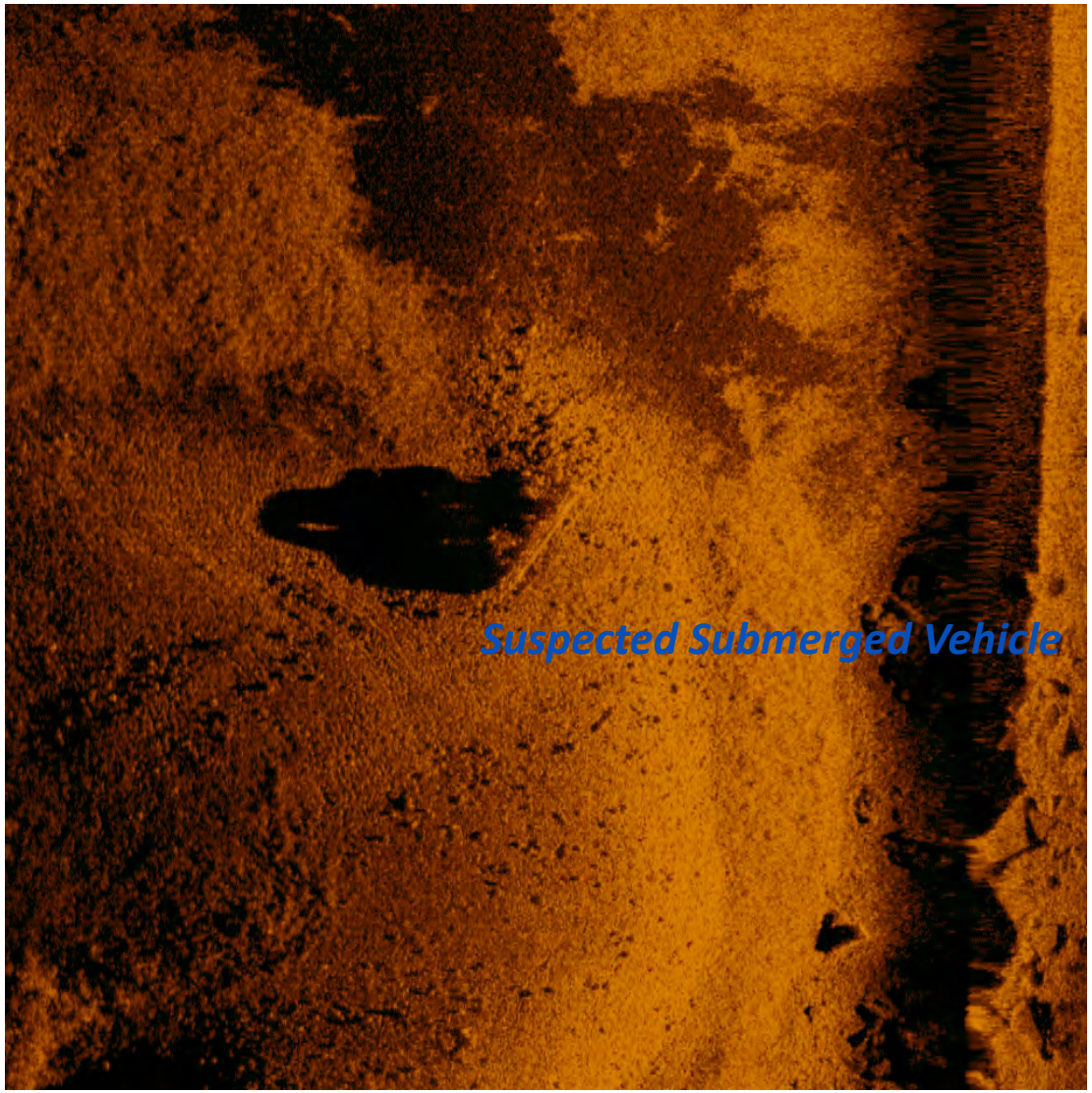


Marine Professionals Since 1919
BRENNAN

Photo ID: Suspected Vehicle
Easting (X) 1484128.2
Northing (Y) 632756.72
Description: Suspected Vehicle

Dimensions and attributes

- Target Length: 15.10 US ft
- Target Width: 7.21 US ft
- Target Height: 3.49 US ft



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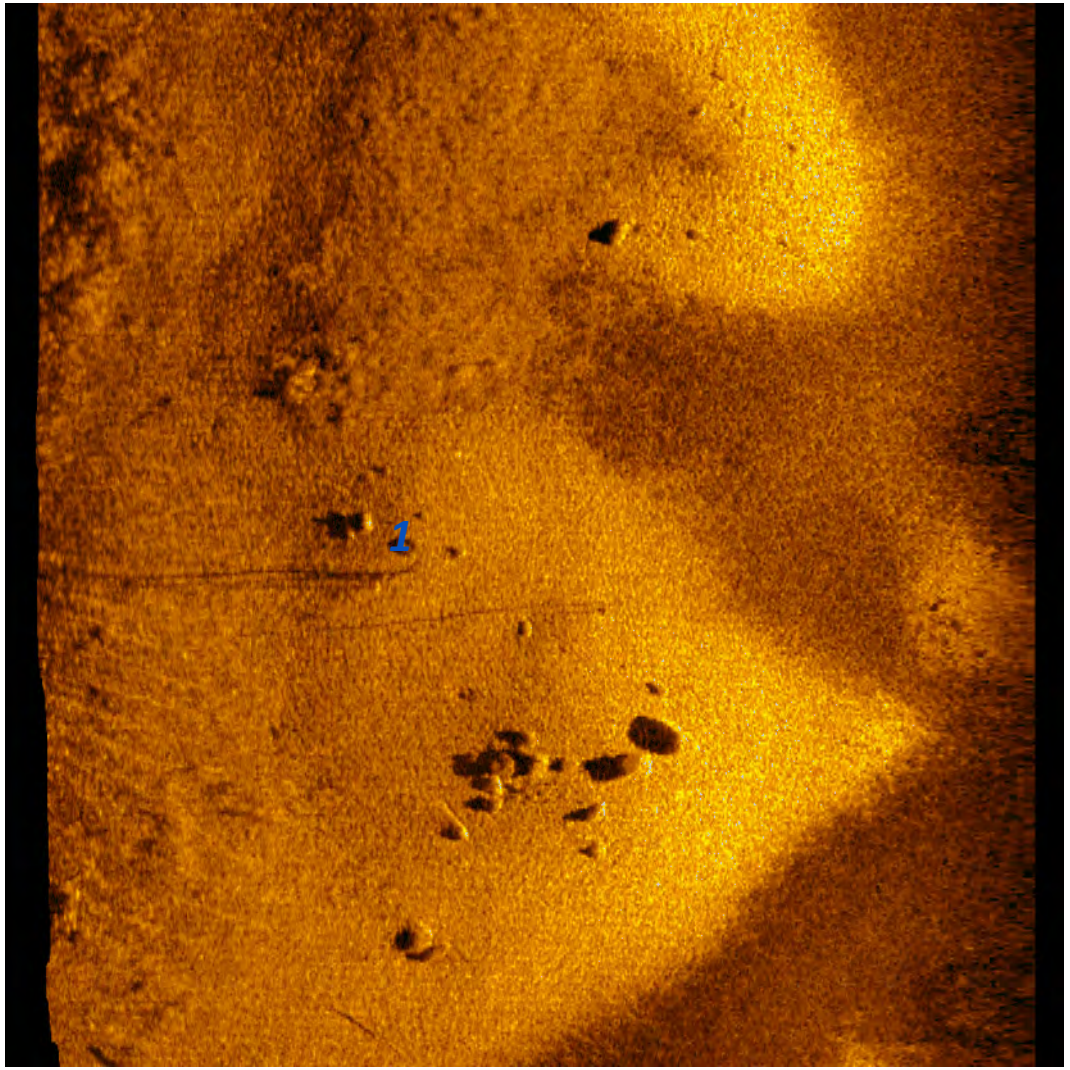
BRENNAN

Photo ID: 1
Easting (X) 1483509.37
Northing (Y) 632622.74
Description: Potential Boulders

Dimensions and attributes

- Target Length: 2.21 US ft
- Target Width: 0.73 US ft
- Target Height: 0.48 US ft

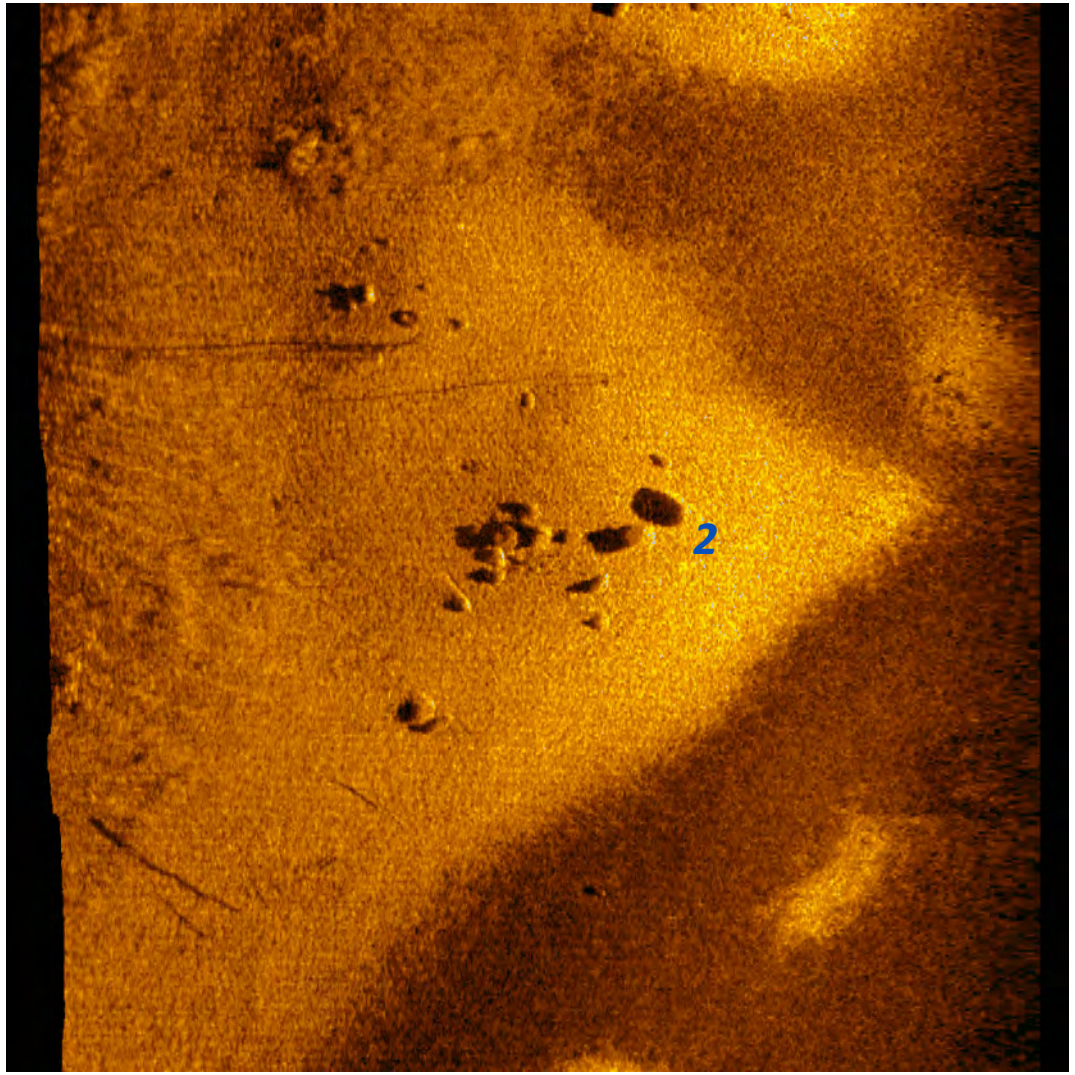


Marine Professionals Since 1919
BRENNAN

Photo ID: 2
Easting (X) 1483536.15
Northing (Y) 632640.36
Description: Potential Boulders

Dimensions and attributes

- Target Length: 5.10 US ft
- Target Width: 1.16 US ft
- Target Height: 0.74 US ft

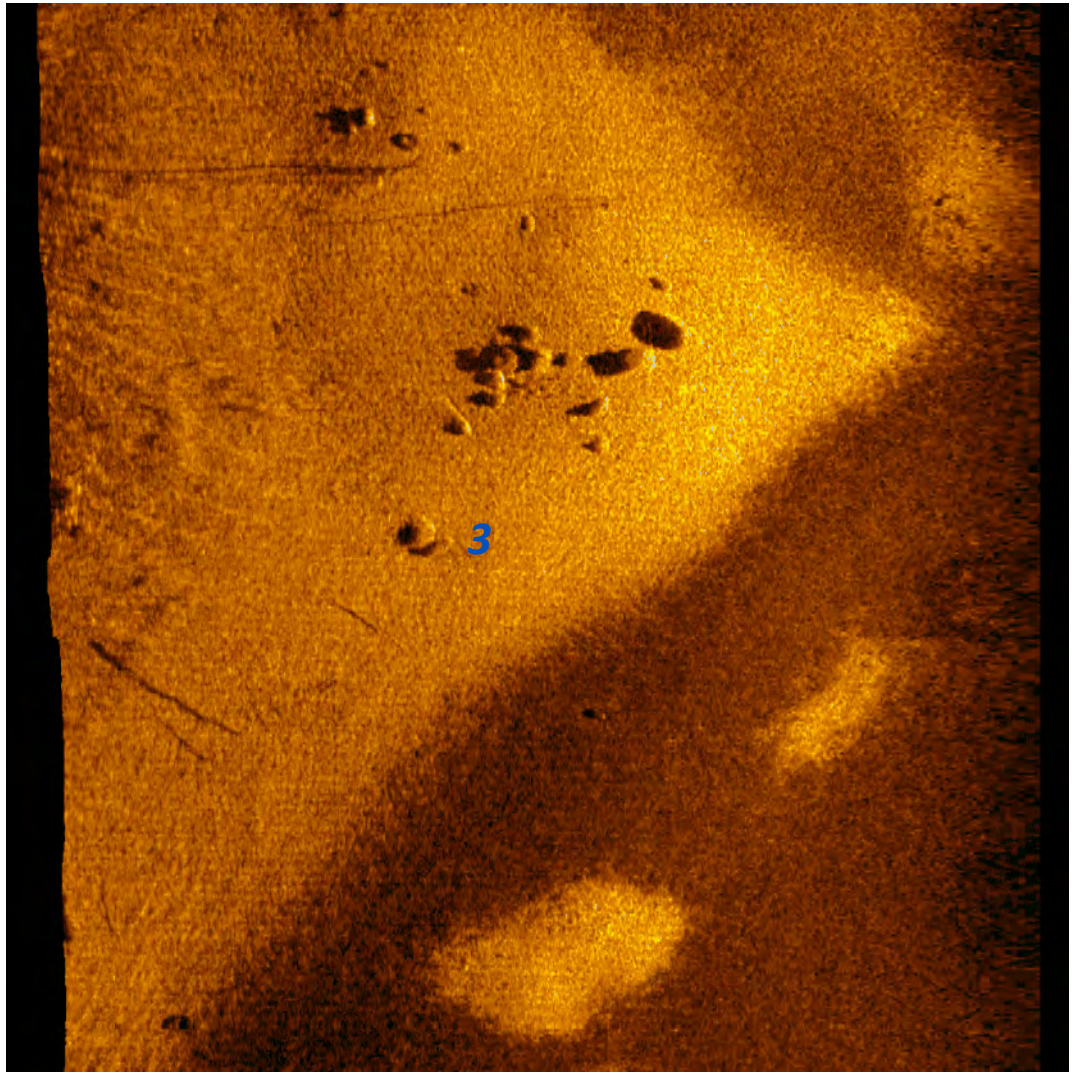


Marine Professionals Since 1919
BRENNAN

Photo ID: 3
Easting (X) 1483534.21
Northing (Y) 632663.47
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.76 US ft
- Target Width: 1.48 US ft
- Target Height: 0.68 US ft

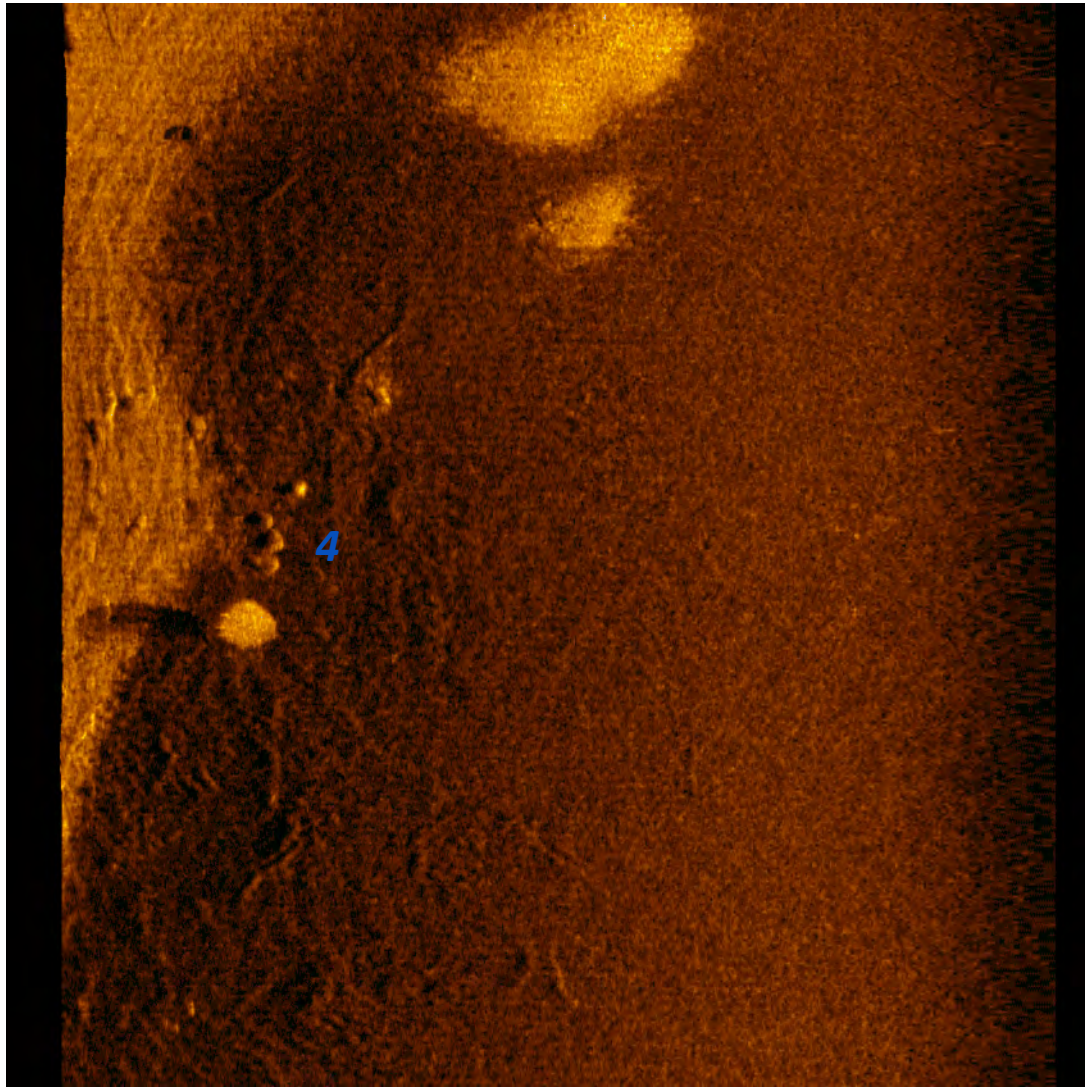


Marine Professionals Since 1919
BRENNAN

Photo ID: 4
Easting (X) 1483557.43
Northing (Y) 632762.73
Description: Potential Boulders

Dimensions and attributes

- Target Length: 1.72 US ft
- Target Width: 1.43 US ft
- Target Height: 0.60 US ft

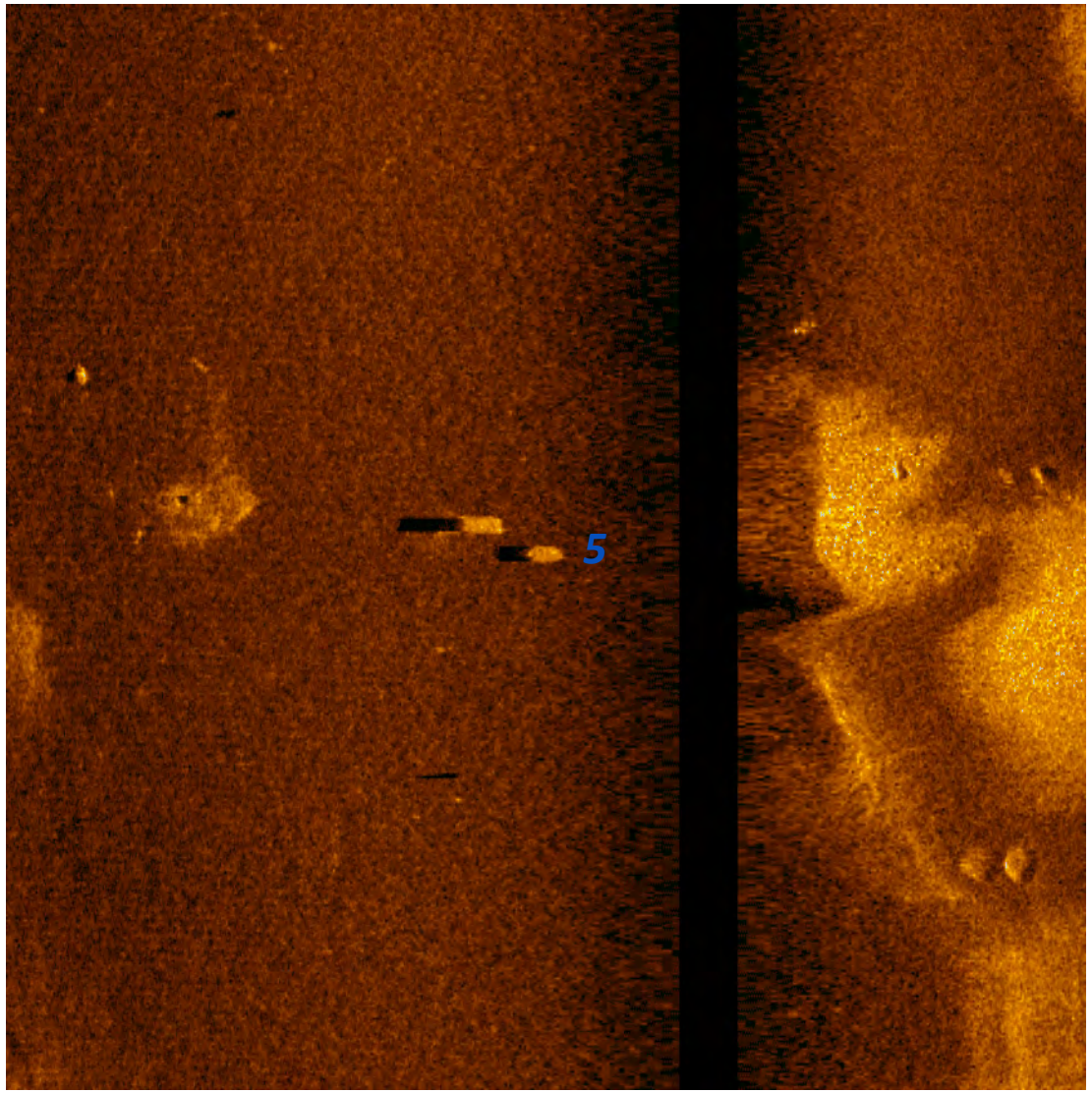


Marine Professionals Since 1919
BRENNAN

Photo ID: 5
Easting (X) 1483682.93
Northing (Y) 632866.87
Description: Potential Standing Drum

Dimensions and attributes

- Target Length: 3.09 US ft
- Target Width: 1.68 US ft
- Target Height: 2.62 US ft

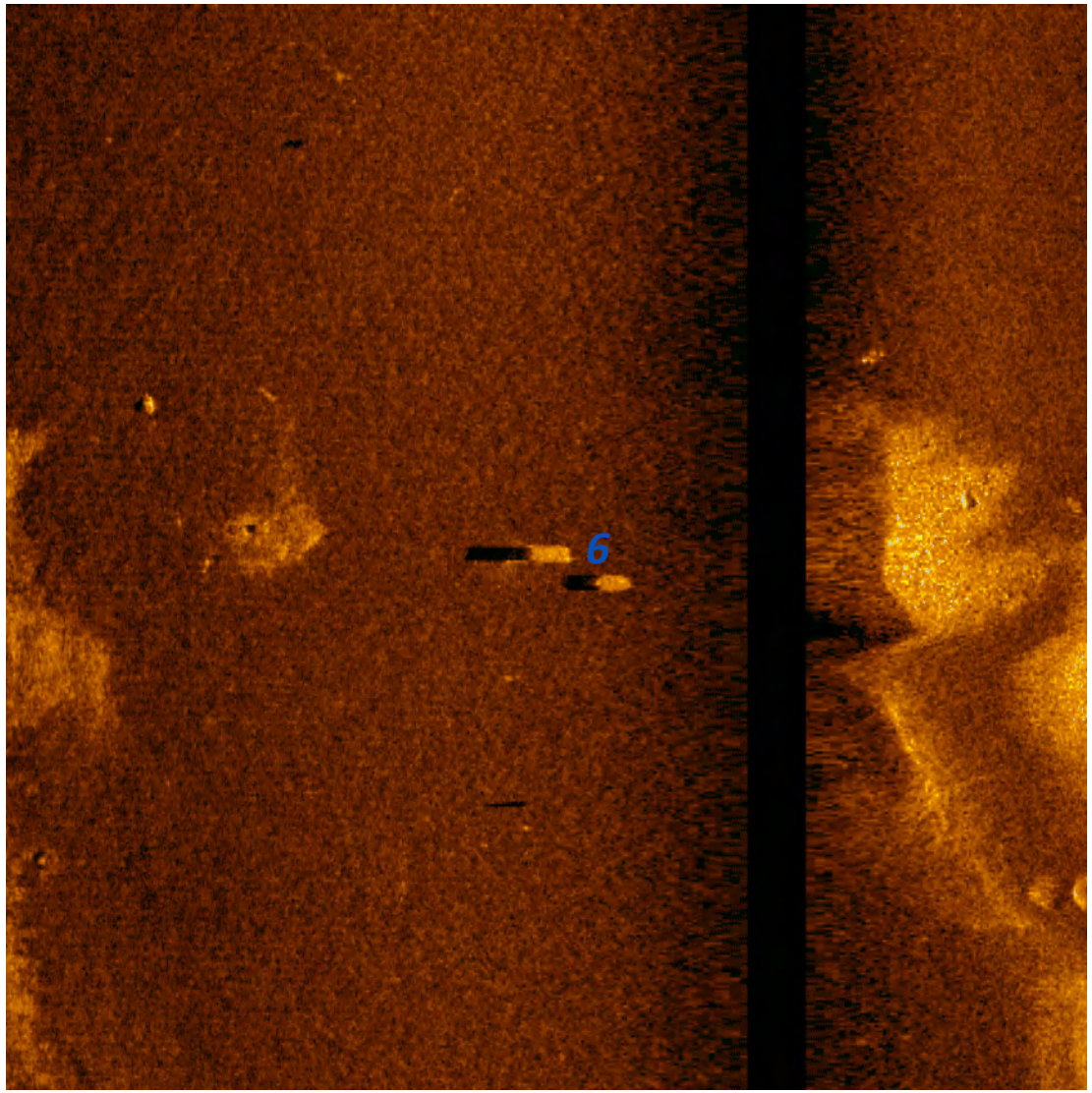


Marine Professionals Since 1919
BRENNAN

Photo ID: 6
Easting (X) 1483674.68
Northing (Y) 632867.17
Description: Potential Standing Drum

Dimensions and attributes

- Target Length: 4.49 US ft
- Target Width: 1.40 US ft
- Target Height: 4.60 US ft

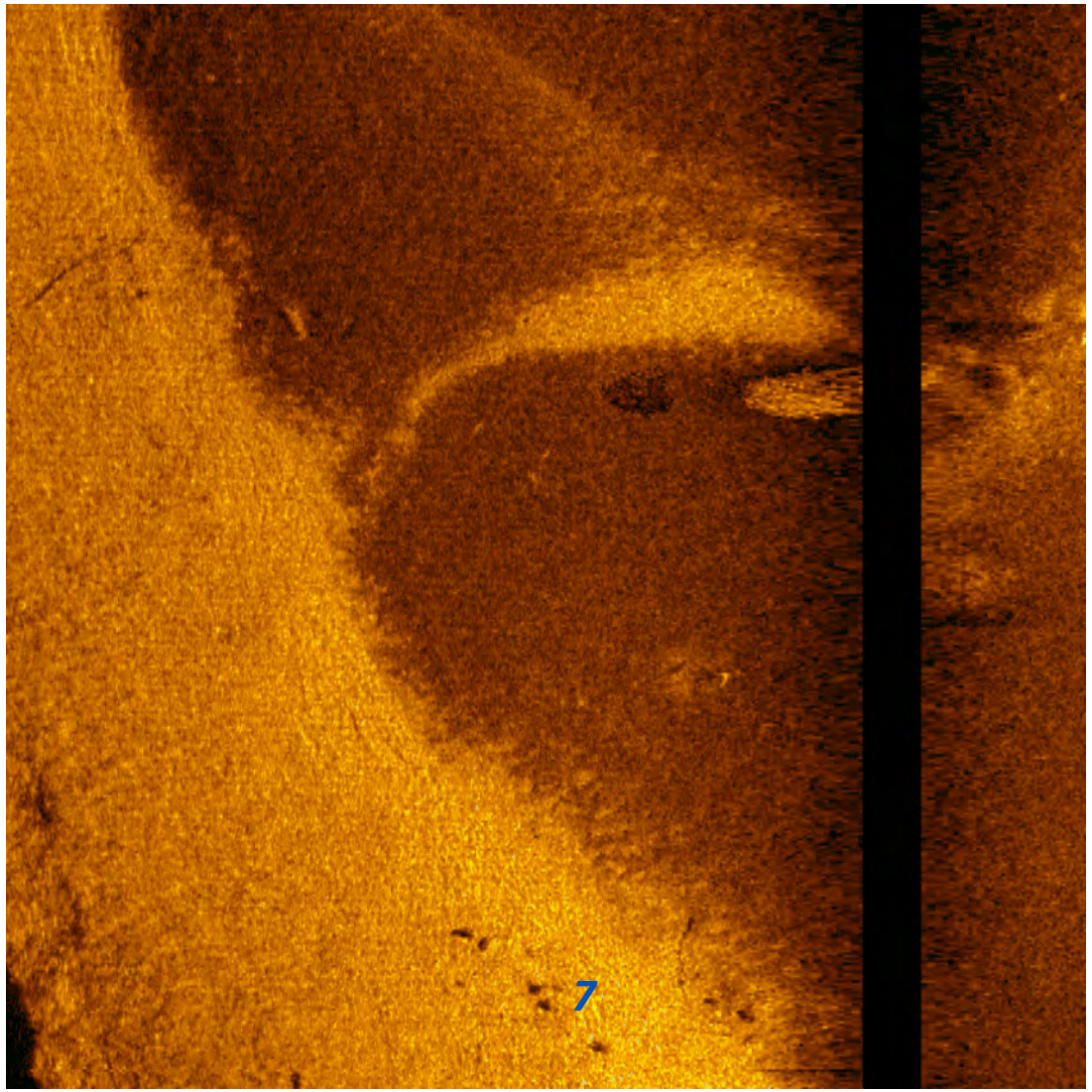


Marine Professionals Since 1919
BRENNAN

Photo ID: 7
Easting (X) 1483747.71
Northing (Y) 633051.64
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

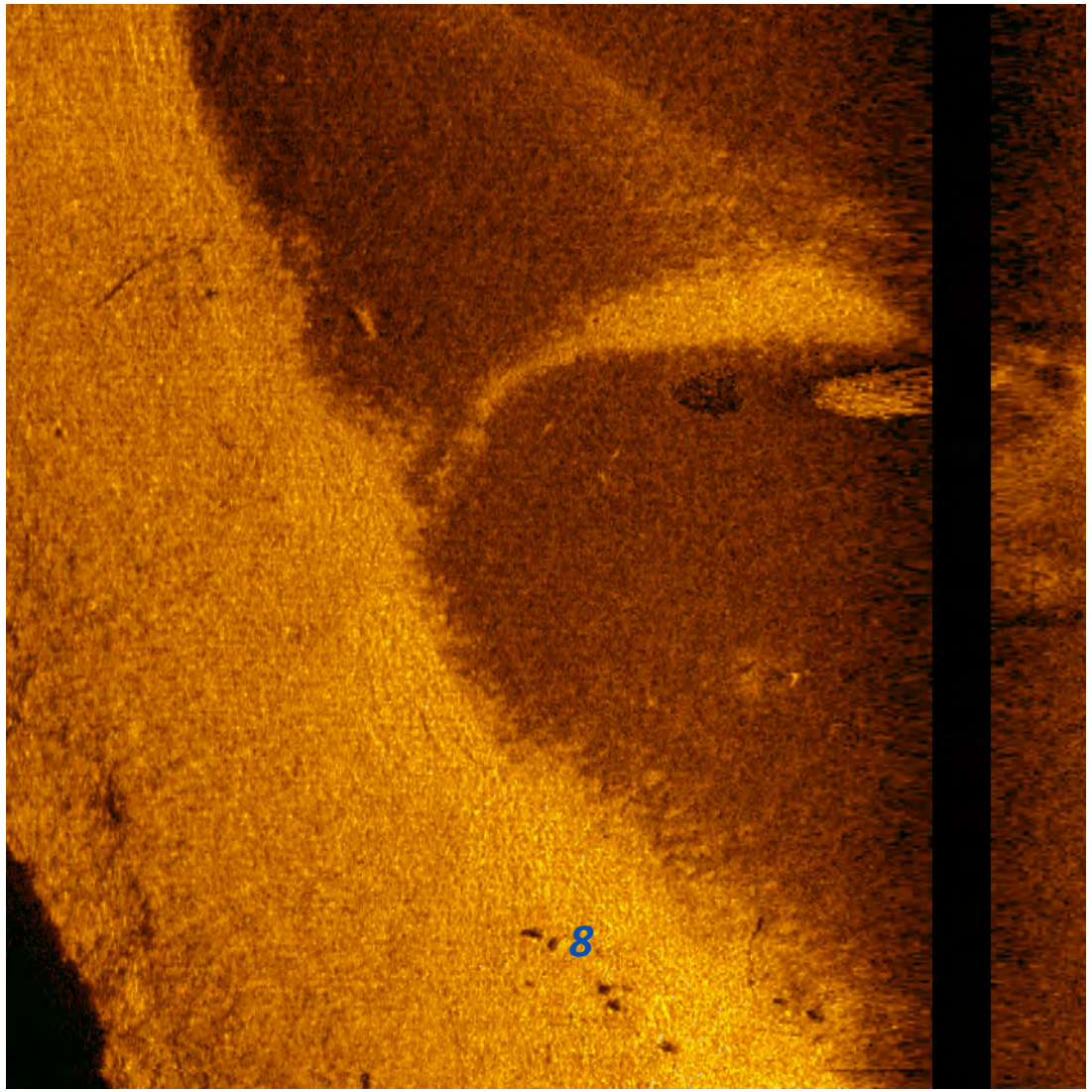


Marine Professionals Since 1919
BRENNAN

Photo ID: 8
Easting (X) 1483738.47
Northing (Y) 633049.75
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

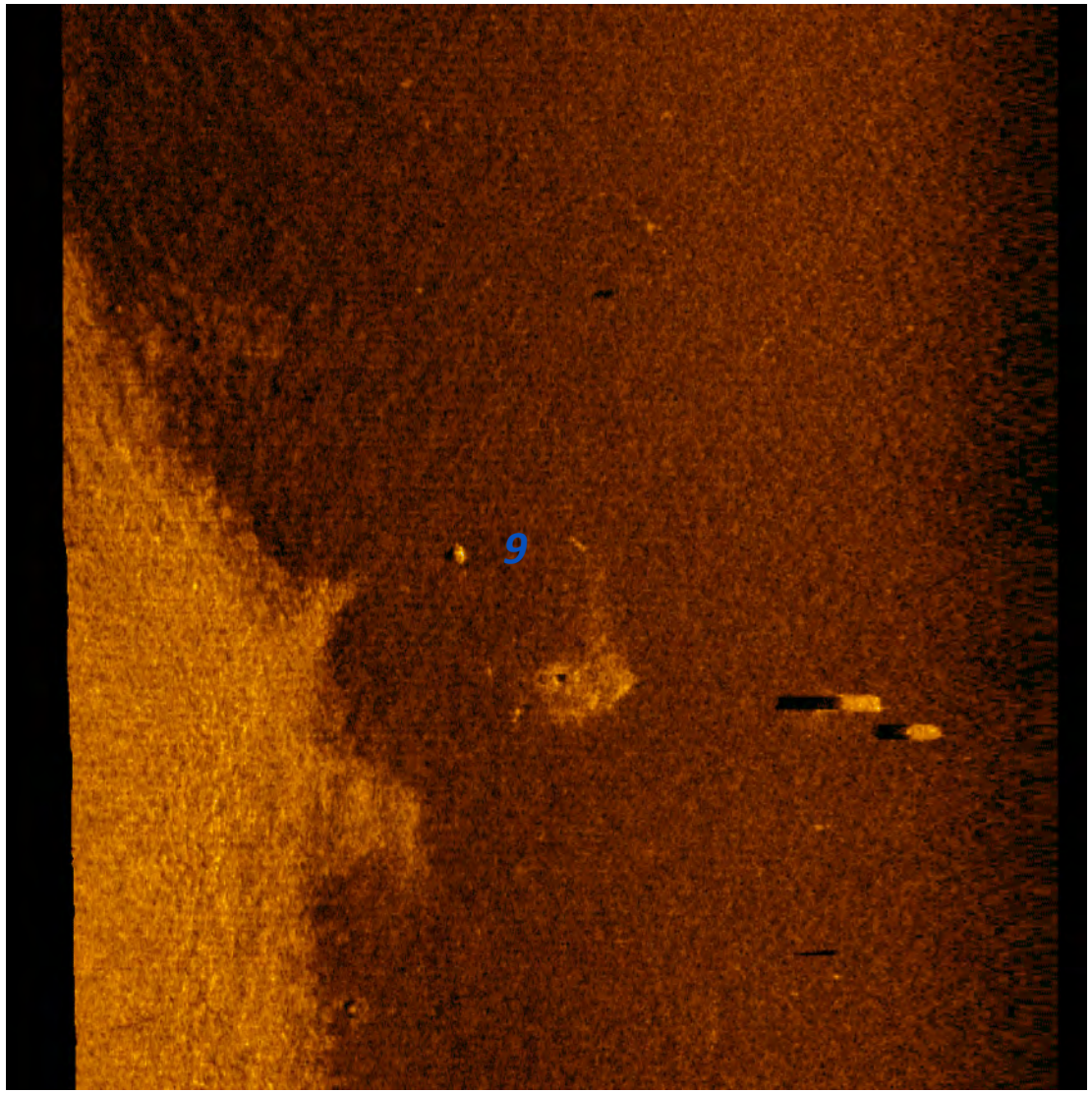


Marine Professionals Since 1919
BRENNAN

Photo ID: 9
Easting (X) 1483627.4
Northing (Y) 632871.22
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

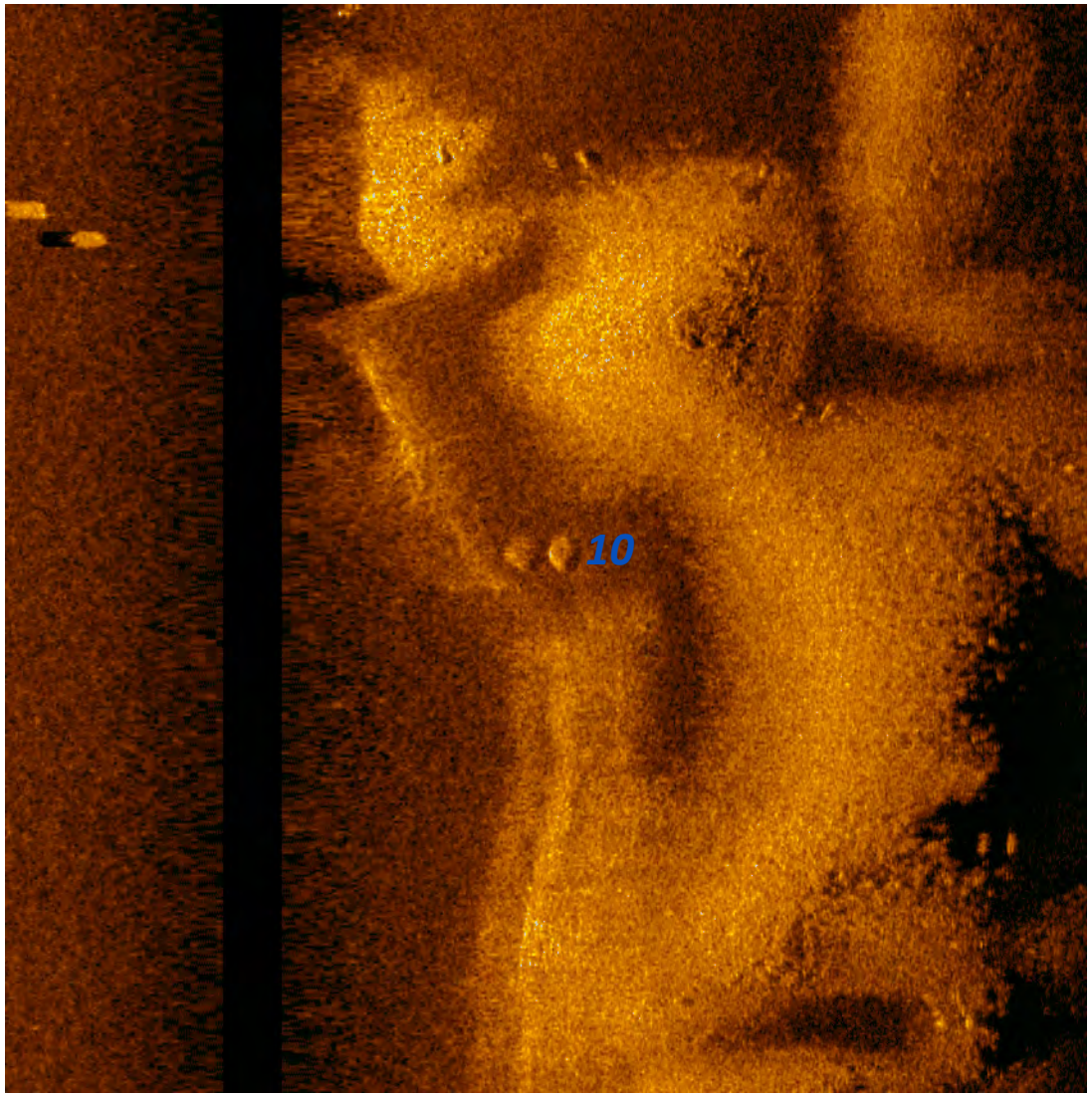


Marine Professionals Since 1919
BRENNAN

Photo ID: 10
Easting (X) 1483743.97
Northing (Y) 632875.23
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.00 US ft
- Target Width: 2.43 US ft
- Target Height: 0.00 US ft

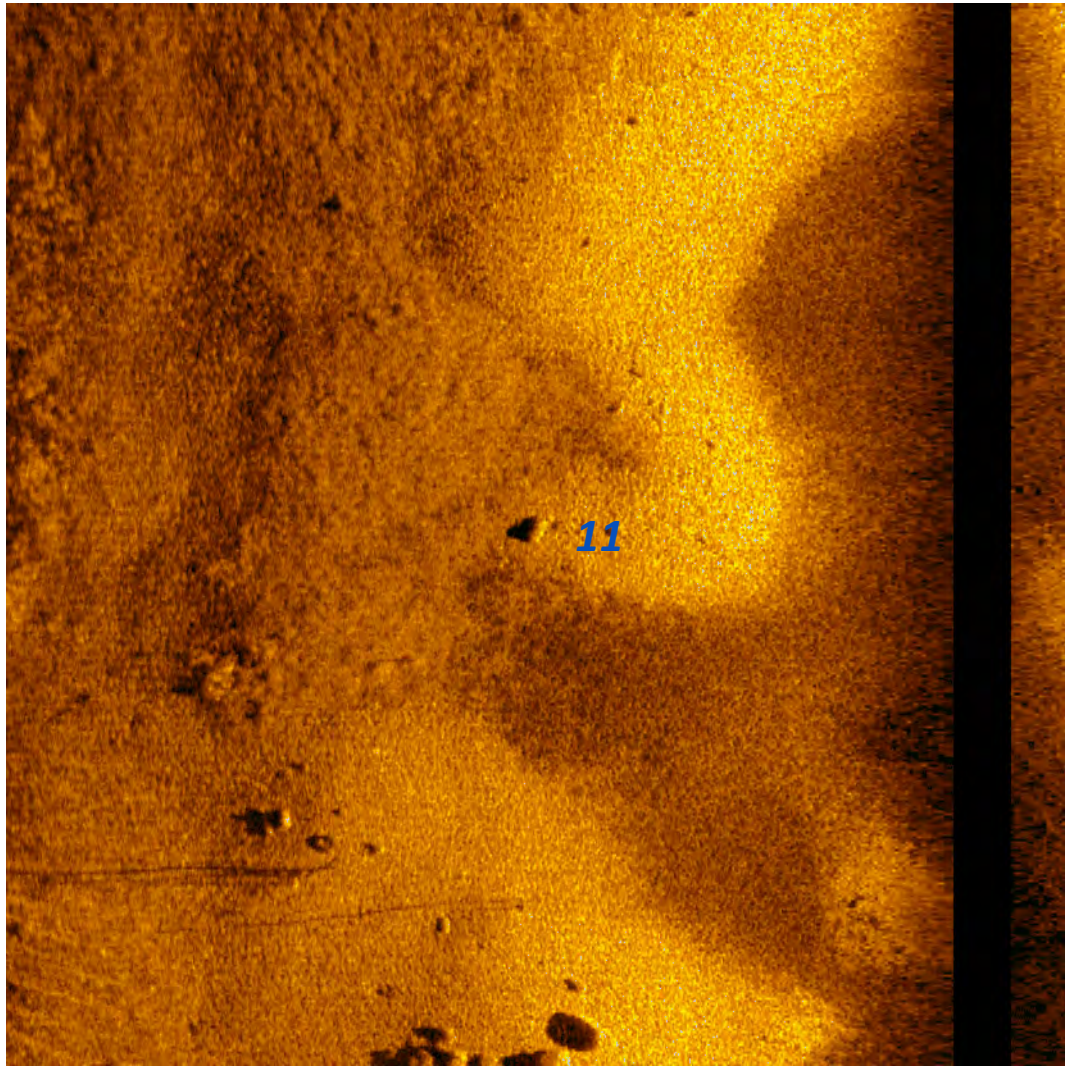


Marine Professionals Since 1919
BRENNAN

Photo ID: 11
Easting (X) 1483524.37
Northing (Y) 632581.18
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.28 US ft
- Target Width: 1.17 US ft
- Target Height: 1.08 US ft

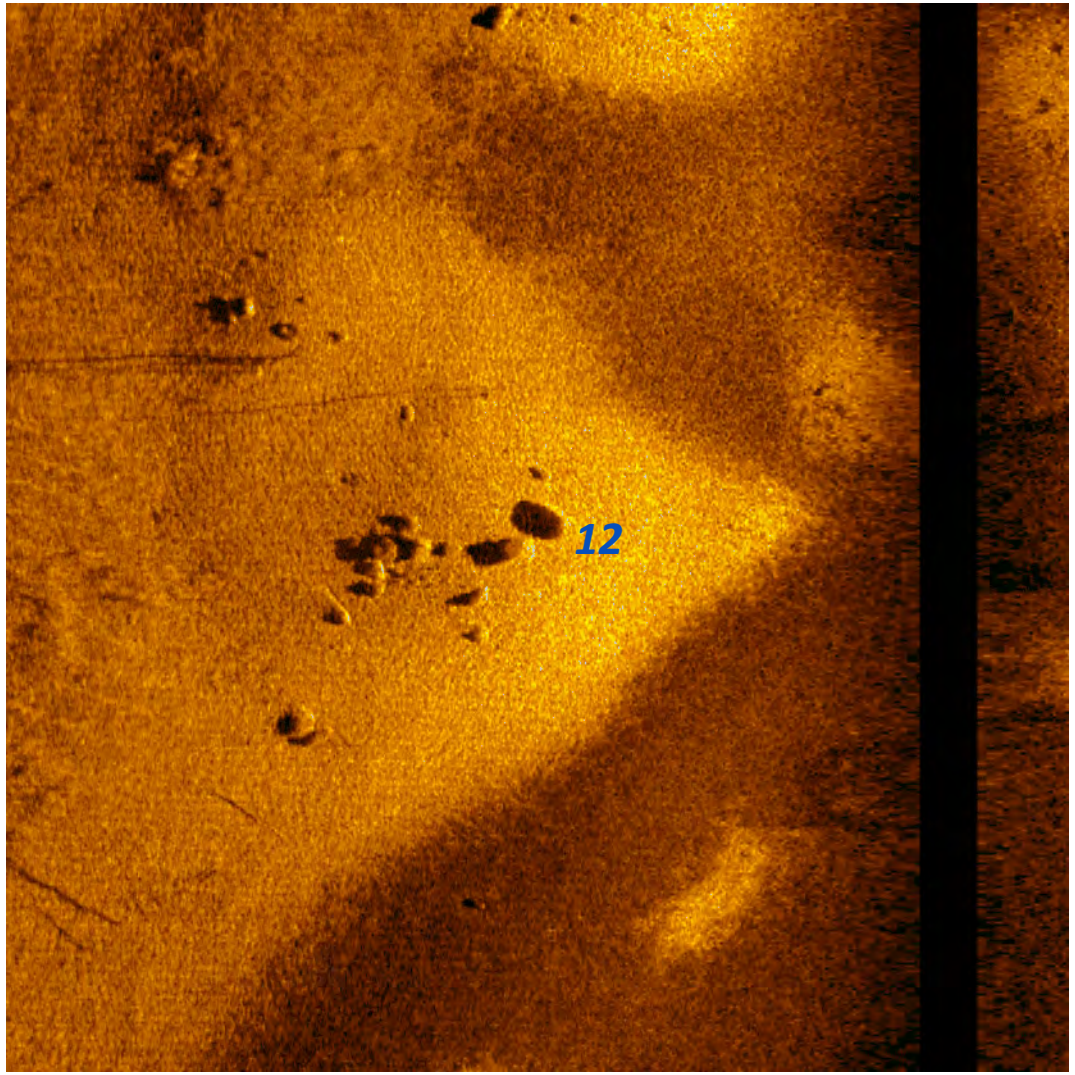


Marine Professionals Since 1919
BRENNAN

Photo ID: 12
Easting (X) 1483550.43
Northing (Y) 632632.96
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.06 US ft
- Target Width: 2.11 US ft
- Target Height: 2.15 US ft

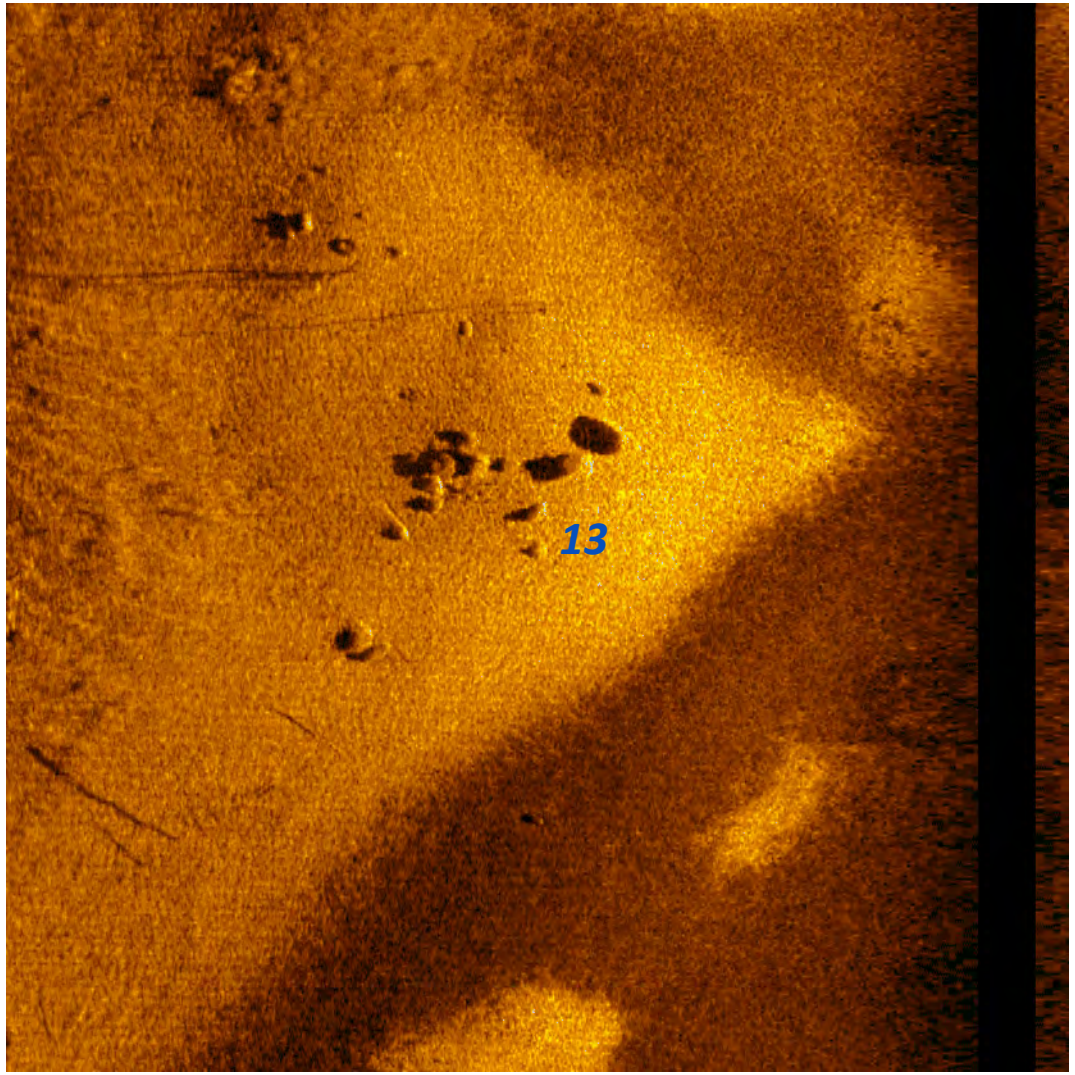


Marine Professionals Since 1919
BRENNAN

Photo ID: 13
Easting (X) 1483547.97
Northing (Y) 632644.35
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

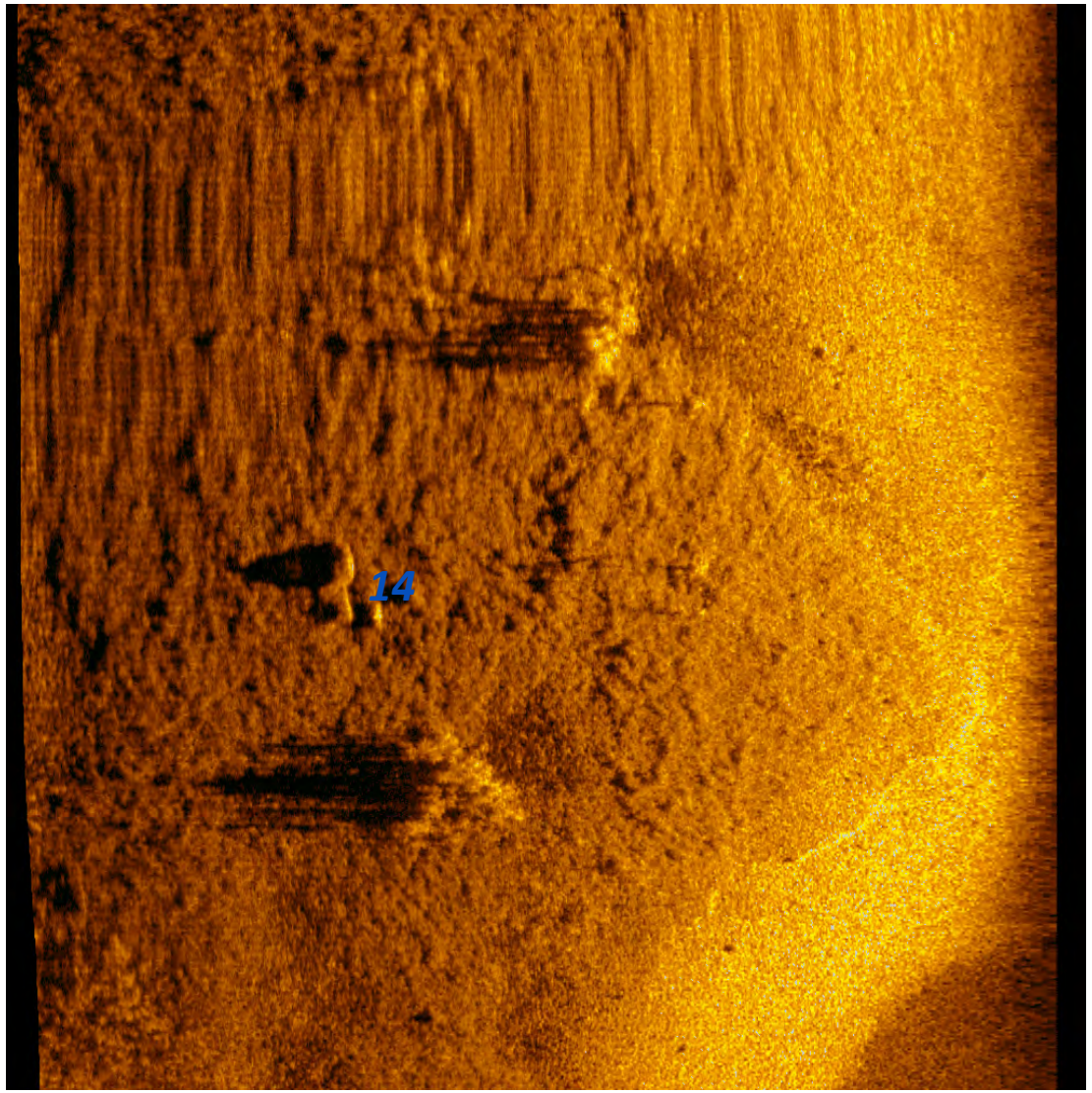


Marine Professionals Since 1919
BRENNAN

Photo ID: 14
Easting (X) 1483461.79
Northing (Y) 632529.45
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.78 US ft
- Target Width: 2.60 US ft
- Target Height: 1.89 US ft

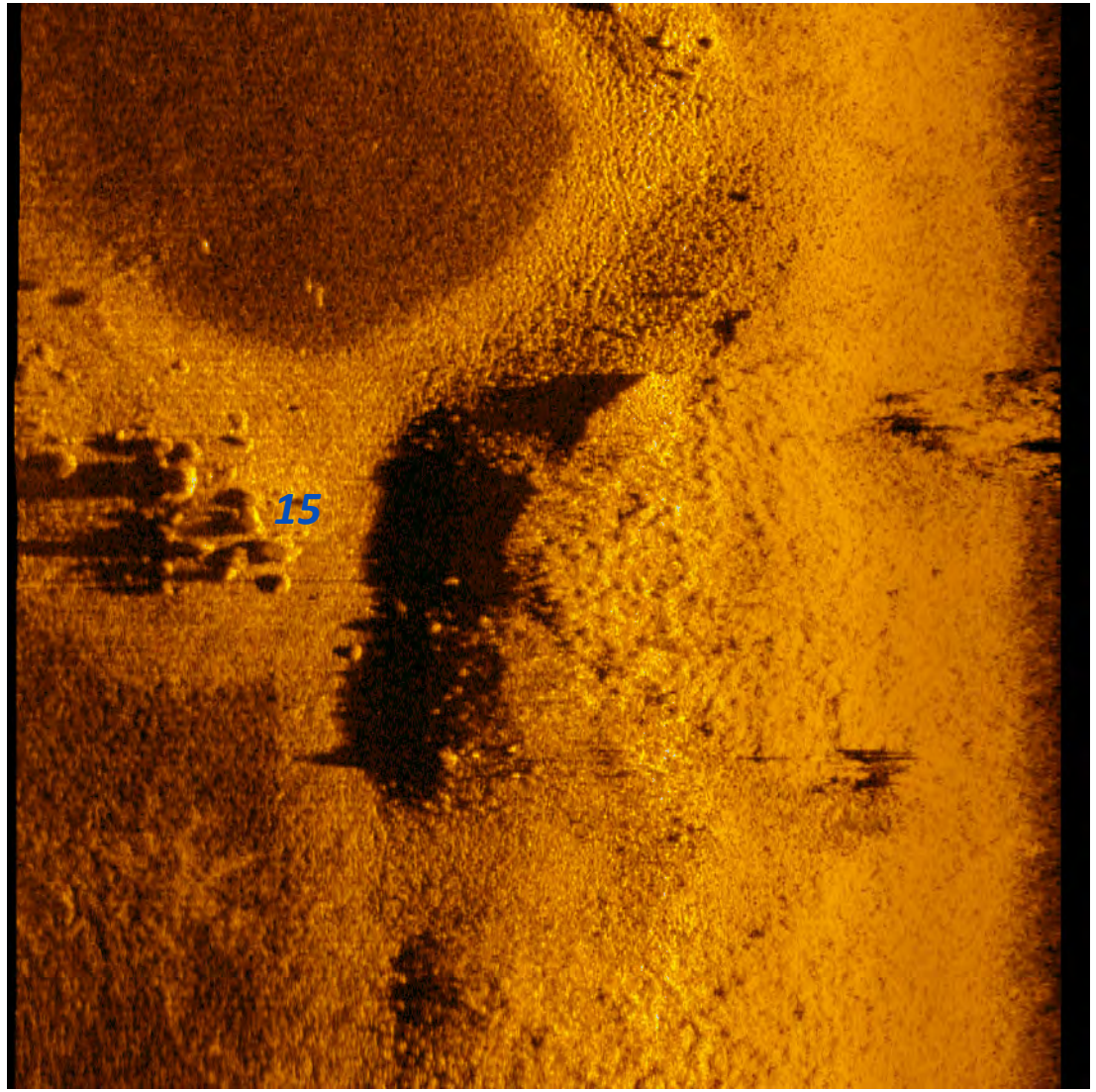


Marine Professionals Since 1919
BRENNAN

Photo ID: 15
Easting (X) 1483561.05
Northing (Y) 632493.71
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.83 US ft
- Target Width: 2.40 US ft
- Target Height: 2.23 US

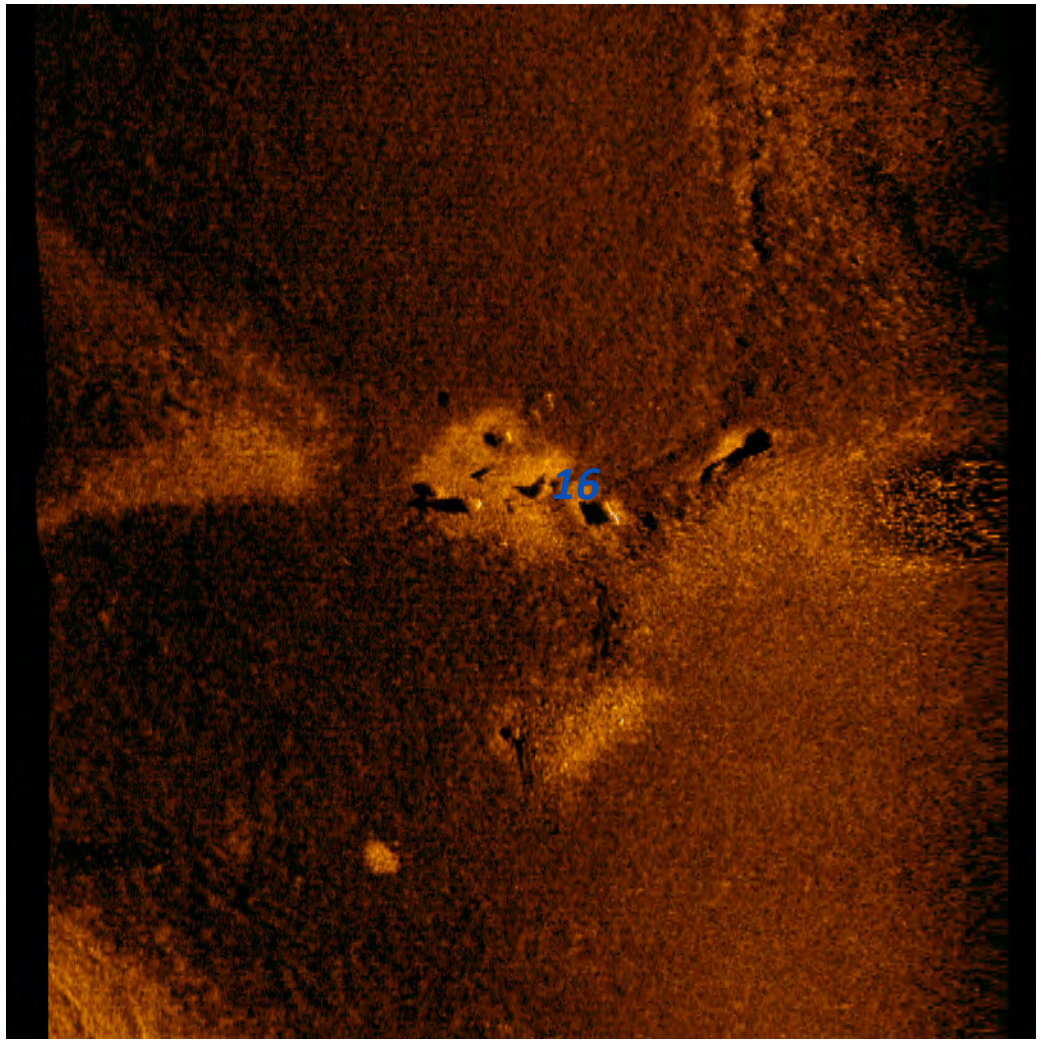


Marine Professionals Since 1919
BRENNAN

Photo ID: 16
Easting (X) 1483756.7
Northing (Y) 632971.38
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

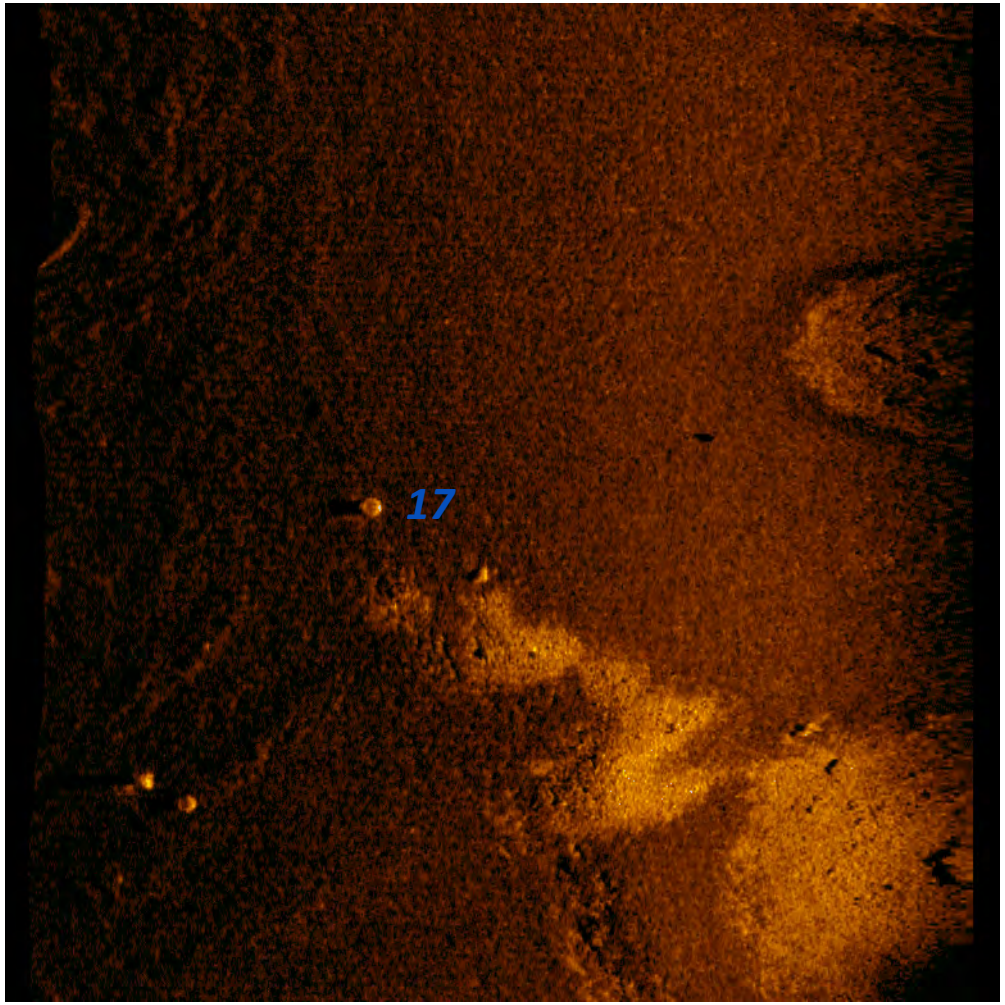


Marine Professionals Since 1919
BRENNAN

Photo ID: 17
Easting (X) 1483673.15
Northing (Y) 632829.66
Description: Potential Drum

Dimensions and attributes

- Target Length: 2.17 US ft
- Target Width: 2.33 US ft
- Target Height: 1.26 US ft

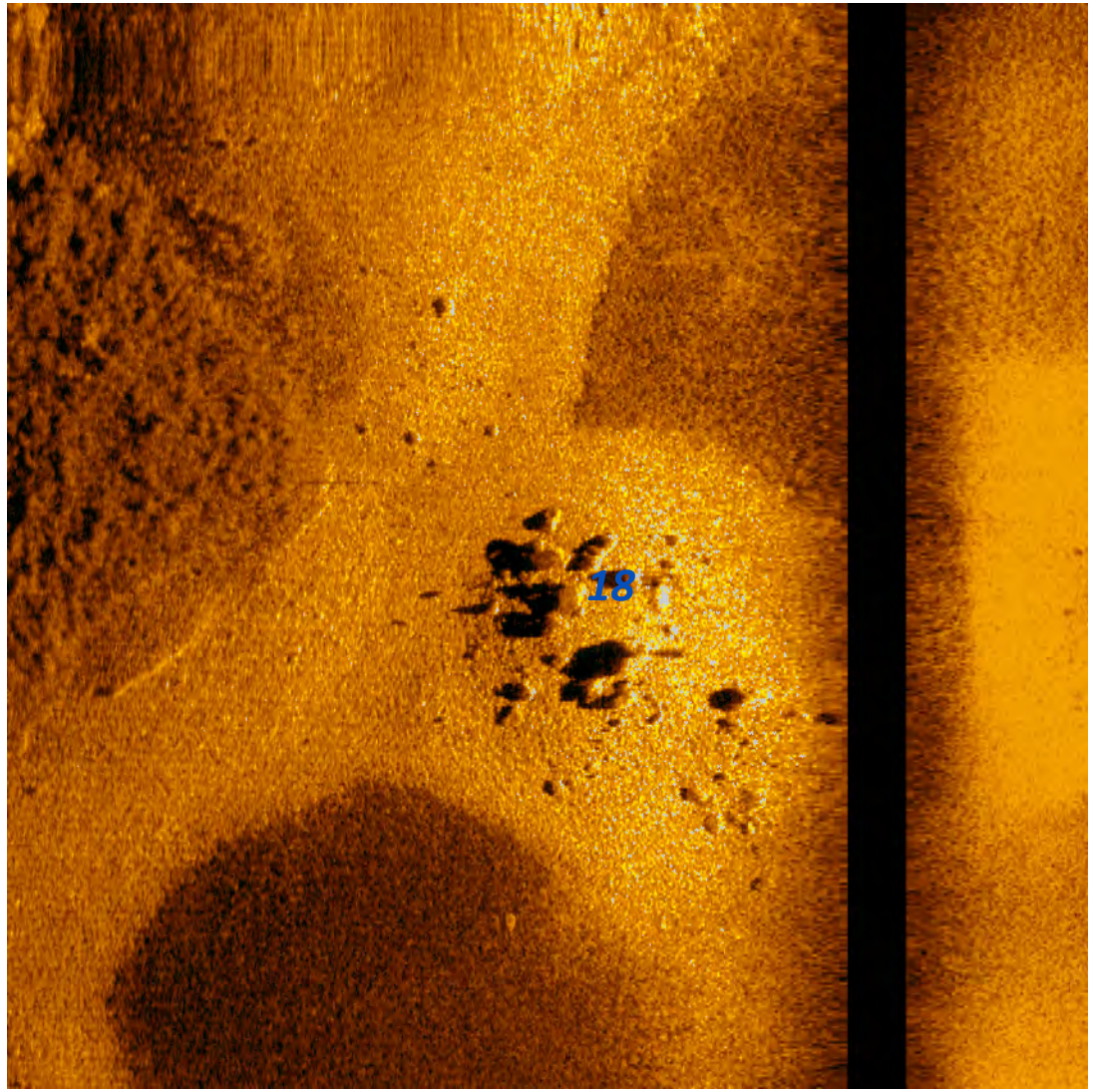


Marine Professionals Since 1919
BRENNAN

Photo ID: 18
Easting (X) 1483546.27
Northing (Y) 632491.37
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.59 US ft
- Target Width: 3.42 US ft
- Target Height: 1.58 US ft

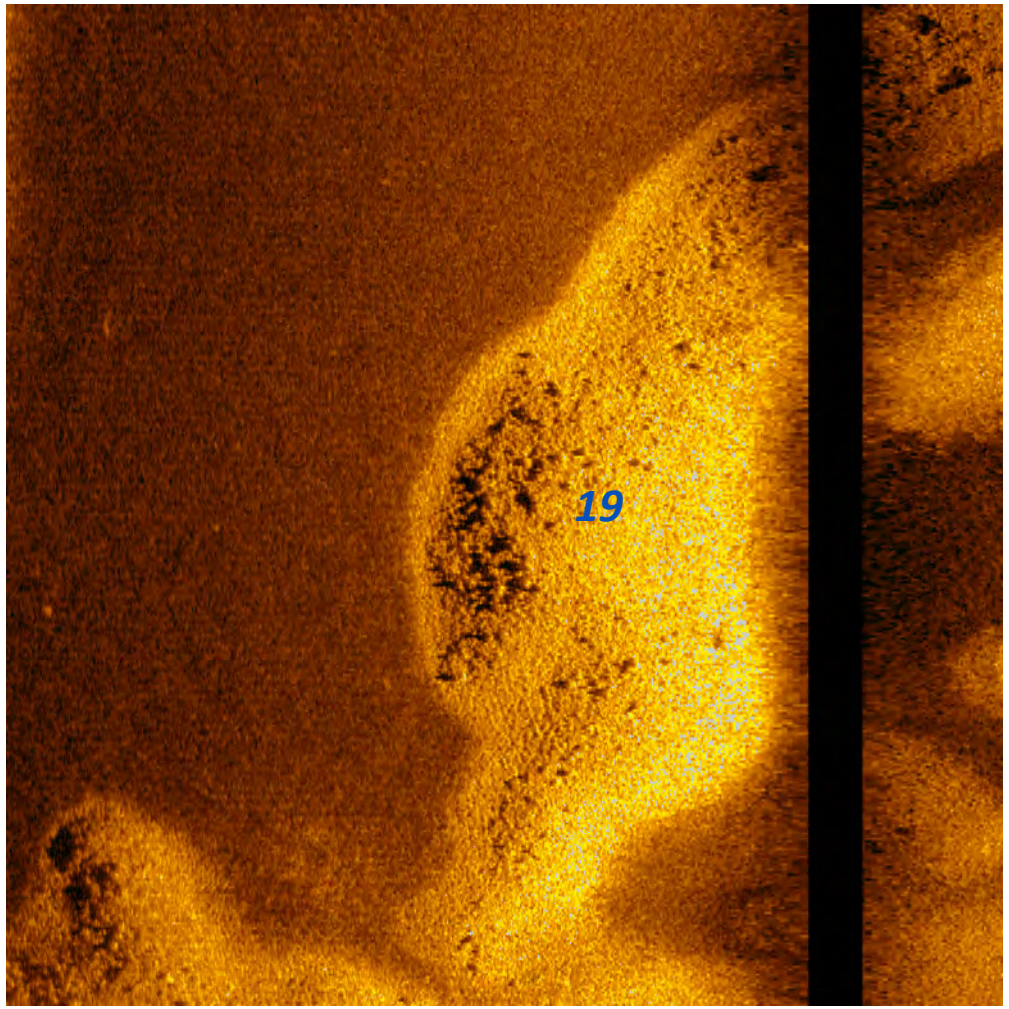


Marine Professionals Since 1919
BRENNAN

Photo ID: 19
Easting (X) 1483738.7
Northing (Y) 632512.22
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

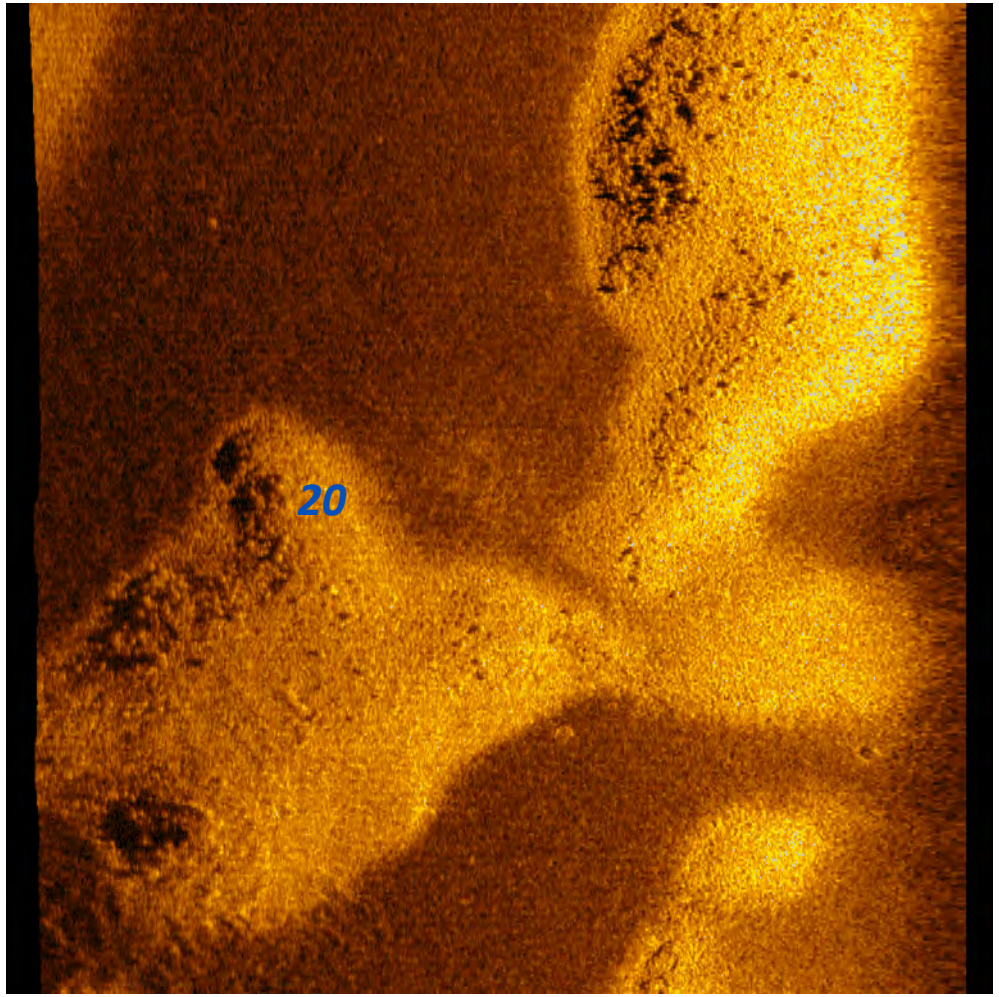


Marine Professionals Since 1919
BRENNAN

Photo ID: 20
Easting (X) 1483763.4
Northing (Y) 632447.65
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

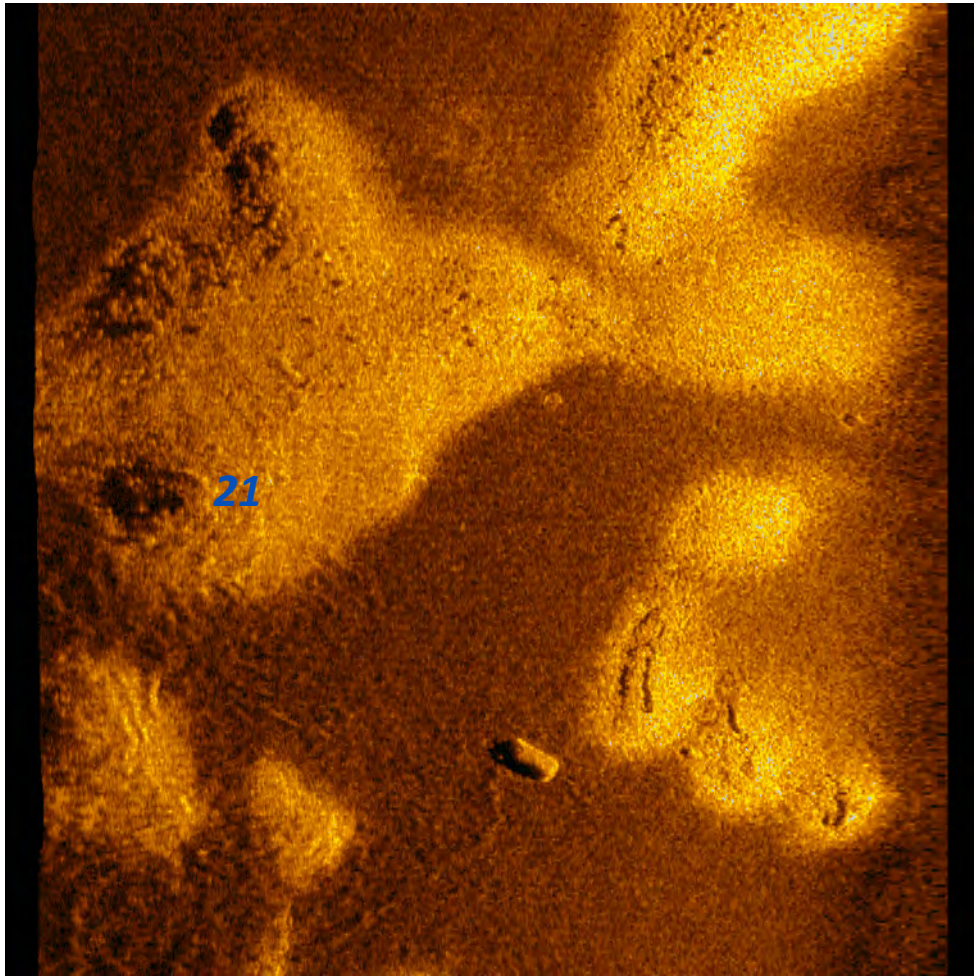


Marine Professionals Since 1919
BRENNAN

Photo ID: 21
Easting (X) 1483756.69
Northing (Y) 632407.57
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

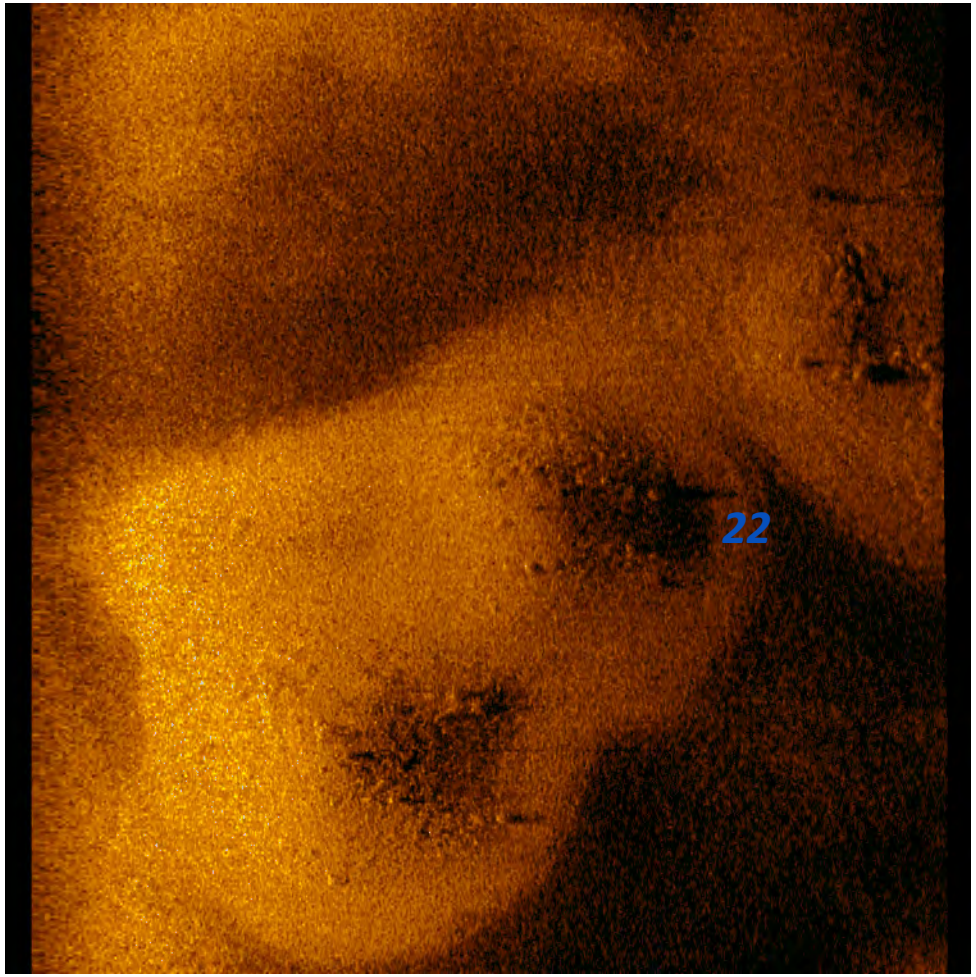


Marine Professionals Since 1919
BRENNAN

Photo ID: 22
Easting (X) 1483582.58
Northing (Y) 632464.37
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

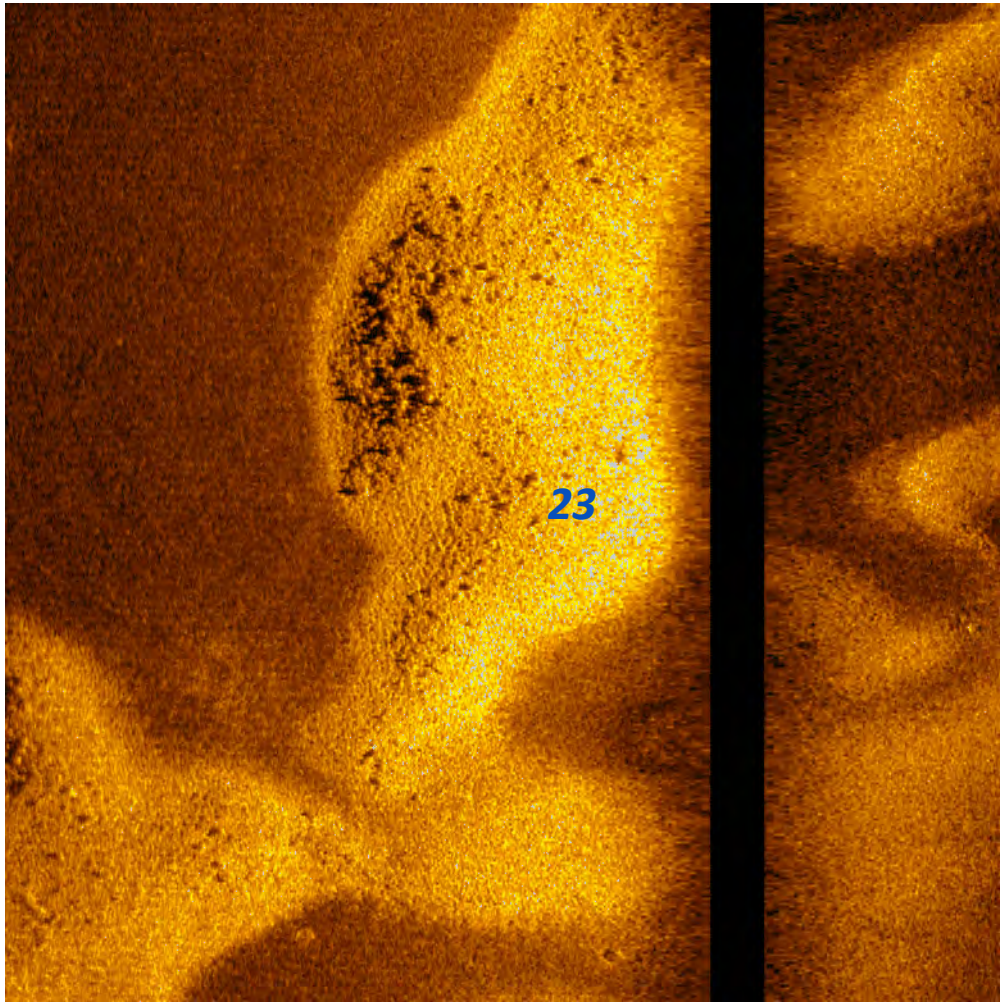


Marine Professionals Since 1919
BRENNAN

Photo ID: 23
Easting (X) 1483718.33
Northing (Y) 632496.59
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

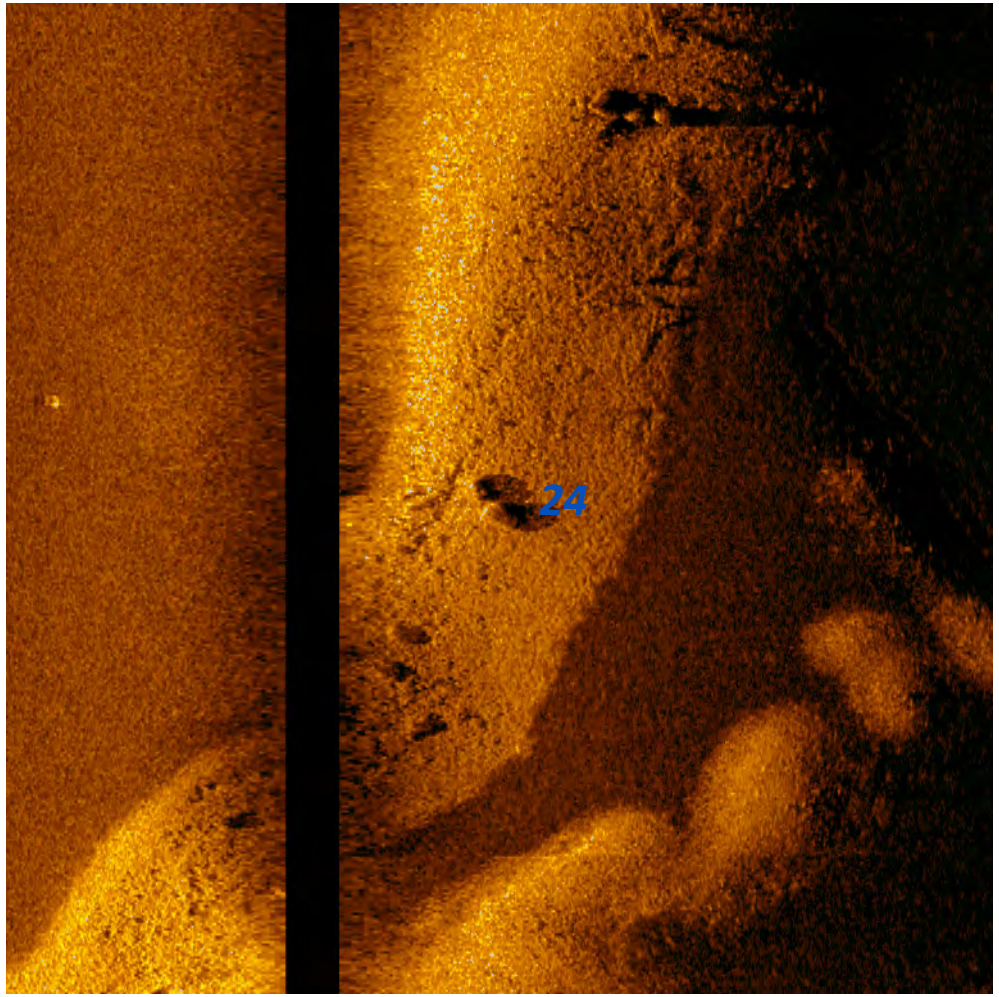


Marine Professionals Since 1919
BRENNAN

Photo ID: 24
Easting (X) 1483715.22
Northing (Y) 632610.64
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.86 US ft
- Target Width: 1.69 US ft
- Target Height: 3.96 US ft

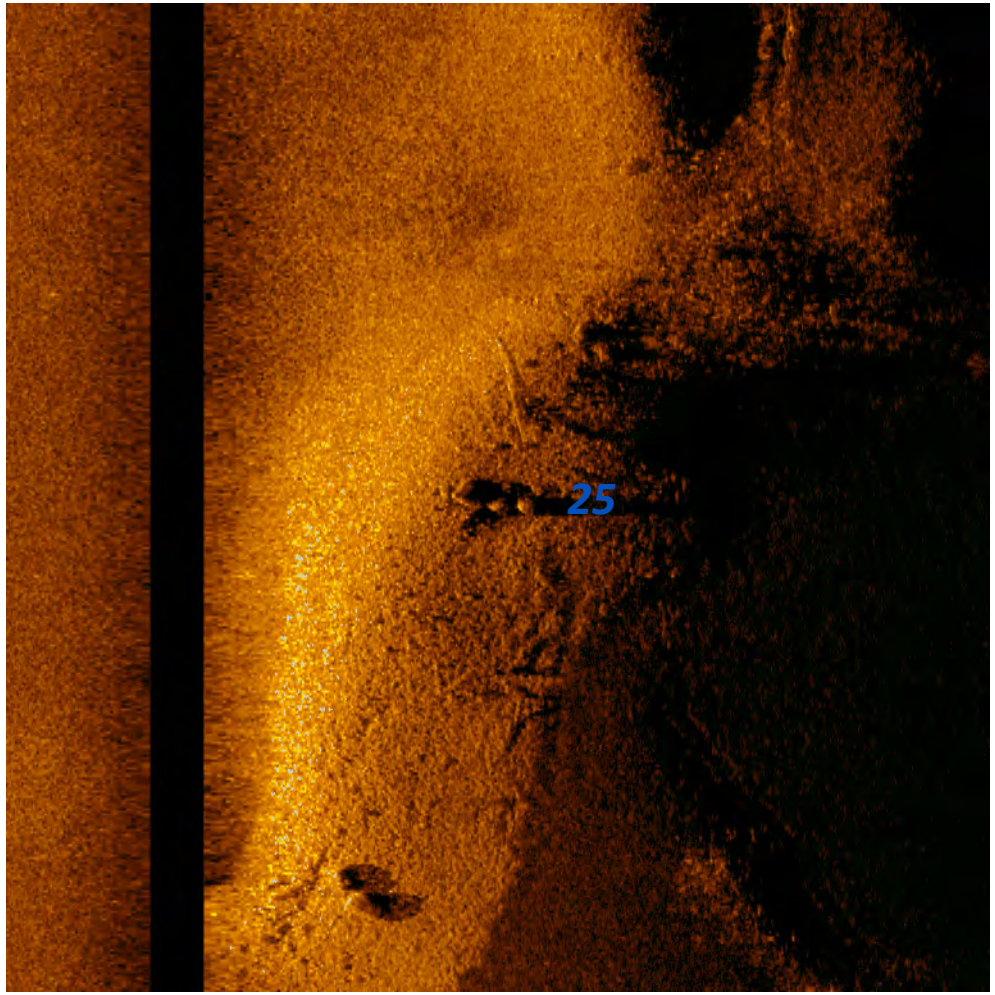


Marine Professionals Since 1919
BRENNAN

Photo ID: 25
Easting (X) 1483719.33
Northing (Y) 632660.48
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

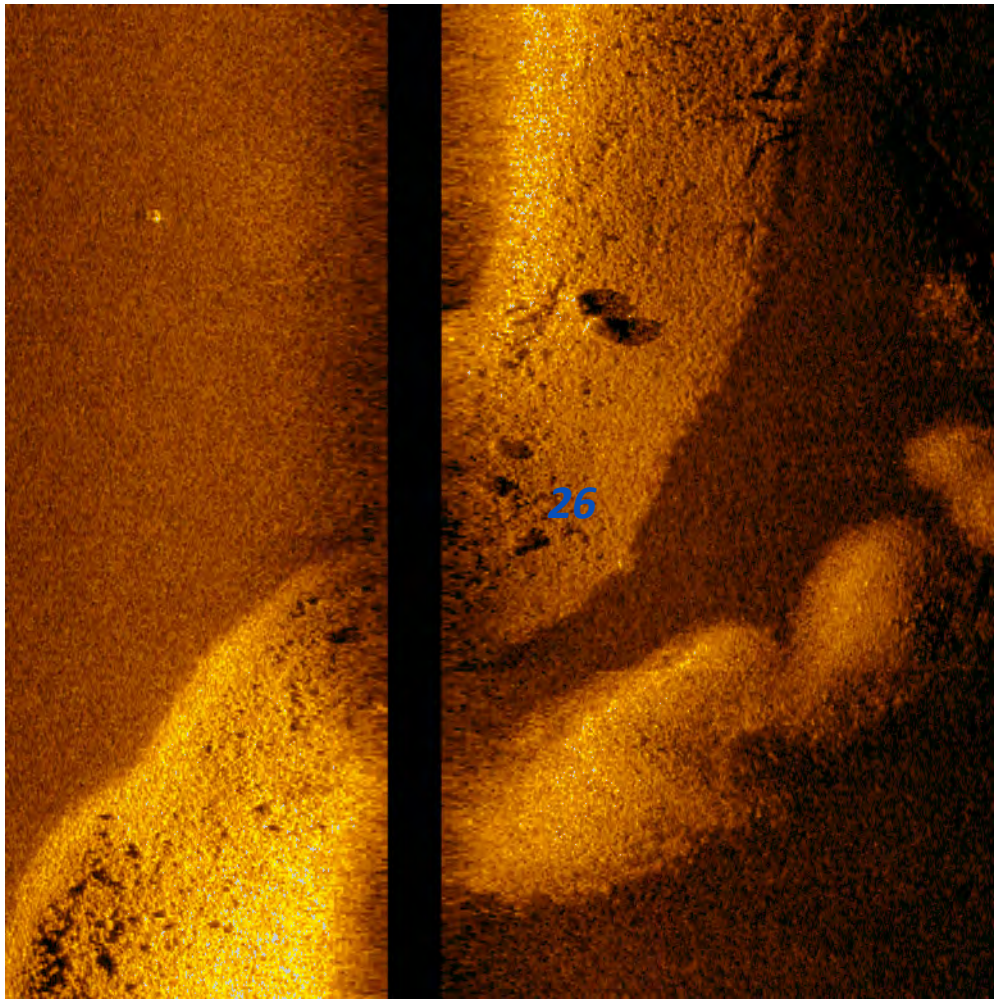


Marine Professionals Since 1919
BRENNAN

Photo ID: 26
Easting (X) 1483717.13
Northing (Y) 632584.78
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

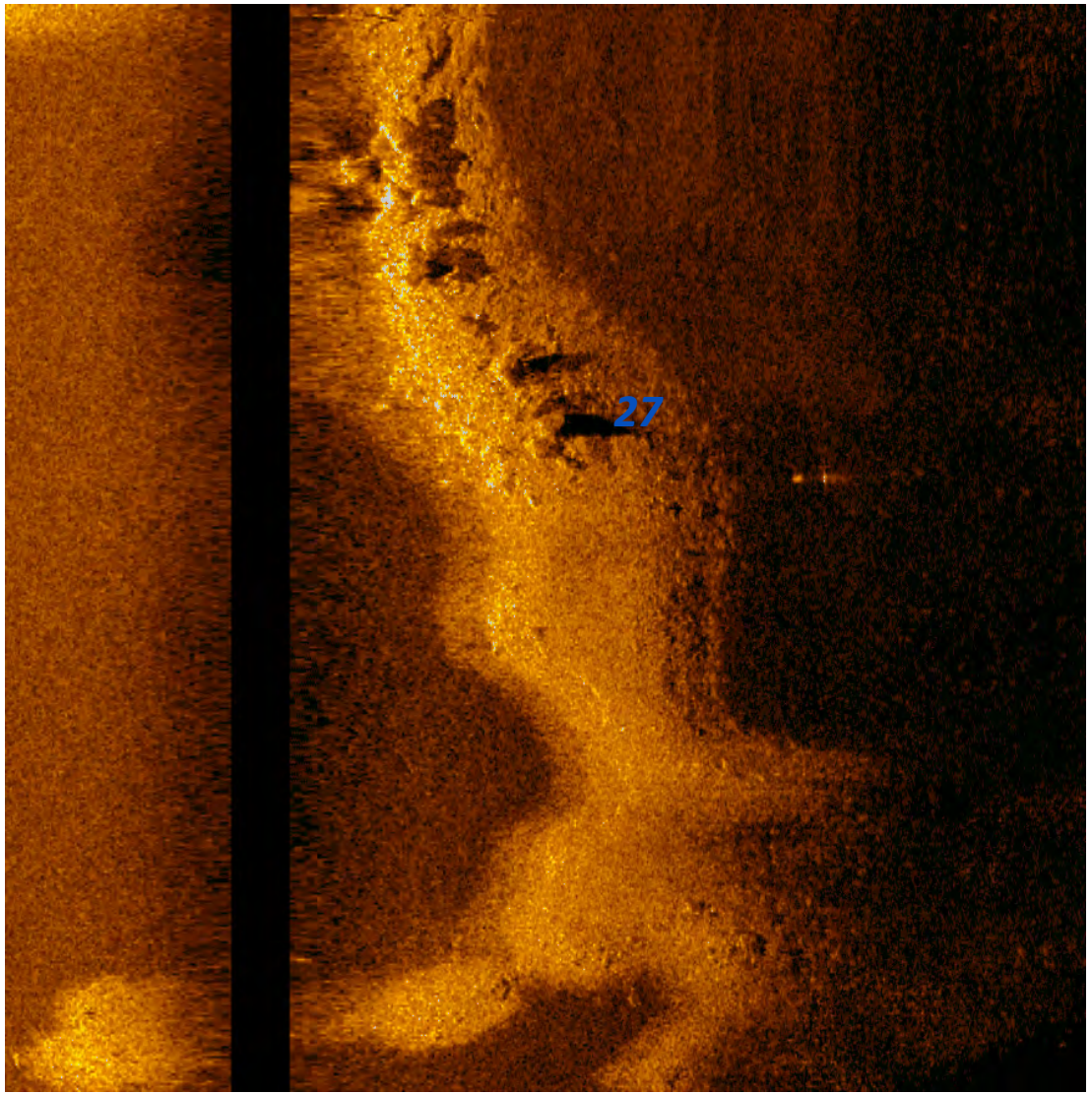


Marine Professionals Since 1919
BRENNAN

Photo ID: 27
Easting (X) 1483856.62
Northing (Y) 632998.72
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.20 US ft
- Target Width: 2.22 US ft
- Target Height: 3.77 US ft

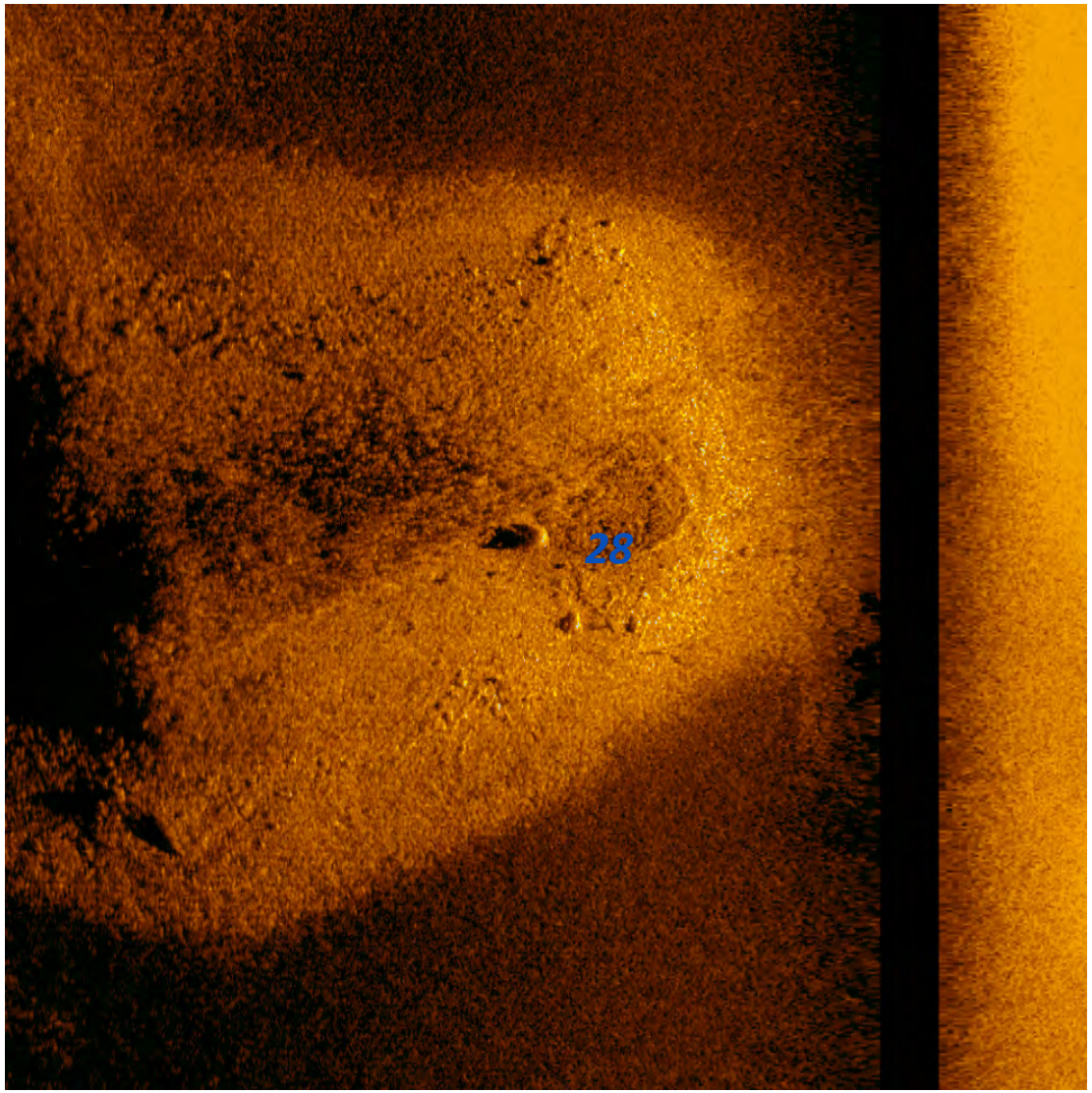


Marine Professionals Since 1919
BRENNAN

Photo ID: 28
Easting (X) 1483801.51
Northing (Y) 632739.97
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

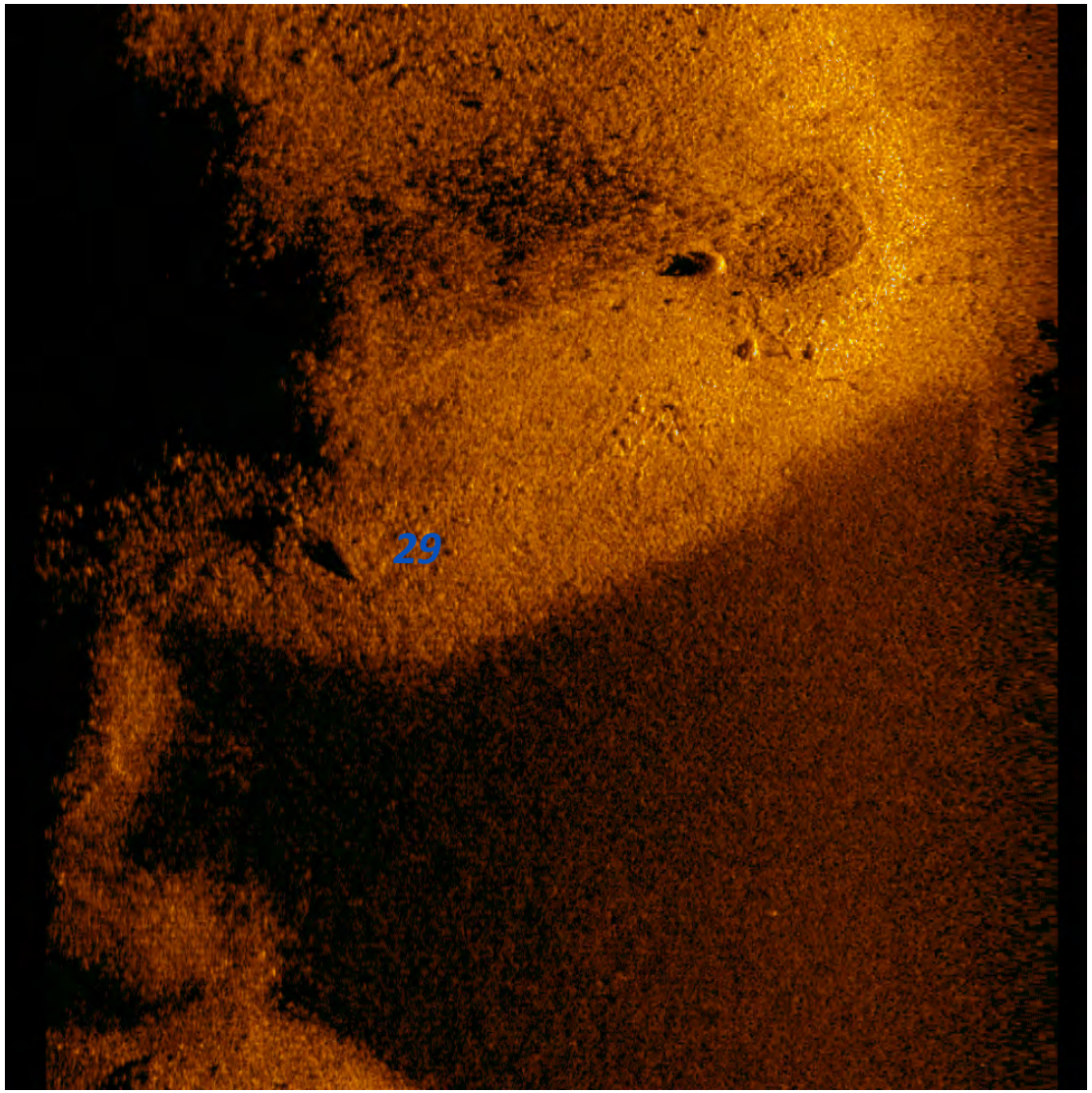


Marine Professionals Since 1919
BRENNAN

Photo ID: 29
Easting (X) 1483775.06
Northing (Y) 632786.68
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

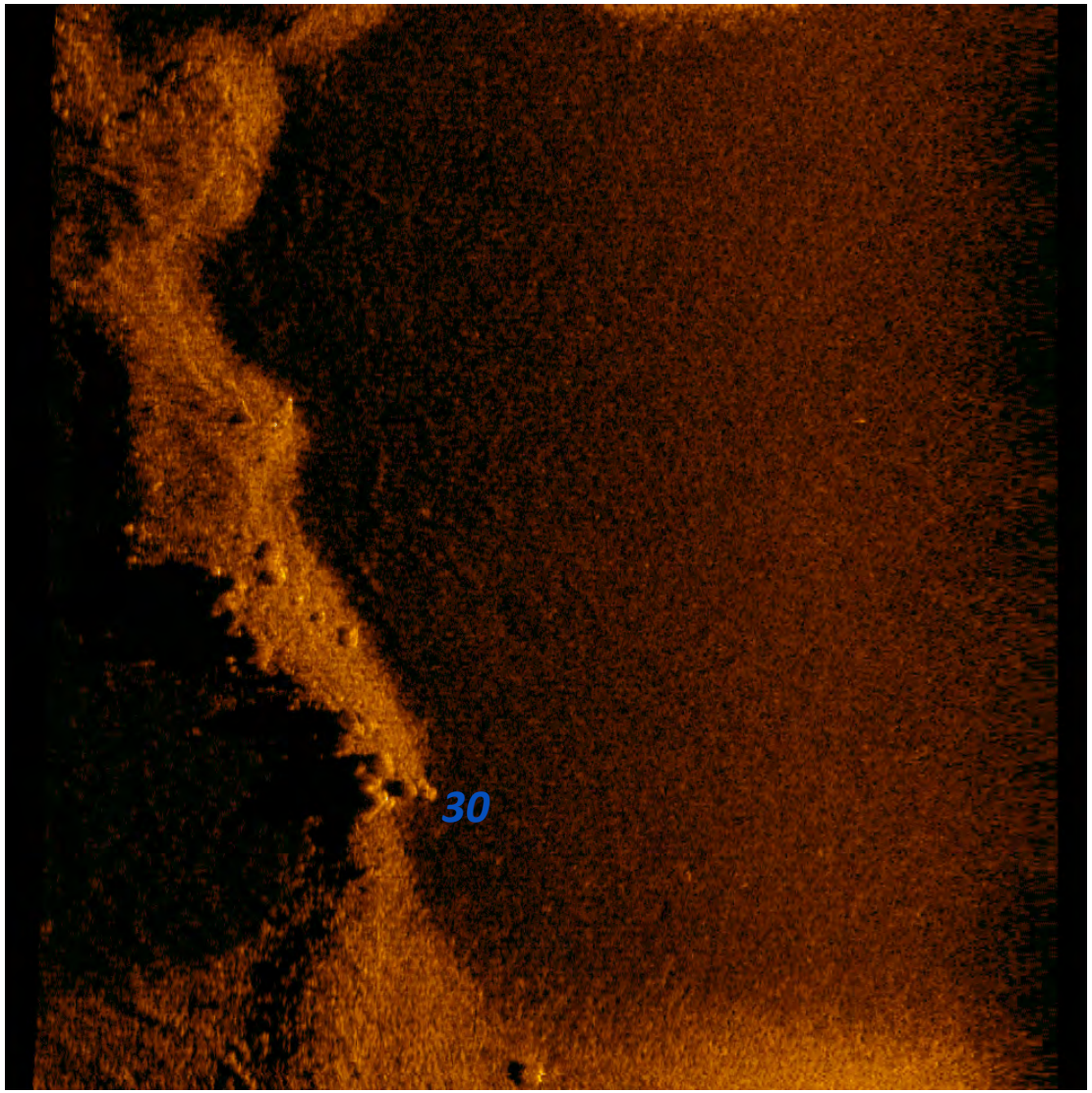


Marine Professionals Since 1919
BRENNAN

Photo ID: 30
Easting (X) 1483876.28
Northing (Y) 633018.45
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

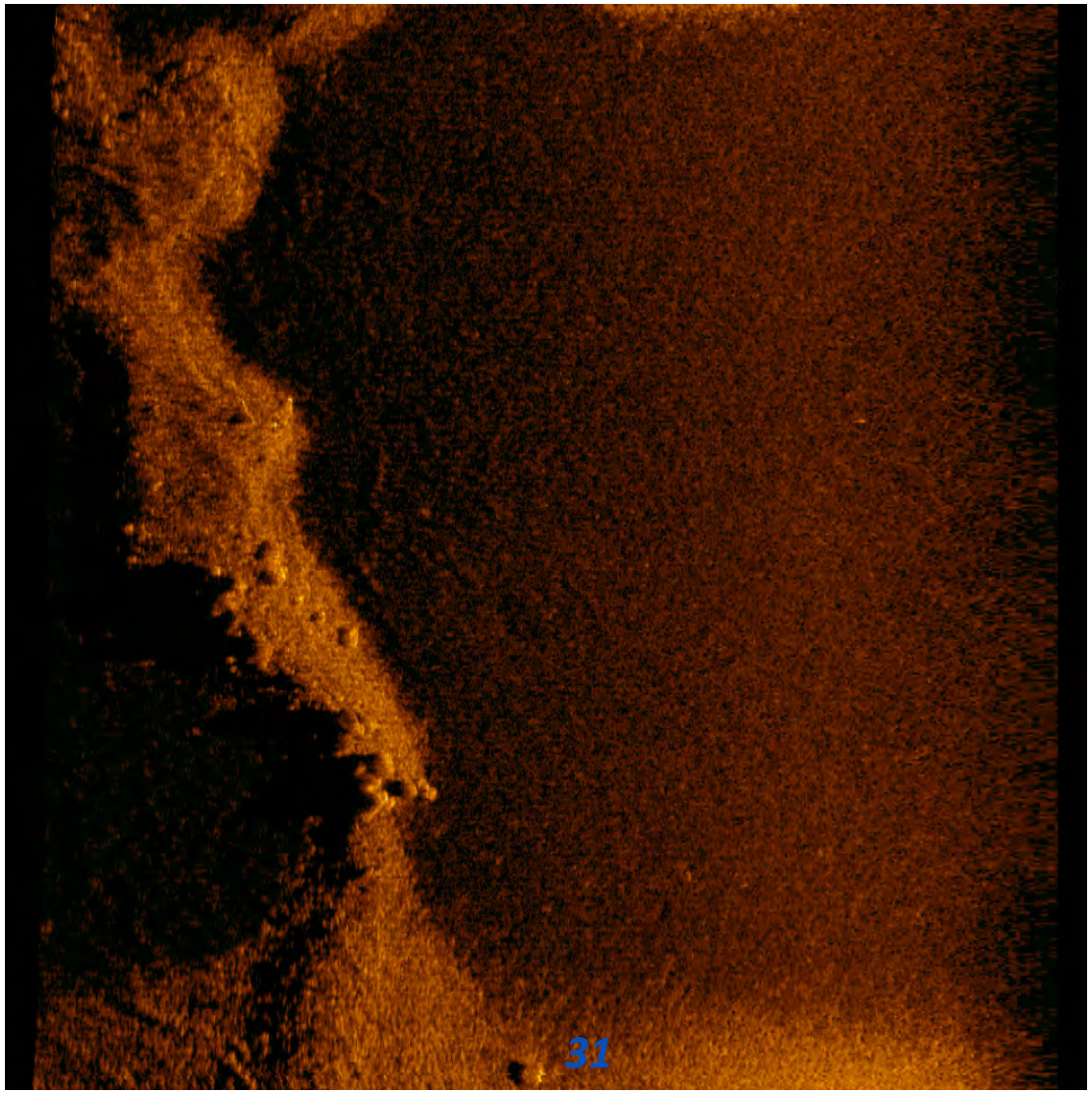


Marine Professionals Since 1919
BRENNAN

Photo ID: 31
Easting (X) 1483901.65
Northing (Y) 633039.74
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

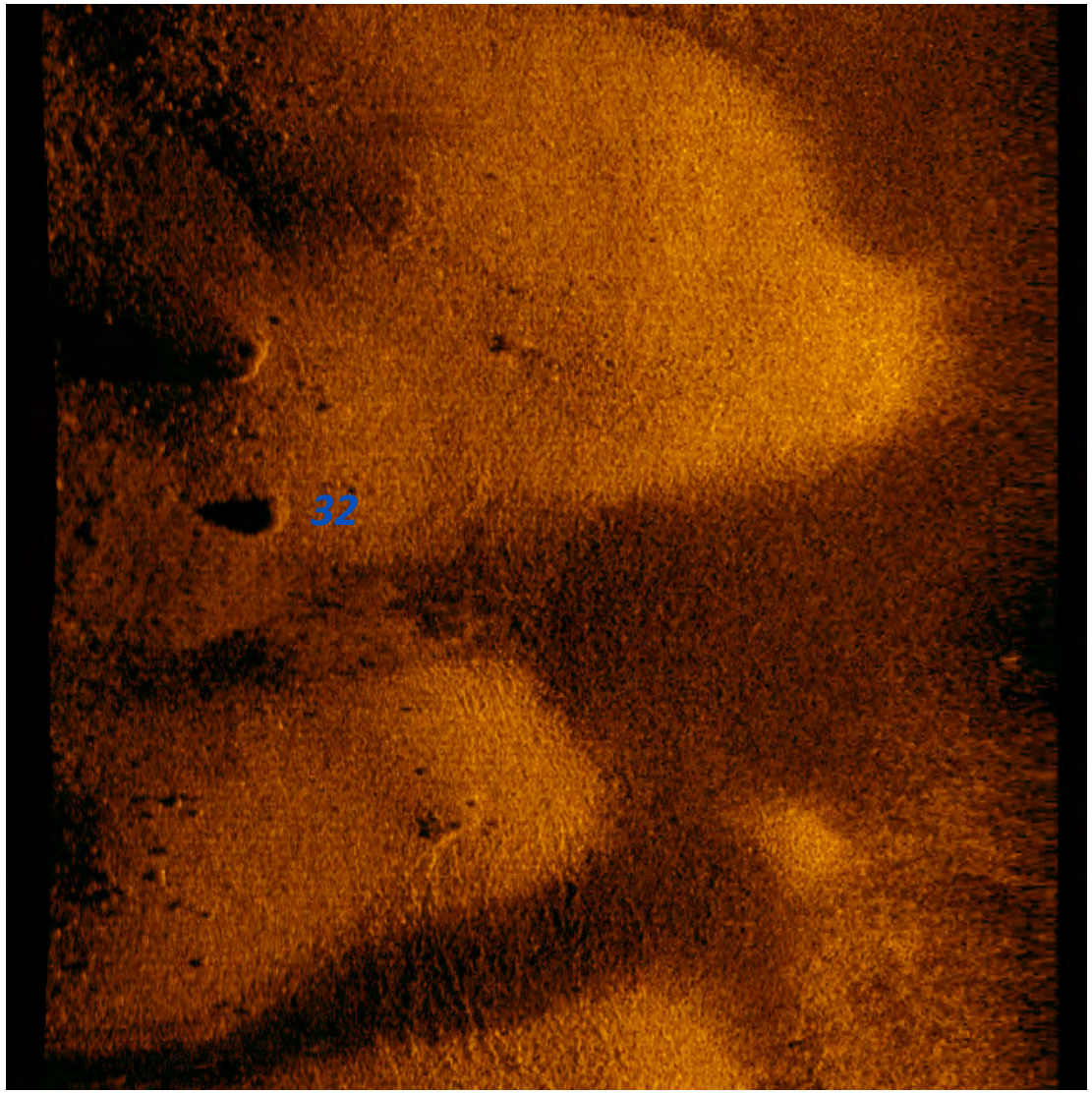


Marine Professionals Since 1919
BRENNAN

Photo ID: 32
Easting (X) 1483822.45
Northing (Y) 632301.6
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.76 US ft
- Target Width: 1.67 US ft
- Target Height: 2.44 US ft

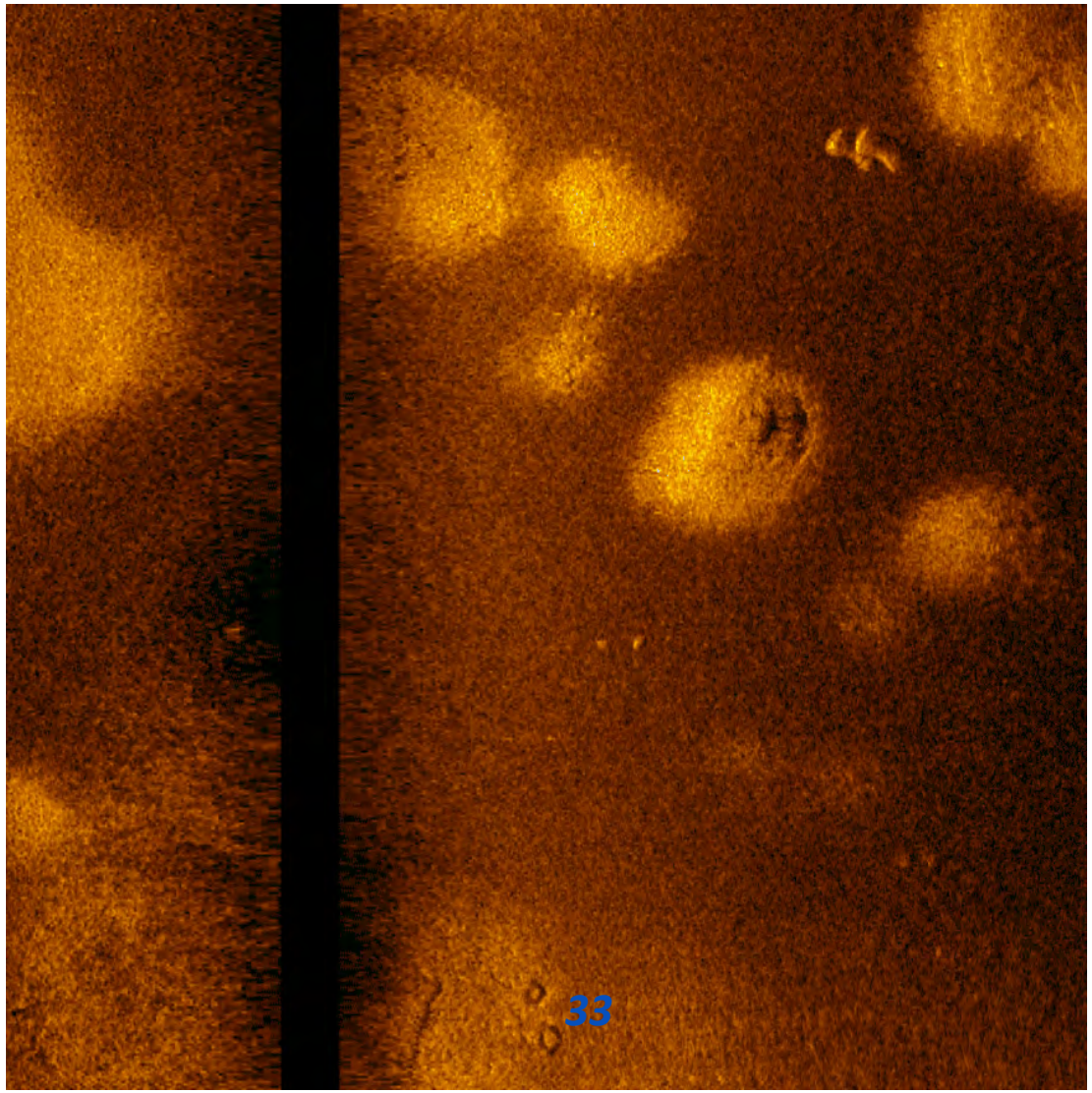


Marine Professionals Since 1919
BRENNAN

Photo ID: 33
Easting (X) 1483692.42
Northing (Y) 632290.8
Description: Potential Tire/ Tires

Dimensions and attributes

- Target Length: 1.94 US ft
- Target Width: 1.66 US ft
- Target Height: 0.62 US ft

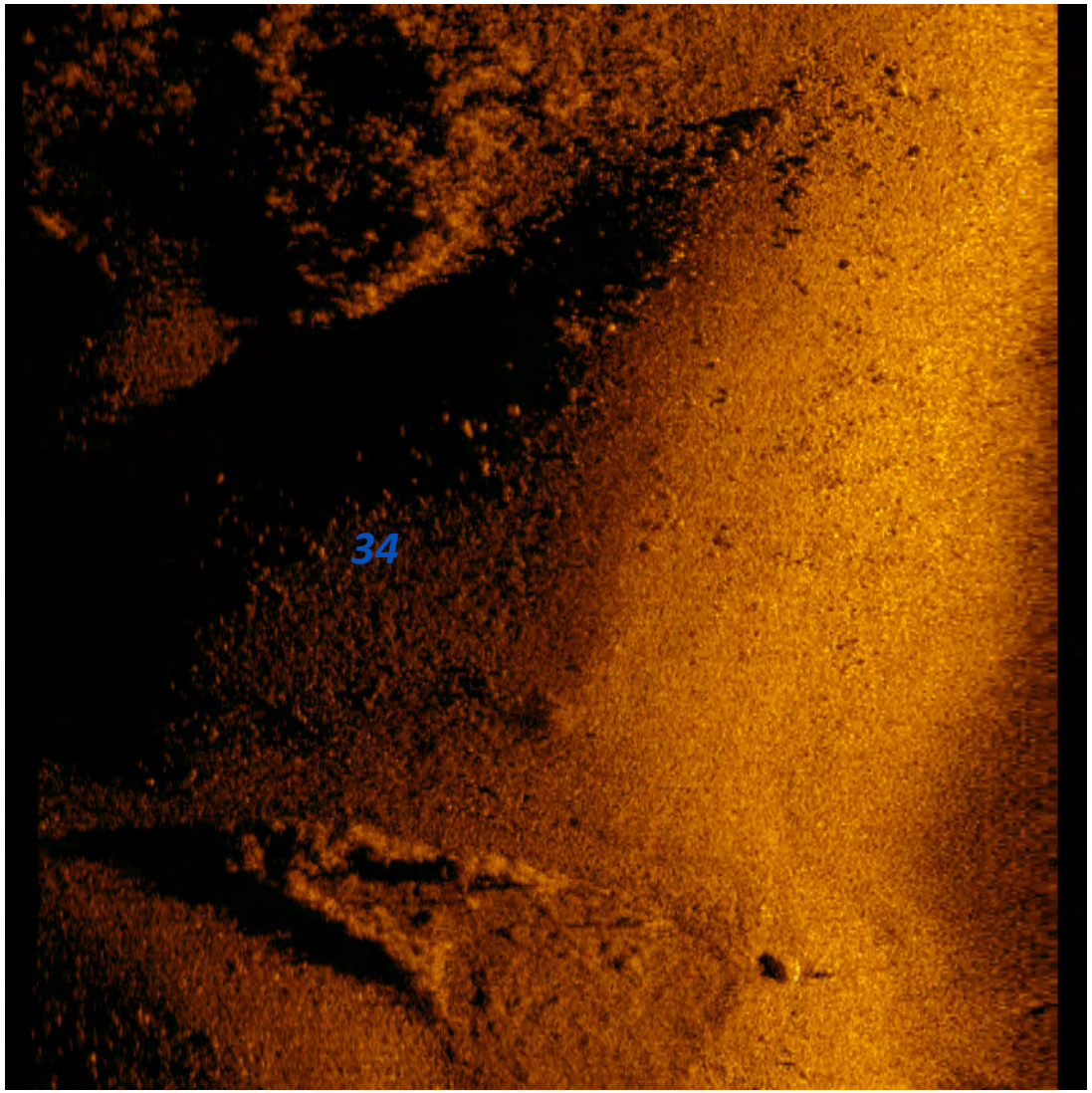


Marine Professionals Since 1919
BRENNAN

Photo ID: 34
Easting (X) 1483878.58
Northing (Y) 632430.67
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

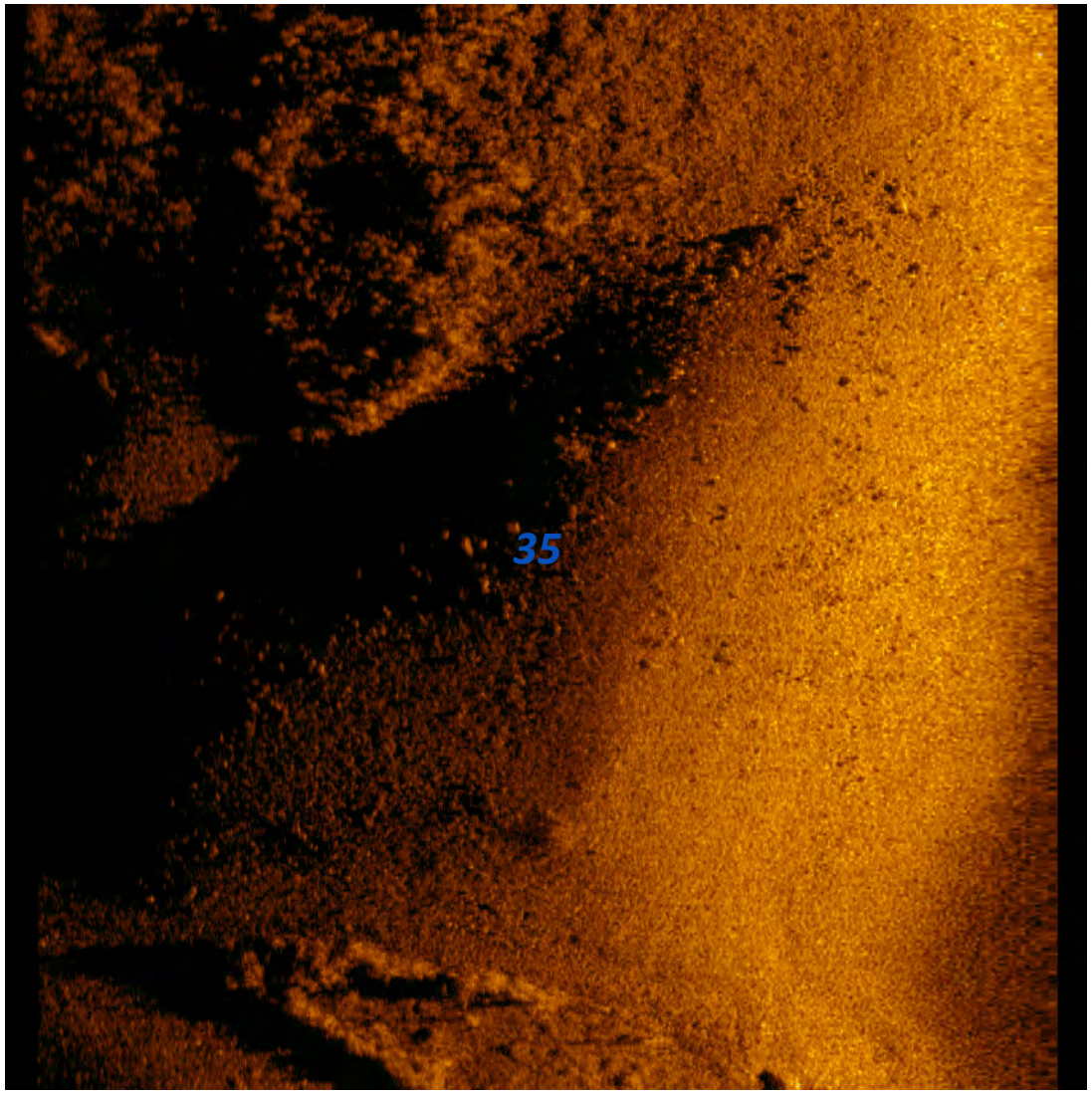


Marine Professionals Since 1919
BRENNAN

Photo ID: 35
Easting (X) 1483857.83
Northing (Y) 632452.74
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

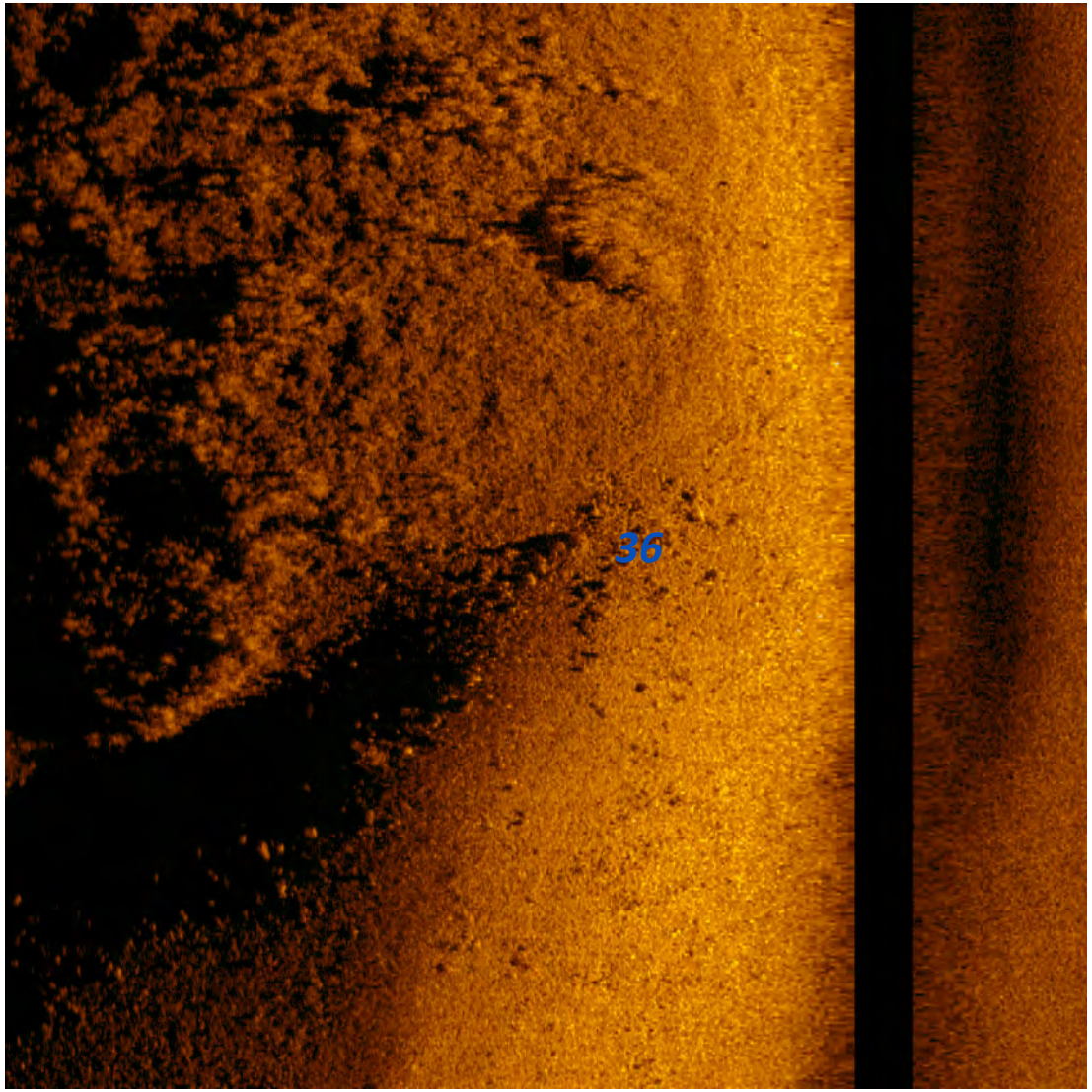


Marine Professionals Since 1919
BRENNAN

Photo ID: 36
Easting (X) 1483840.43
Northing (Y) 632495.48
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

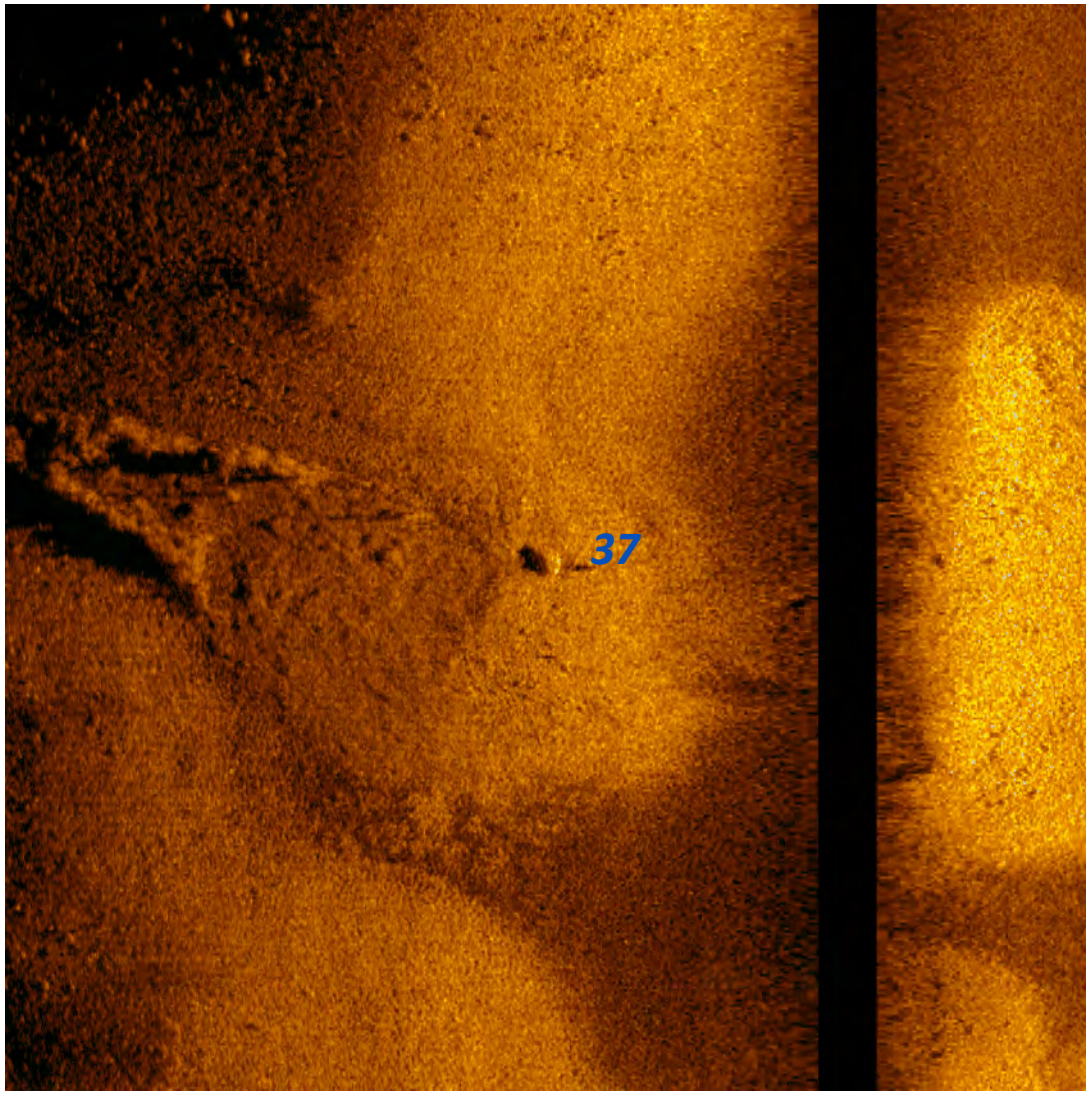


Marine Professionals Since 1919
BRENNAN

Photo ID: 37
Easting (X) 1483803.64
Northing (Y) 632408.27
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.57 US ft
- Target Width: 2.01 US ft
- Target Height: 1.17 US ft

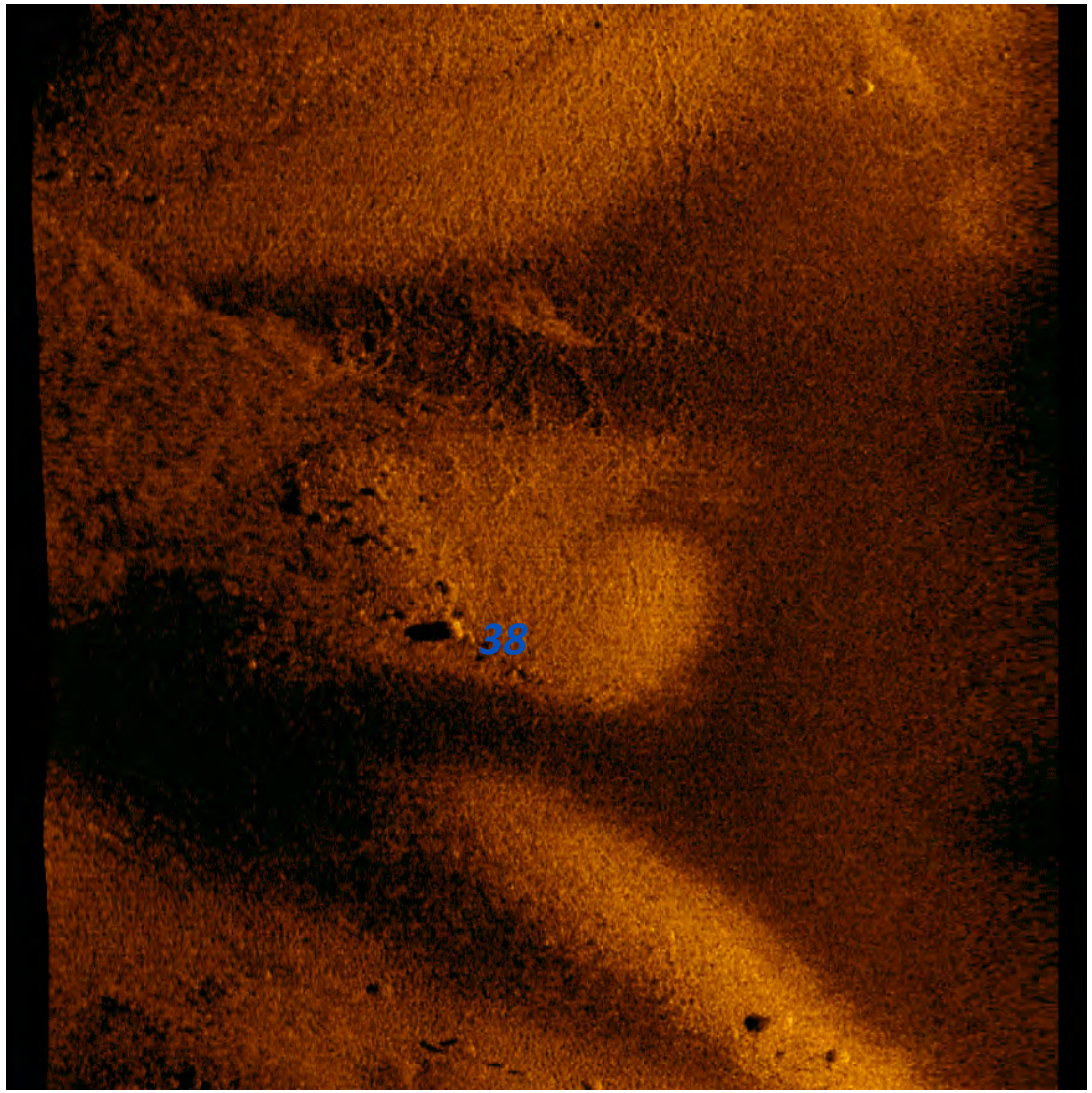


Marine Professionals Since 1919
BRENNAN

Photo ID: 38
Easting (X) 1484044.07
Northing (Y) 632915.11
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

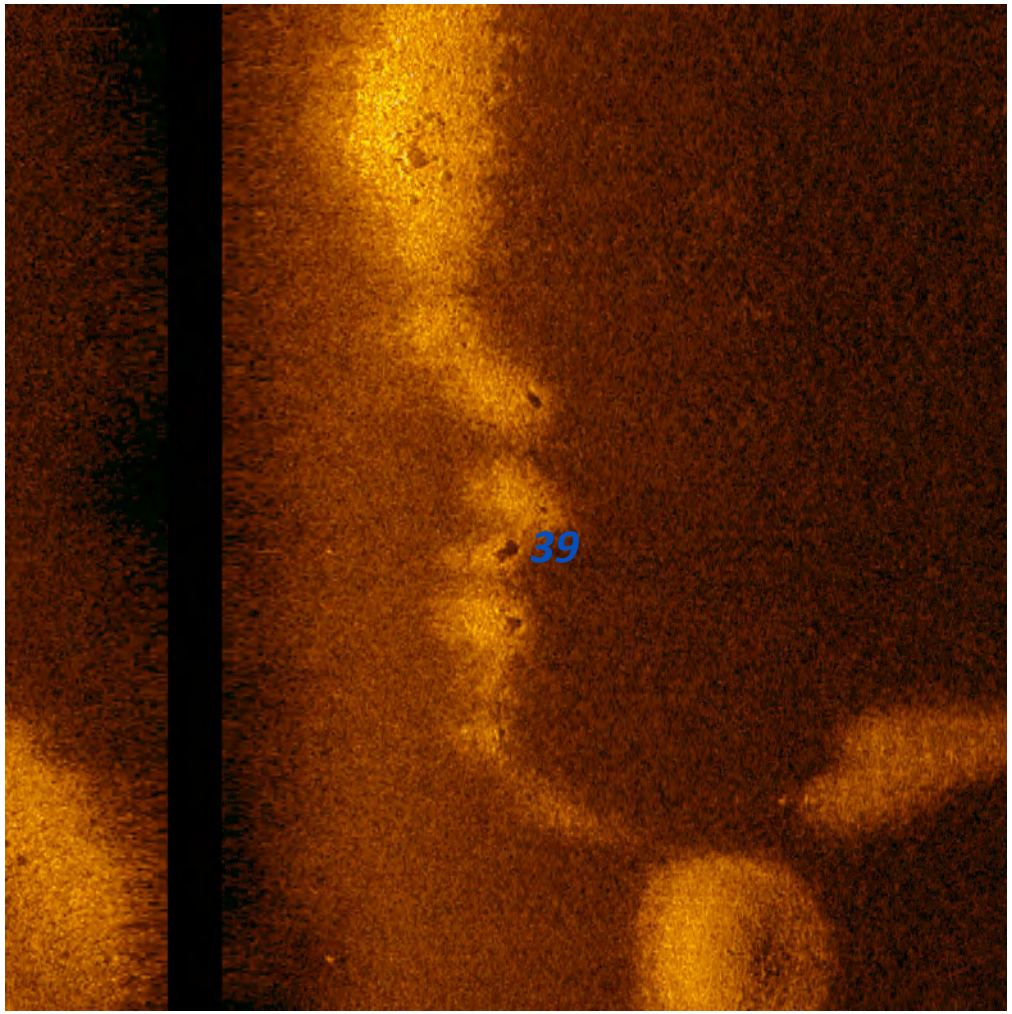


Marine Professionals Since 1919
BRENNAN

Photo ID: 39
Easting (X) 1483931.41
Northing (Y) 632922.04
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

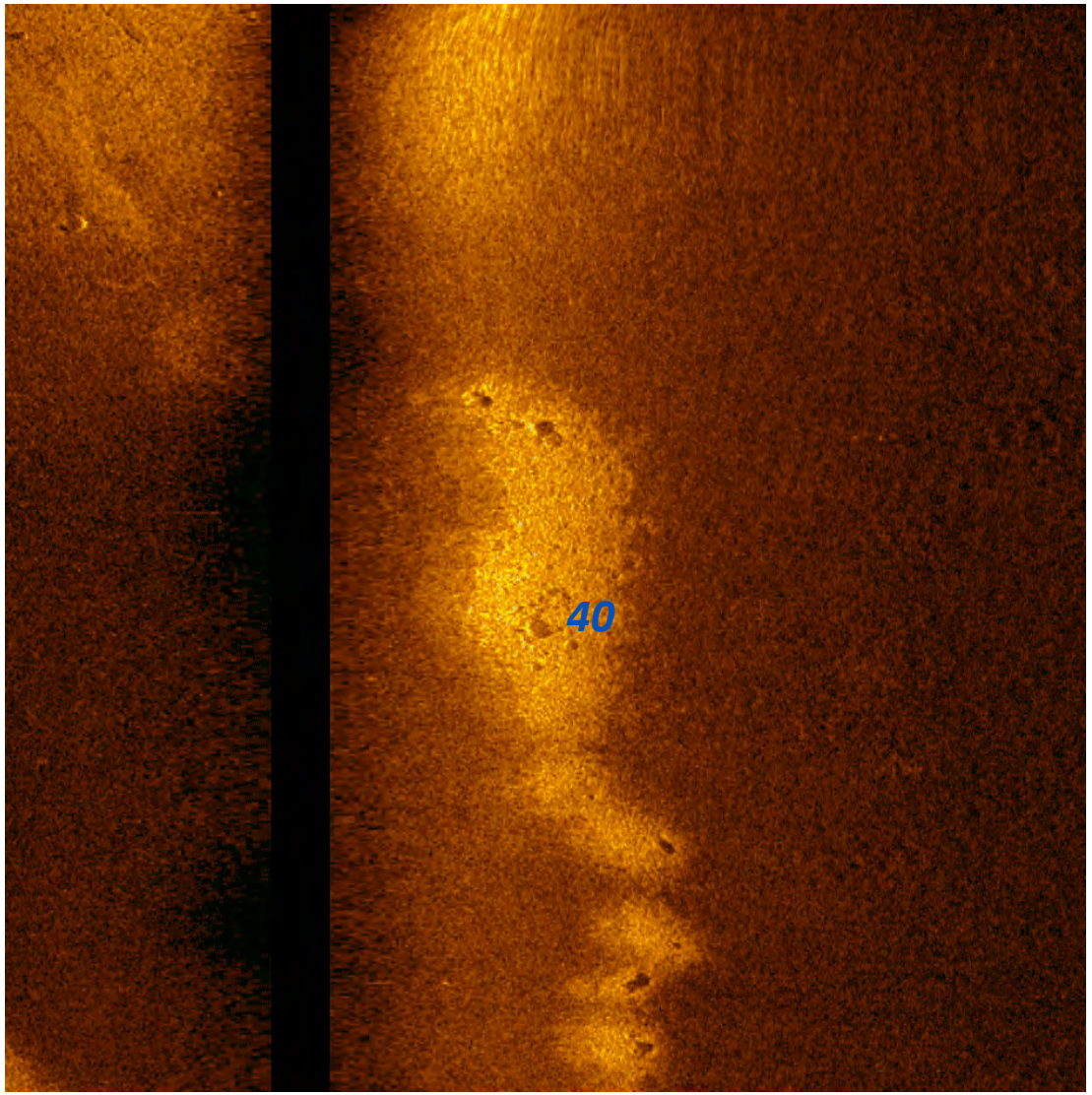


Marine Professionals Since 1919
BRENNAN

Photo ID: 40
Easting (X) 1483955.51
Northing (Y) 632957.8
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

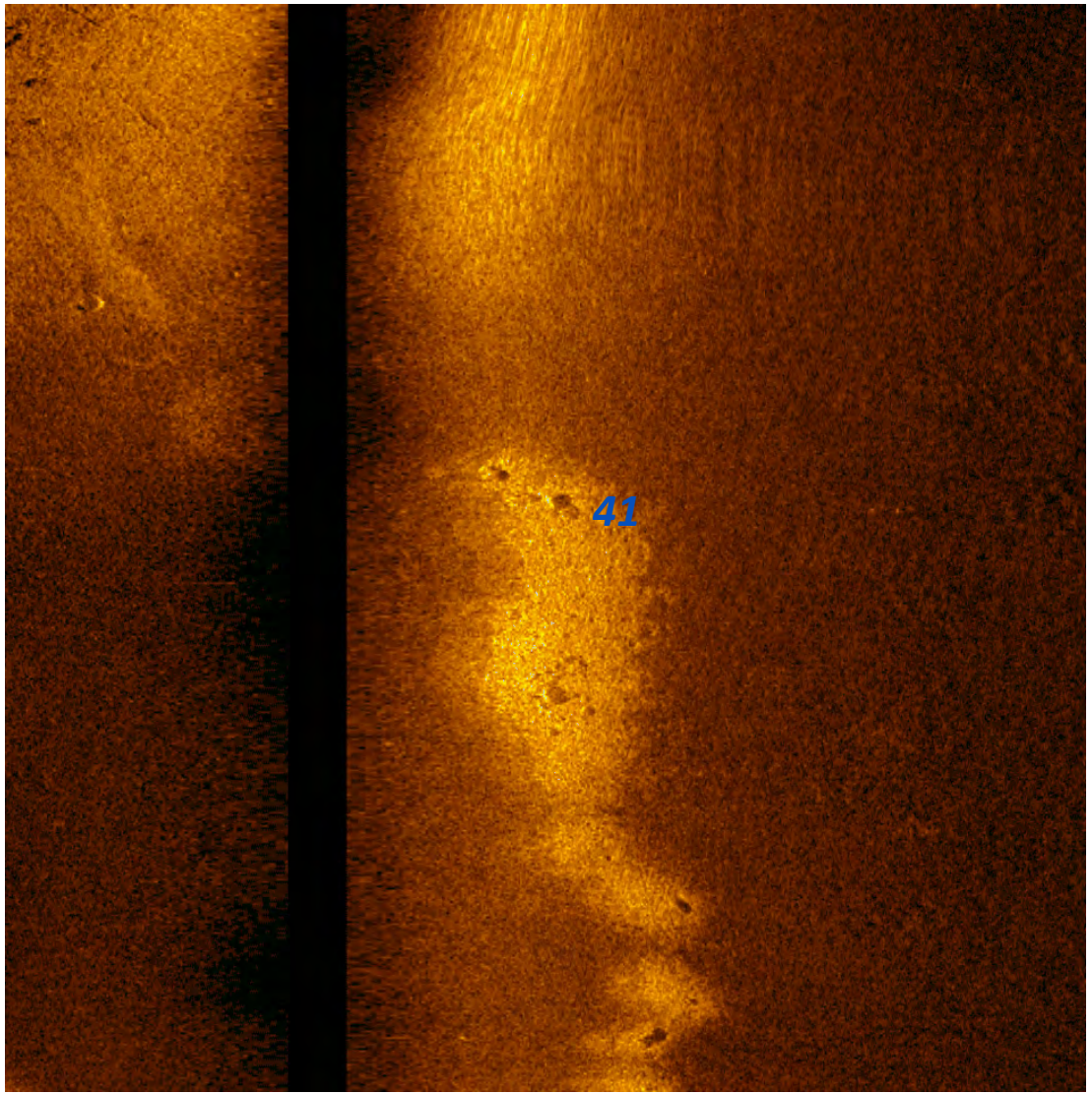


Marine Professionals Since 1919
BRENNAN

Photo ID: 41
Easting (X) 1483961.81
Northing (Y) 632975.11
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

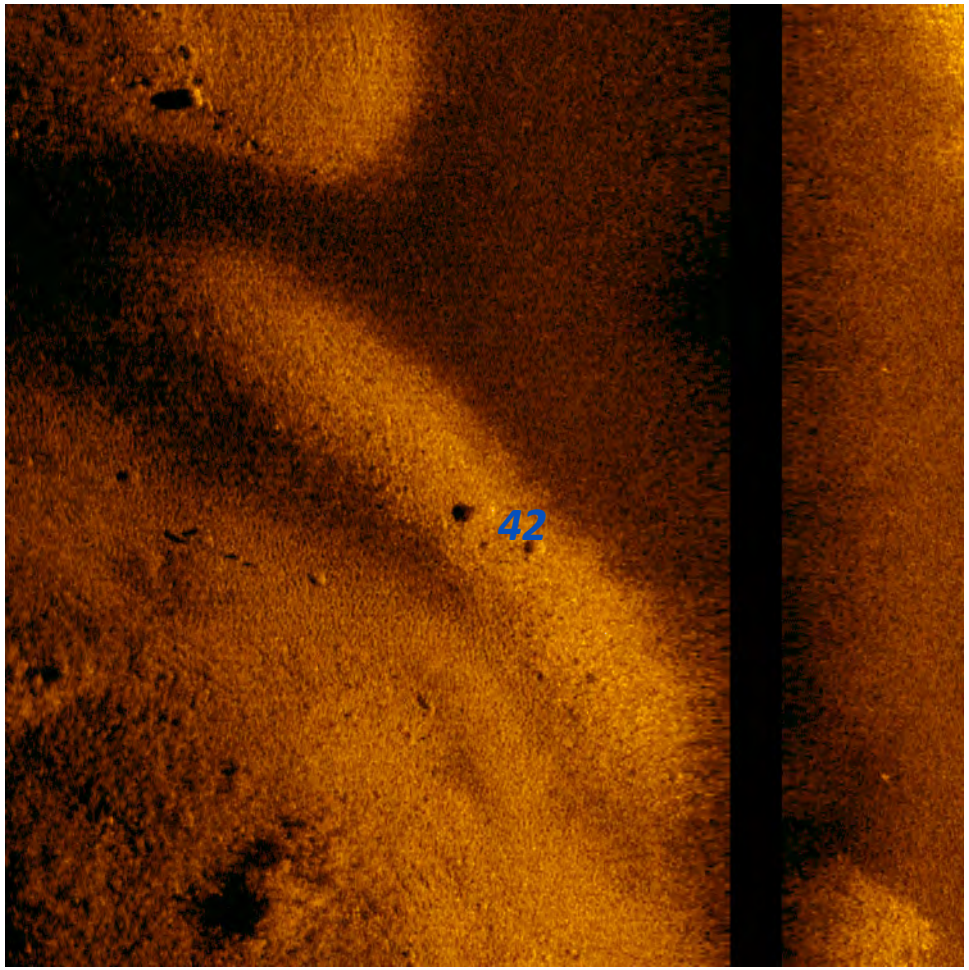


Marine Professionals Since 1919
BRENNAN

Photo ID: 42
Easting (X) 1483990.82
Northing (Y) 632878.24
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

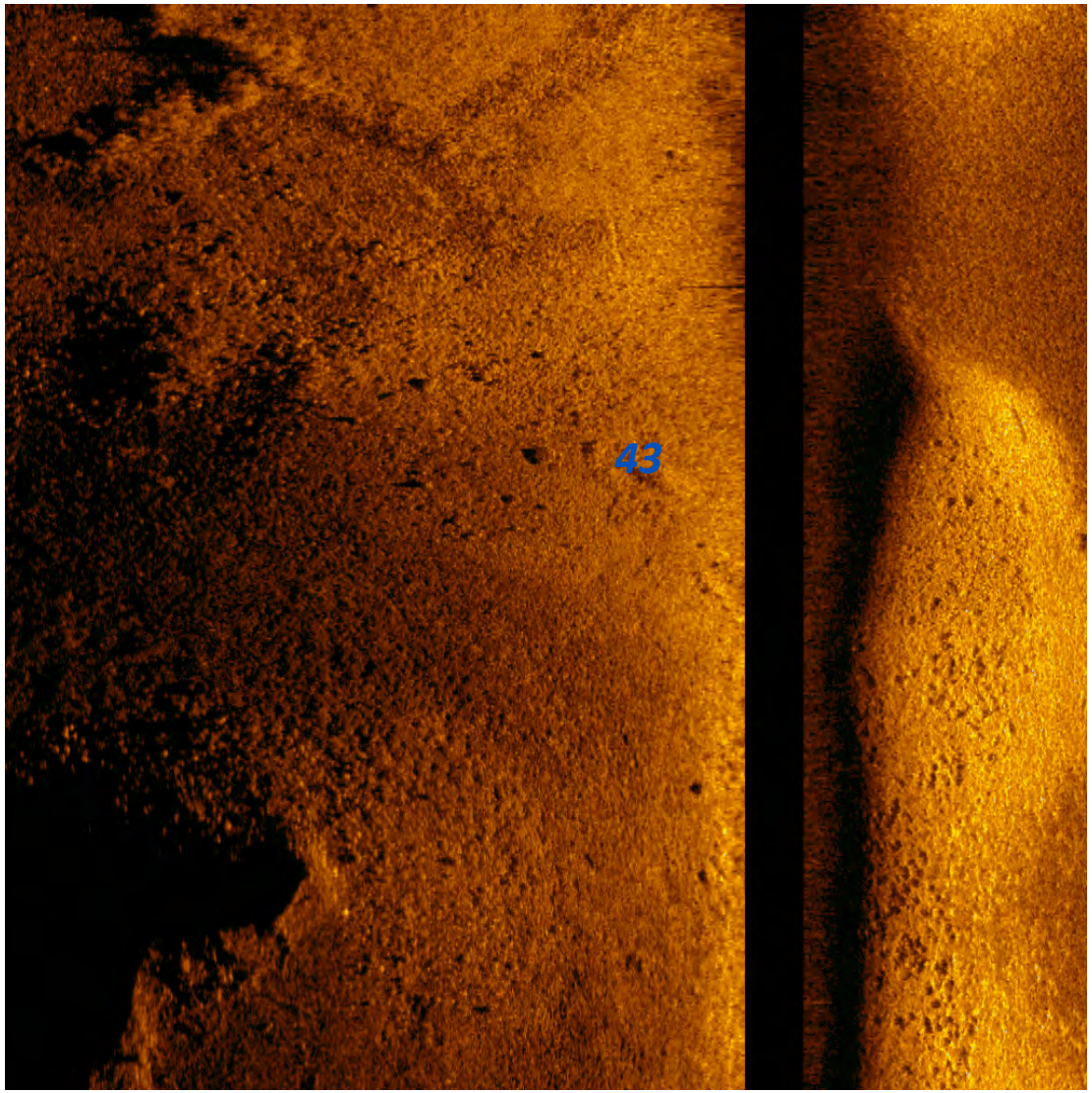


Marine Professionals Since 1919
BRENNAN

Photo ID: 43
Easting (X) 1483934.16
Northing (Y) 632748.68
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

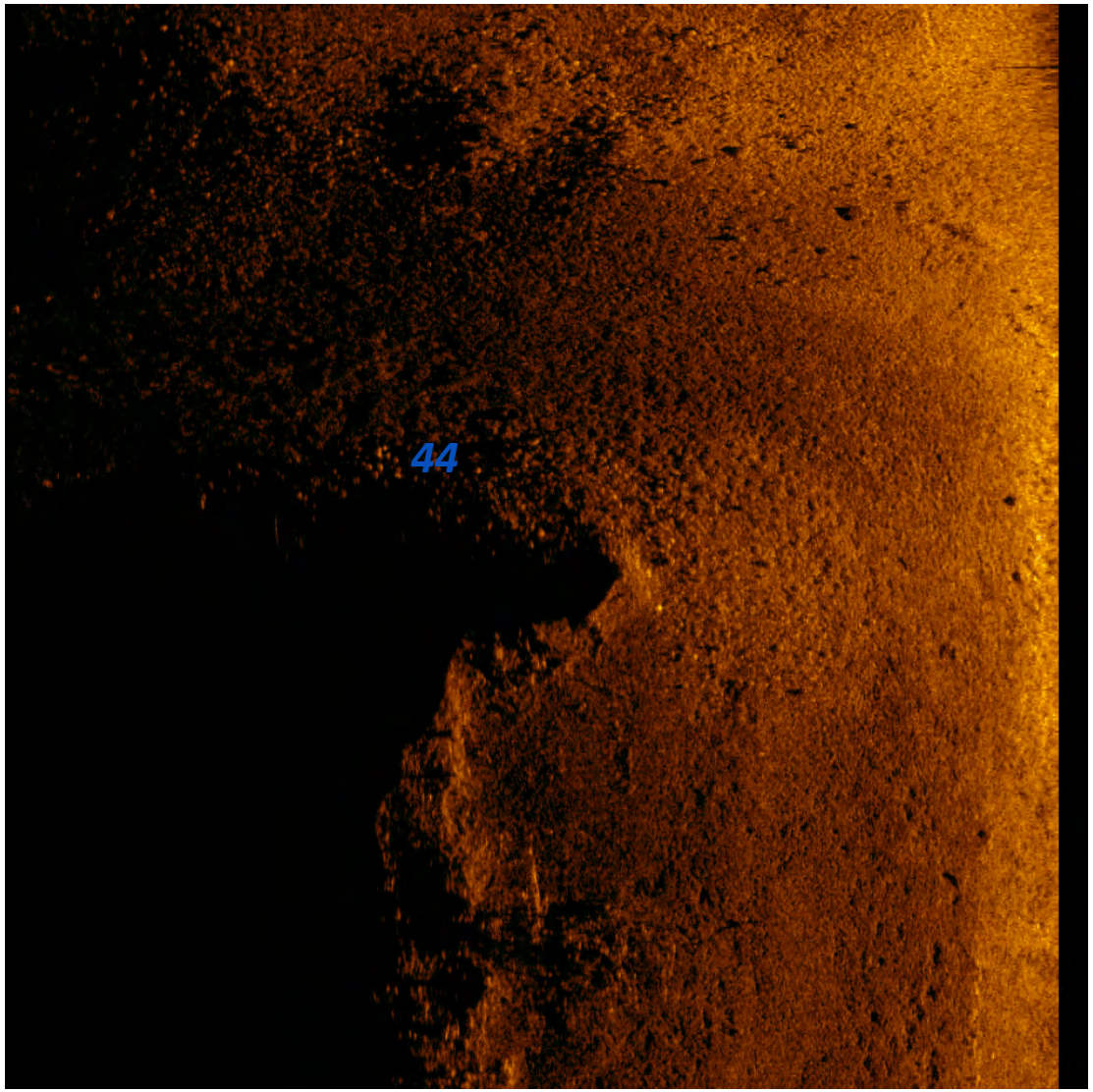


Marine Professionals Since 1919
BRENNAN

Photo ID: 44
Easting (X) 1483972.79
Northing (Y) 632698.23
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

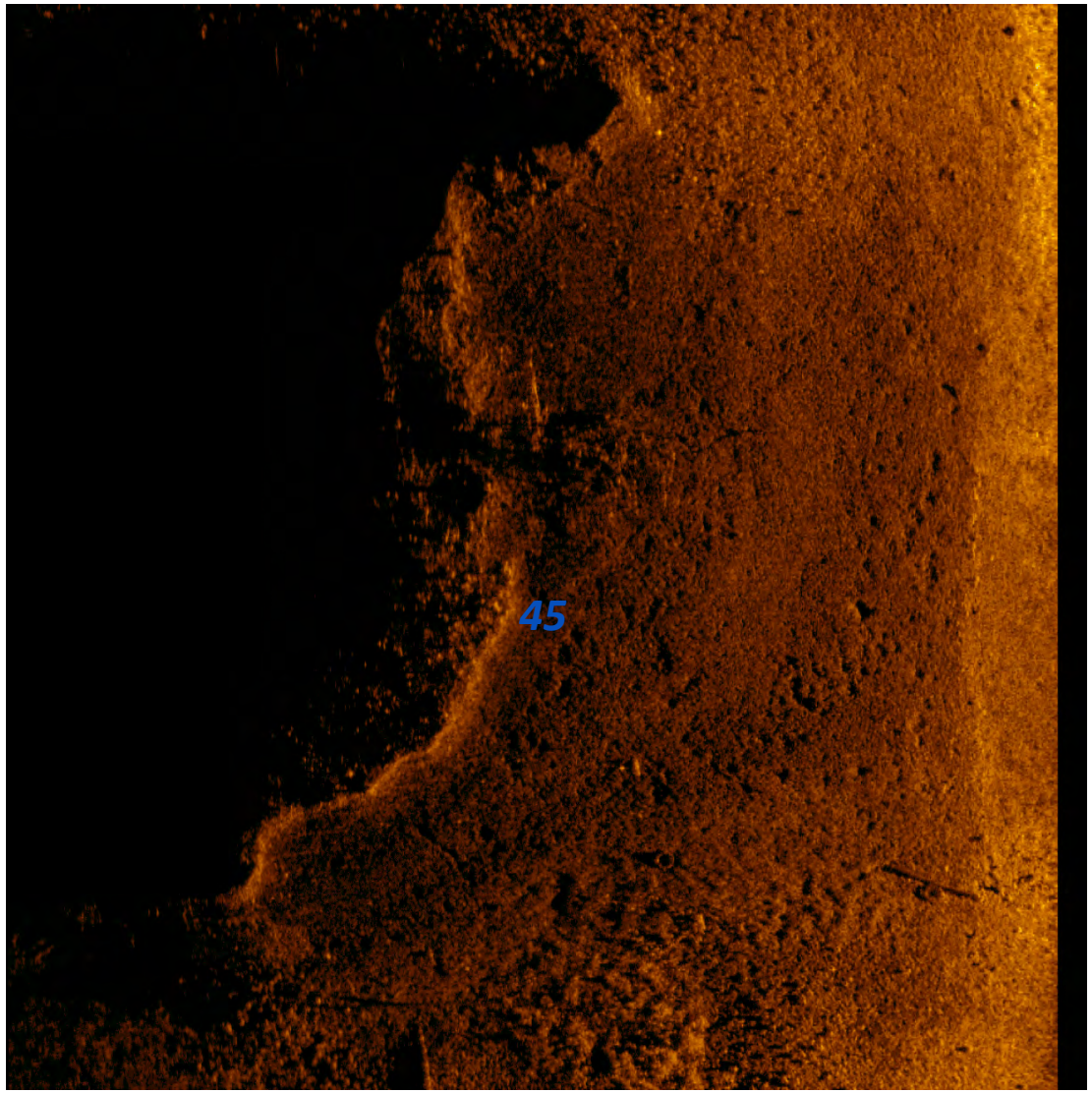


Marine Professionals Since 1919
BRENNAN

Photo ID: 45
Easting (X) 1483931.97
Northing (Y) 632641.47
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

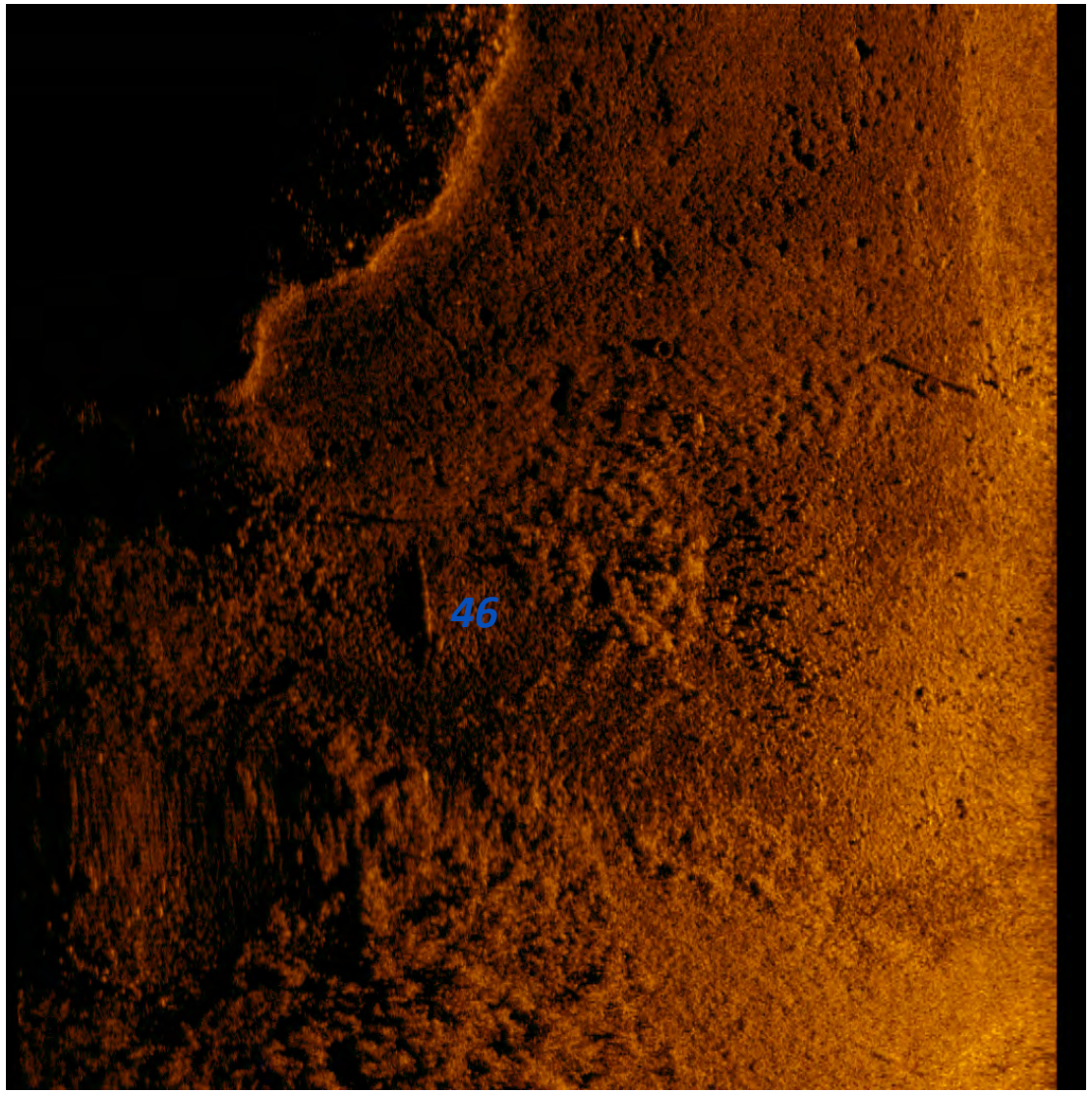


Marine Professionals Since 1919
BRENNAN

Photo ID: 46
Easting (X) 1483912.71
Northing (Y) 632592.5
Description: Potential Log

Dimensions and attributes

- Target Length: 13.55 US ft
- Target Width: 1.39 US ft
- Target Height: 0.47 US ft

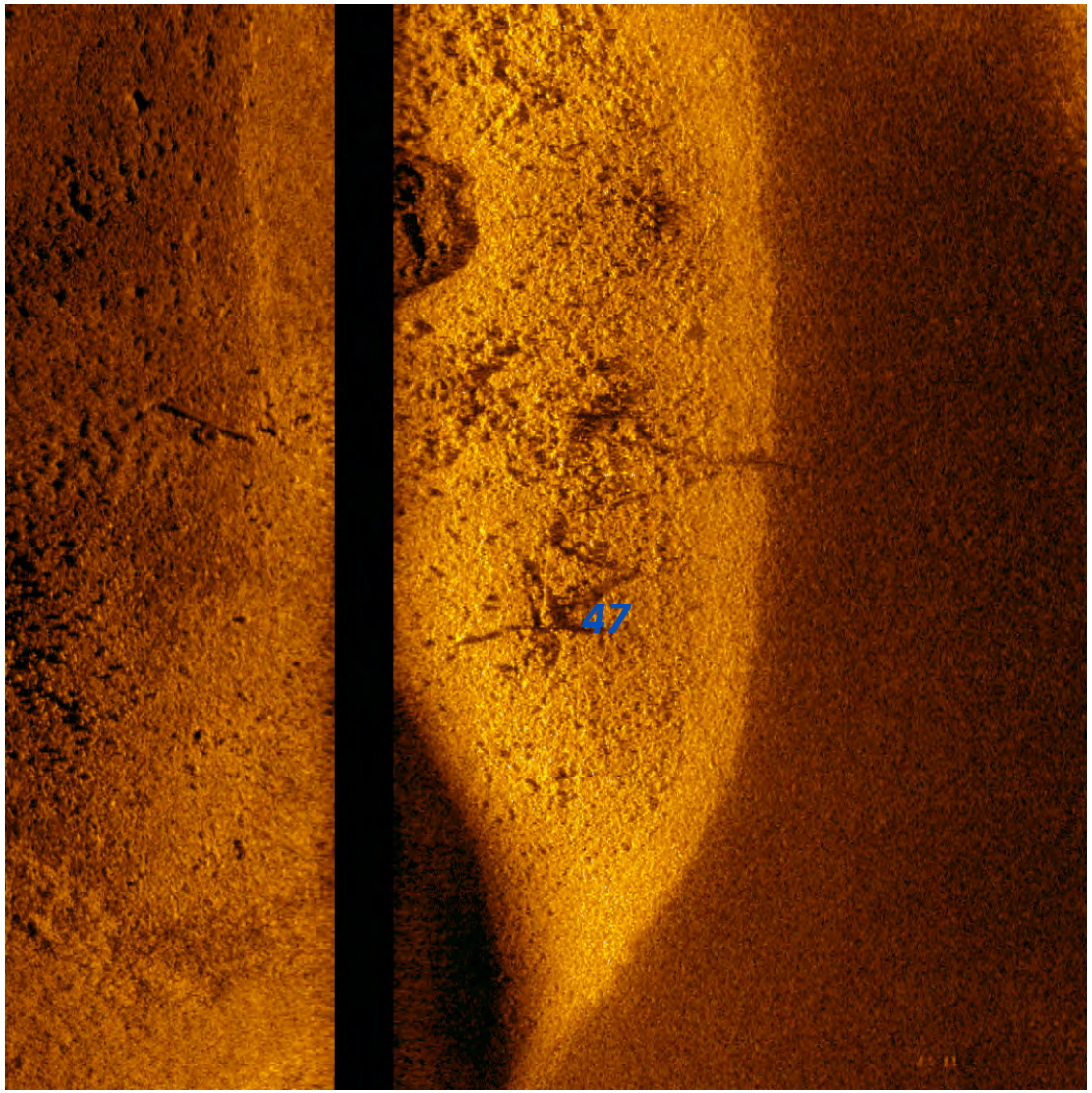


Marine Professionals Since 1919
BRENNAN

Photo ID: 47
Easting (X) 1483829.73
Northing (Y) 632635.8
Description: Potential Log/Standing Tree

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

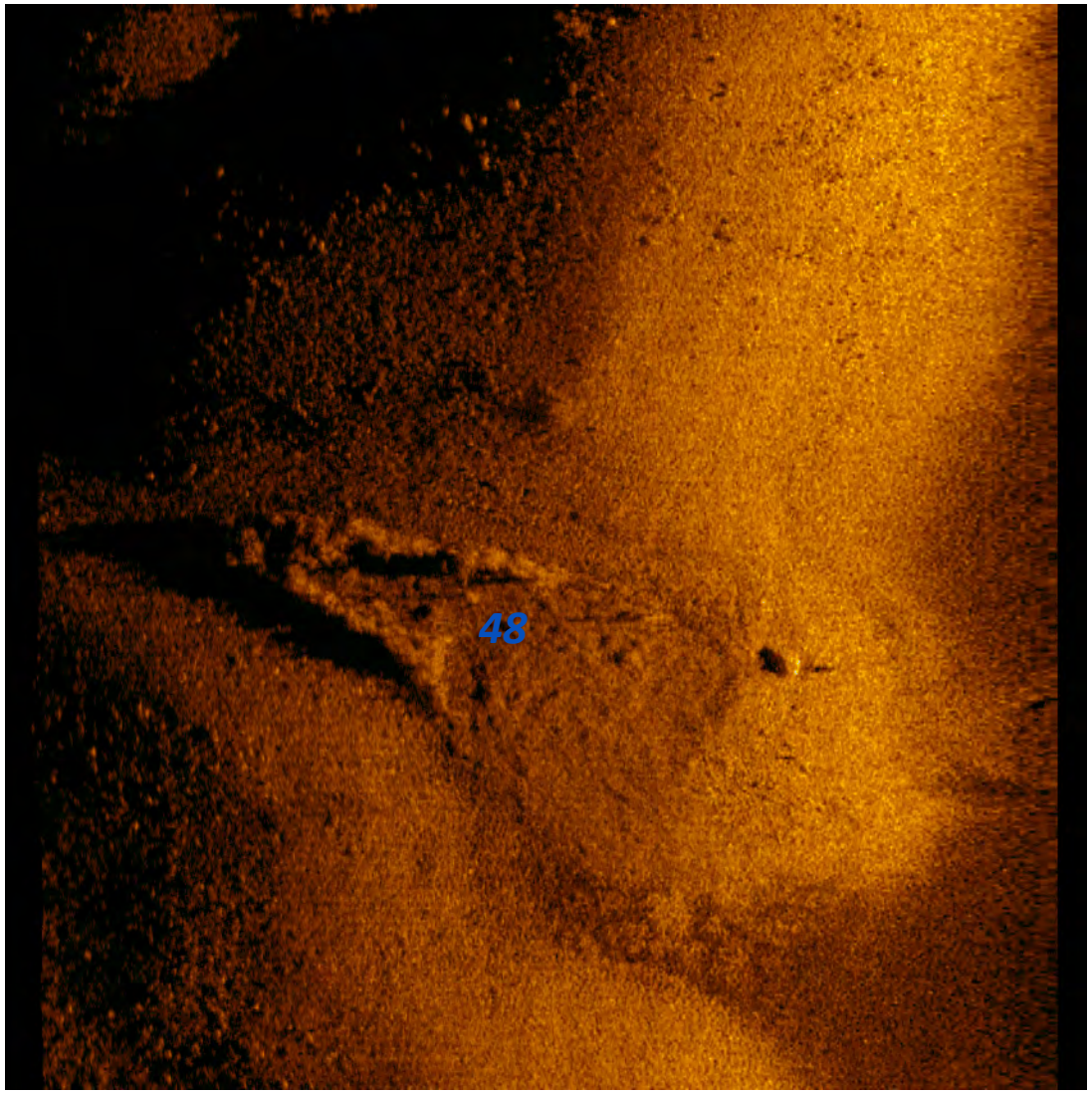


Marine Professionals Since 1919
BRENNAN

Photo ID: 48
Easting (X) 1483860.81
Northing (Y) 632398.34
Description: Potential Logs and/or Boulders

Dimensions and attributes

- Target Length: 25.78 US ft
- Target Width: 1.82 US ft
- Target Height: 4.51 US ft

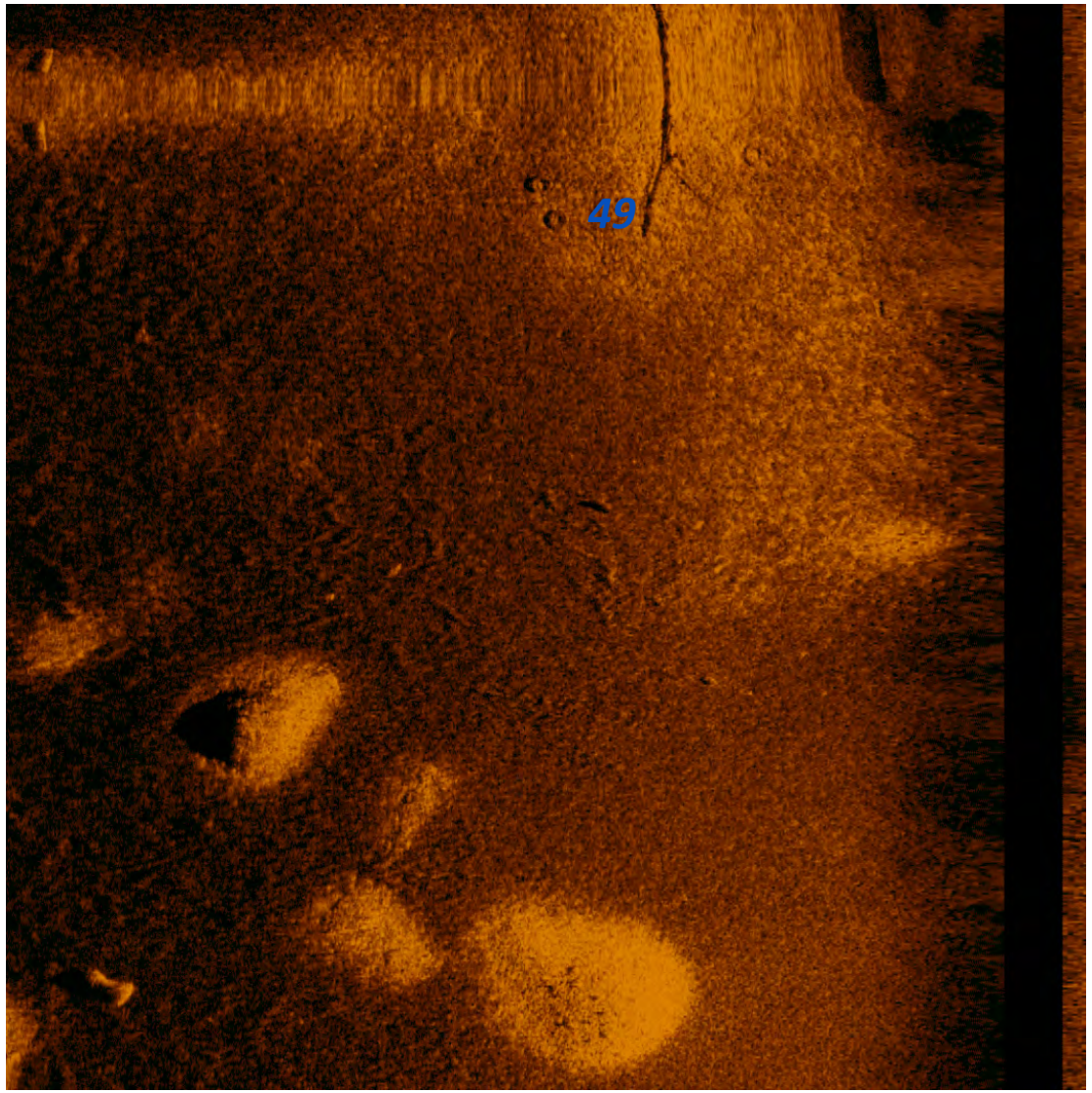


Marine Professionals Since 1919
BRENNAN

Photo ID: 49
Easting (X) 1483695.25
Northing (Y) 632300.47
Description: Potential Tires

Dimensions and attributes

- Target Length: 1.82 US ft
- Target Width: 1.71 US ft
- Target Height: 1.05 US ft

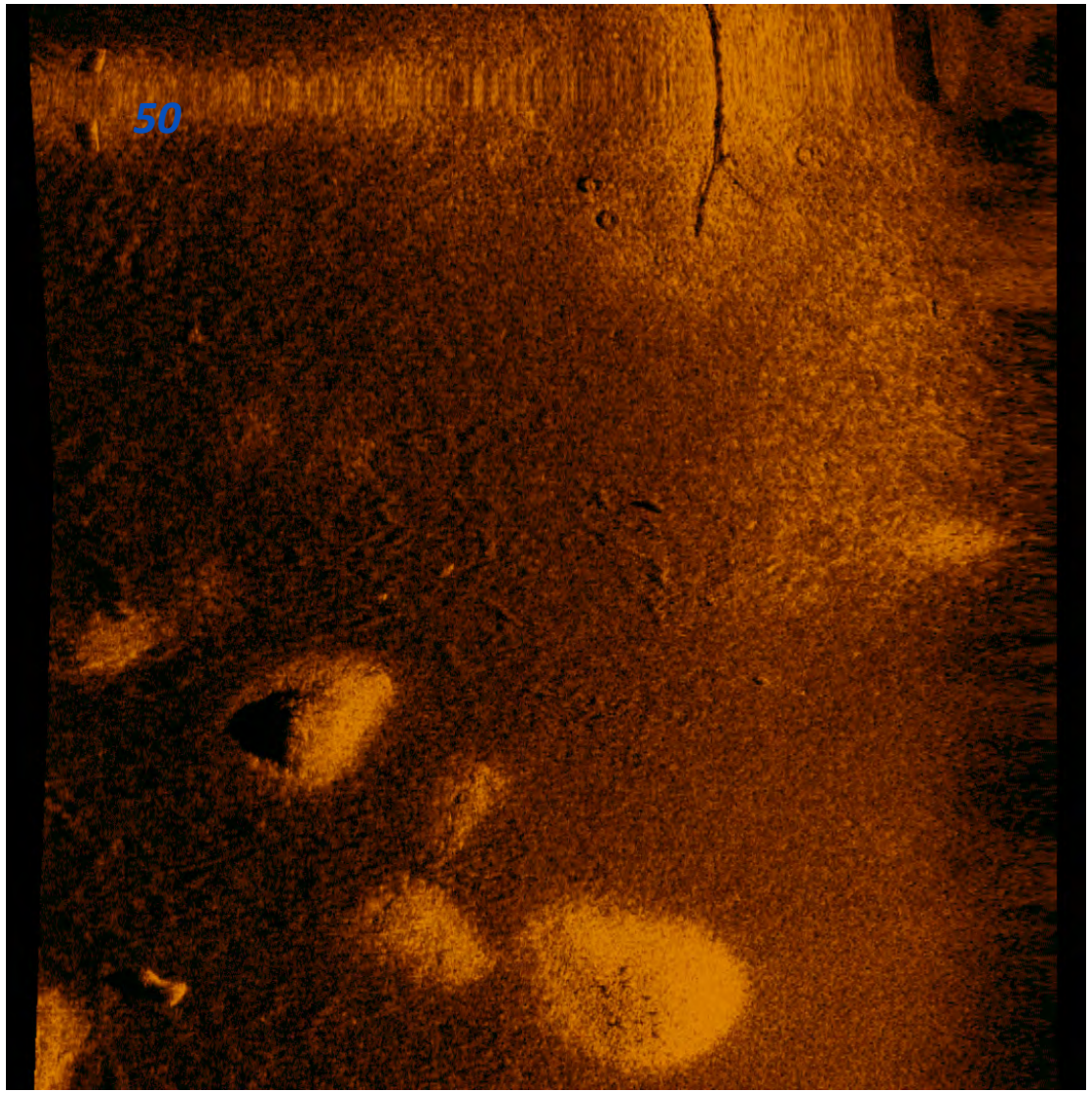


Marine Professionals Since 1919
BRENNAN

Photo ID: 50
Easting (X) 1483643.25
Northing (Y) 632324.07
Description: Potential Log/Potential Drum

Dimensions and attributes

- Target Length: 4.04 US ft
- Target Width: 1.07 US ft
- Target Height: 0.38 US ft

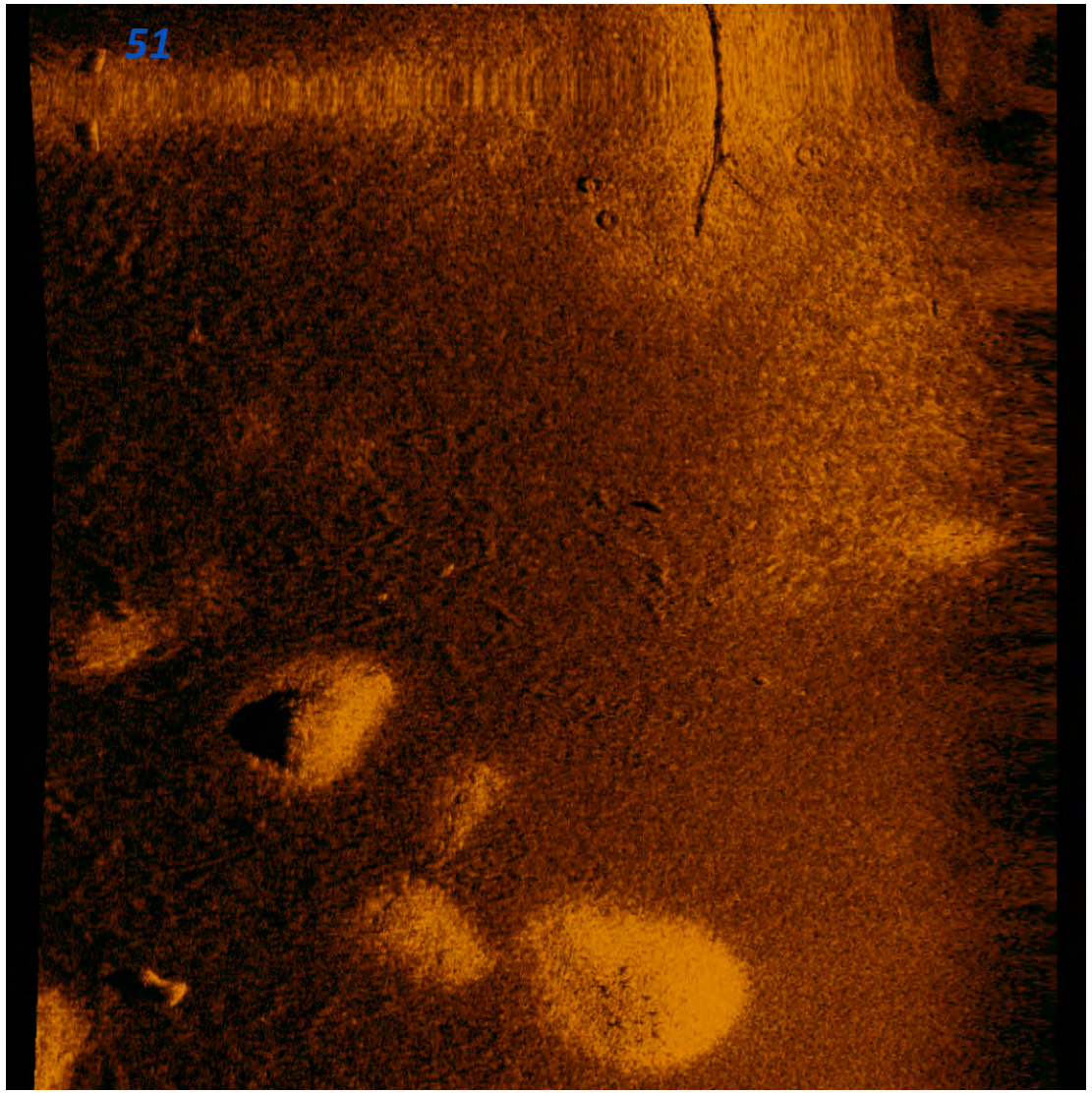


Marine Professionals Since 1919
BRENNAN

Photo ID: 51
Easting (X) 1483640.68
Northing (Y) 632318.39
Description: Potential Log/Potential Drum

Dimensions and attributes

- Target Length: 3.61 US ft
- Target Width: 1.93 US ft
- Target Height: 0.39 US ft

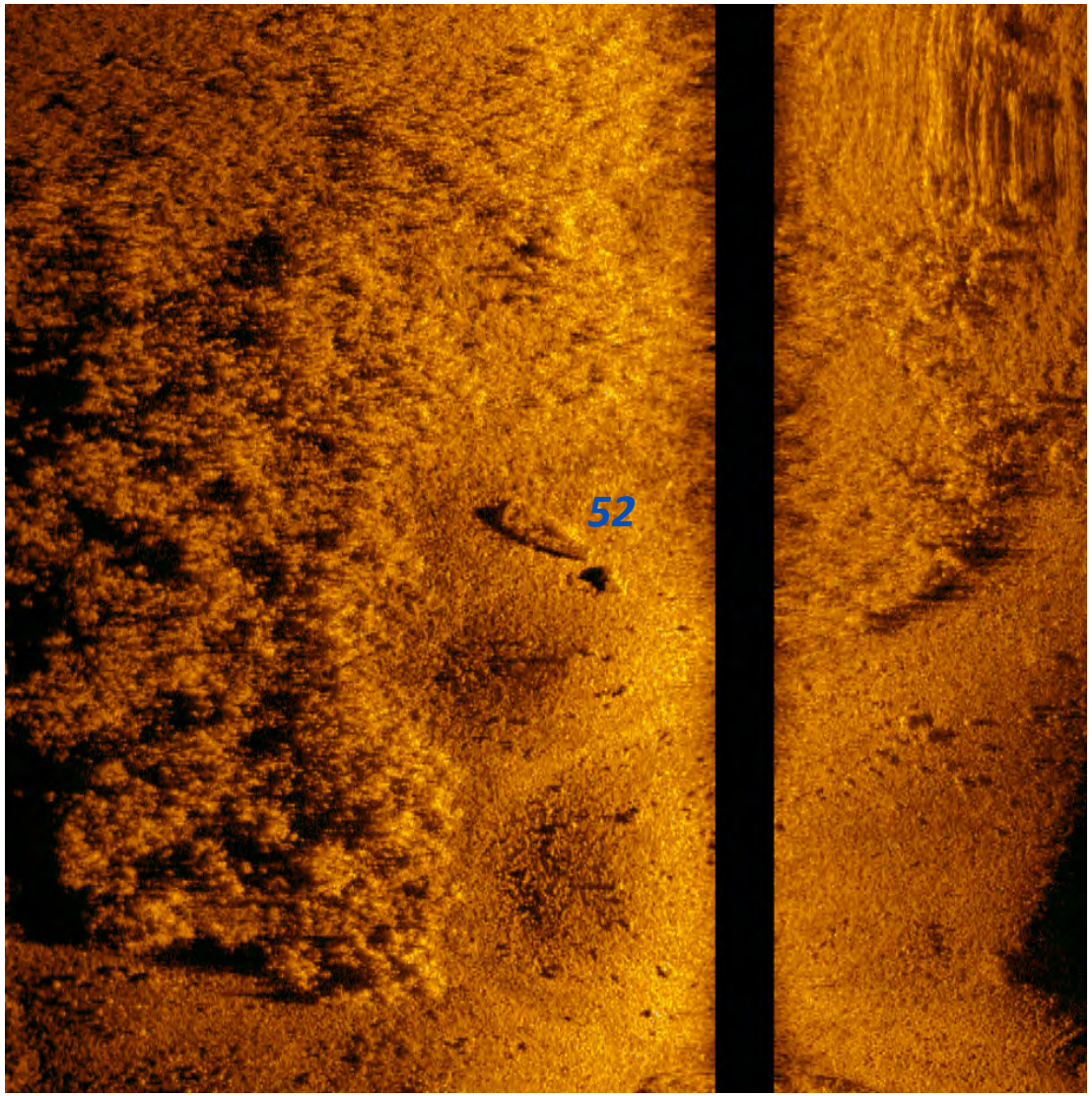


Marine Professionals Since 1919
BRENNAN

Photo ID: 52
Easting (X) 1483906.76
Northing (Y) 632455.17
Description: Potential Logs

Dimensions and attributes

- Target Length: 10.35 US ft
- Target Width: 3.12 US ft
- Target Height: 1.32 US ft

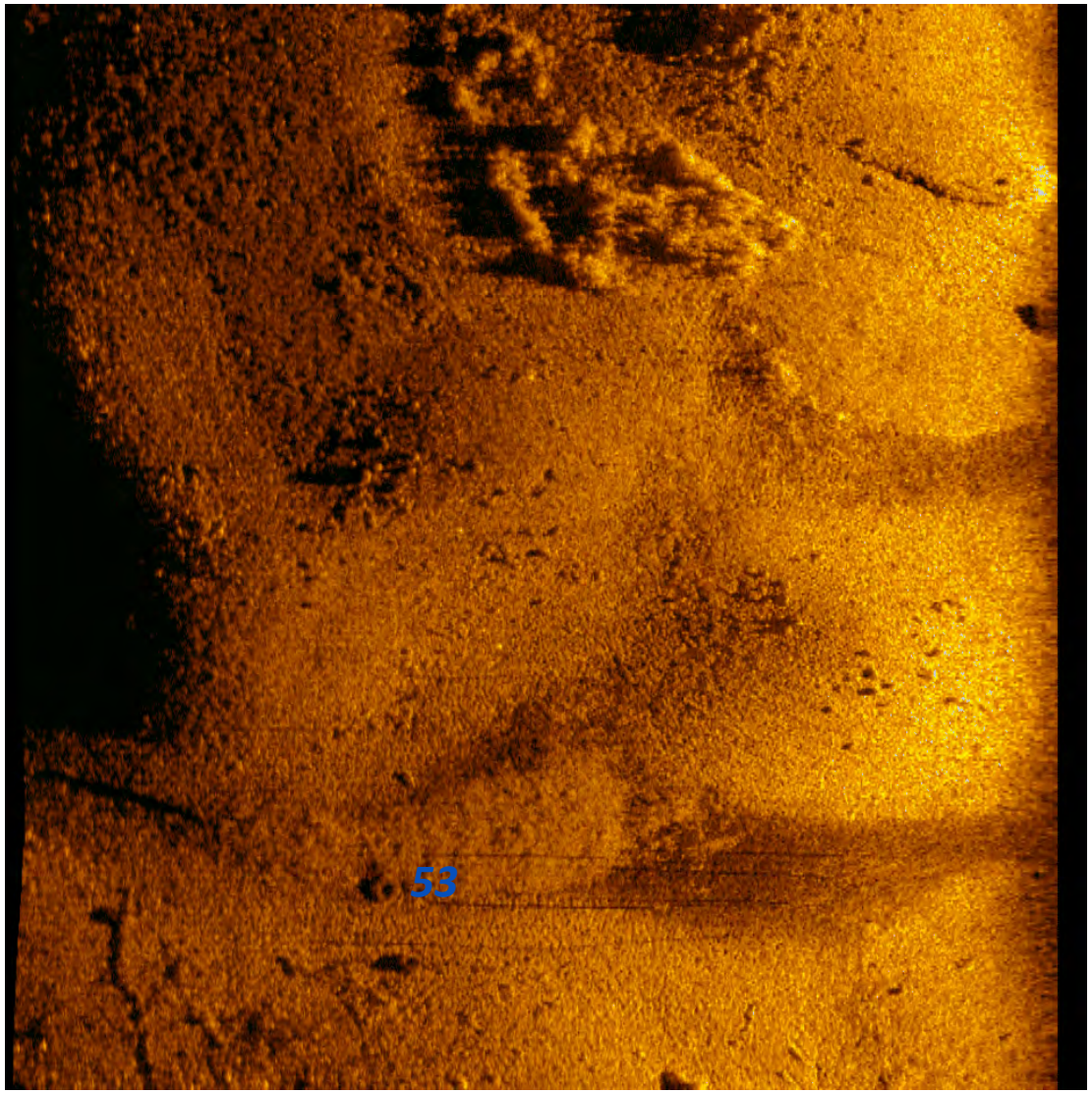


Marine Professionals Since 1919
BRENNAN

Photo ID: 53
Easting (X) 1483860.7
Northing (Y) 632213.34
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.90 US ft
- Target Width: 1.67 US ft
- Target Height: 0.00 US ft

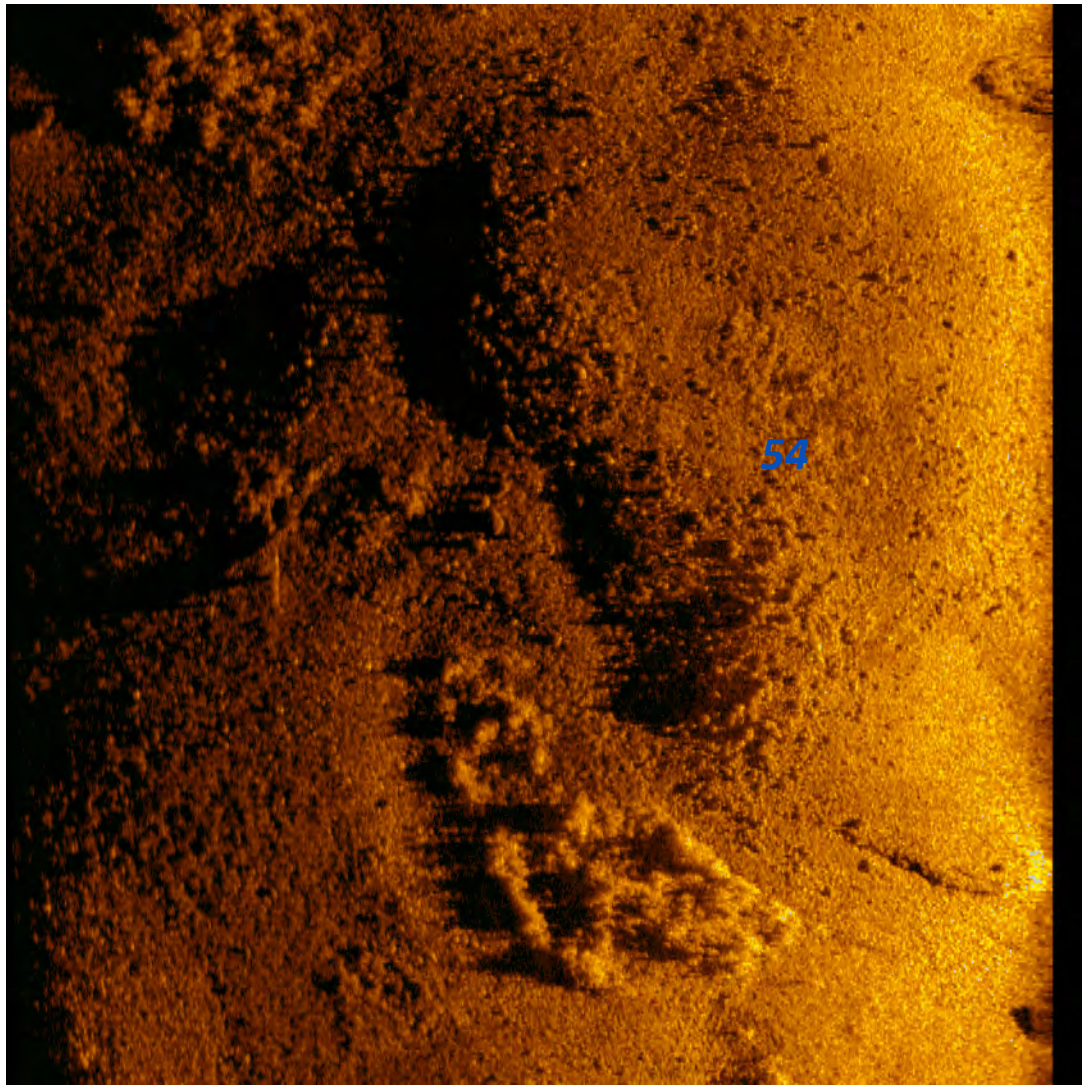


Marine Professionals Since 1919
BRENNAN

Photo ID: 54
Easting (X) 1483896.65
Northing (Y) 632323.64
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

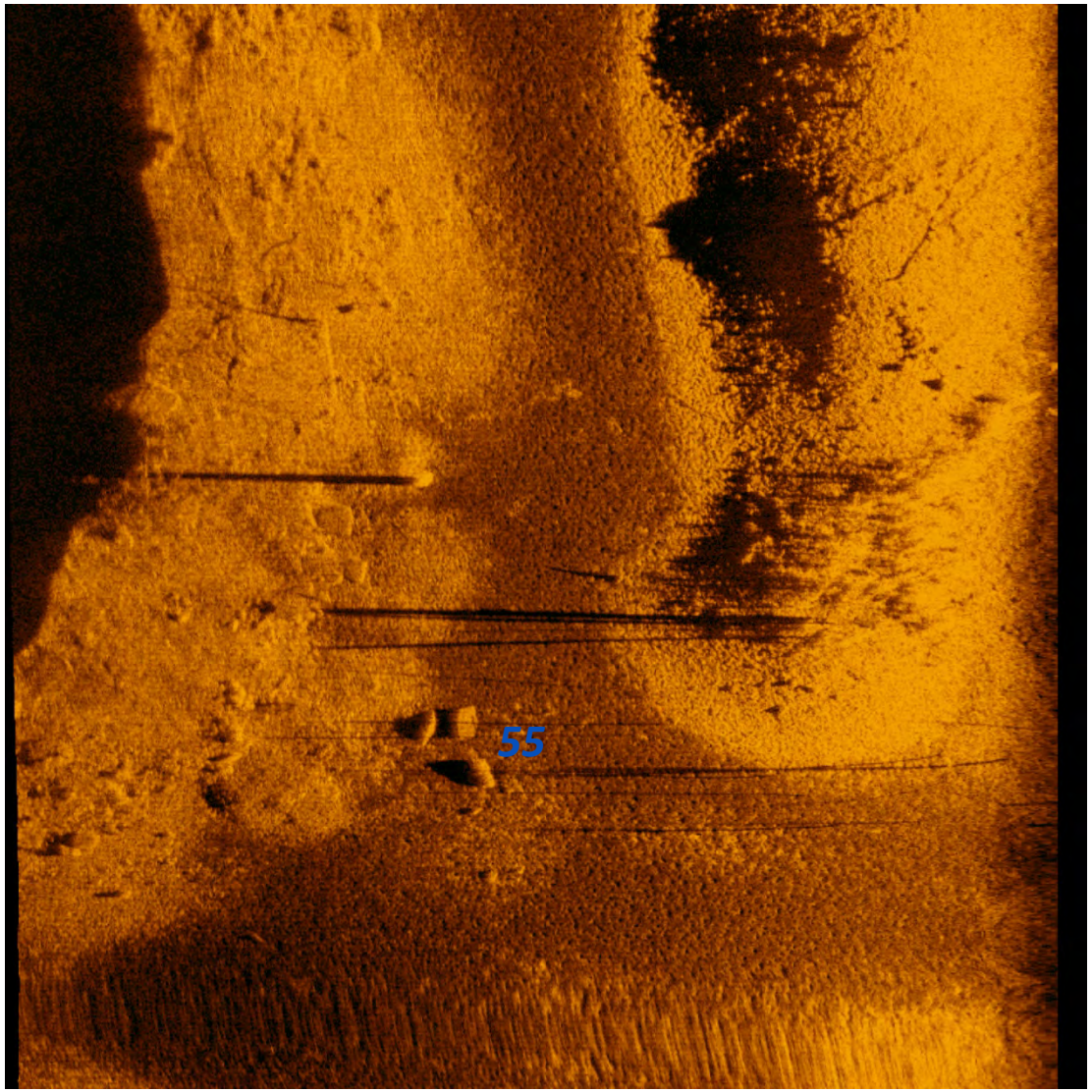


Marine Professionals Since 1919
BRENNAN

Photo ID: 55
Easting (X) 1483995.7
Northing (Y) 632202.25
Description: Potential Drums

Dimensions and attributes

- Target Length: 4.46 US ft
- Target Width: 2.65 US ft
- Target Height: 1.05 US ft

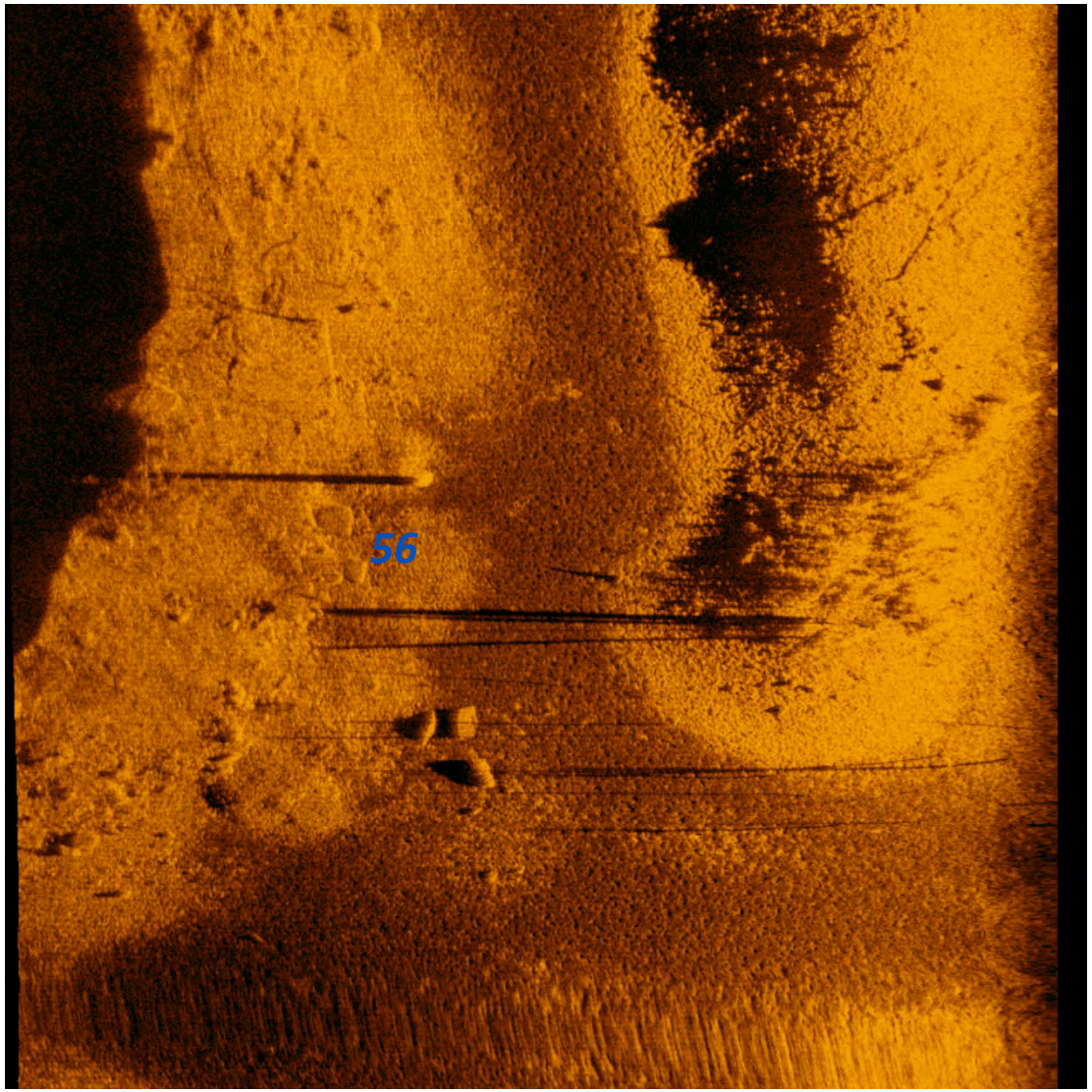


Marine Professionals Since 1919
BRENNAN

Photo ID: 56
Easting (X) 1484014.66
Northing (Y) 632224.36
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.72 US ft
- Target Width: 2.79 US ft
- Target Height: 0.00 US ft

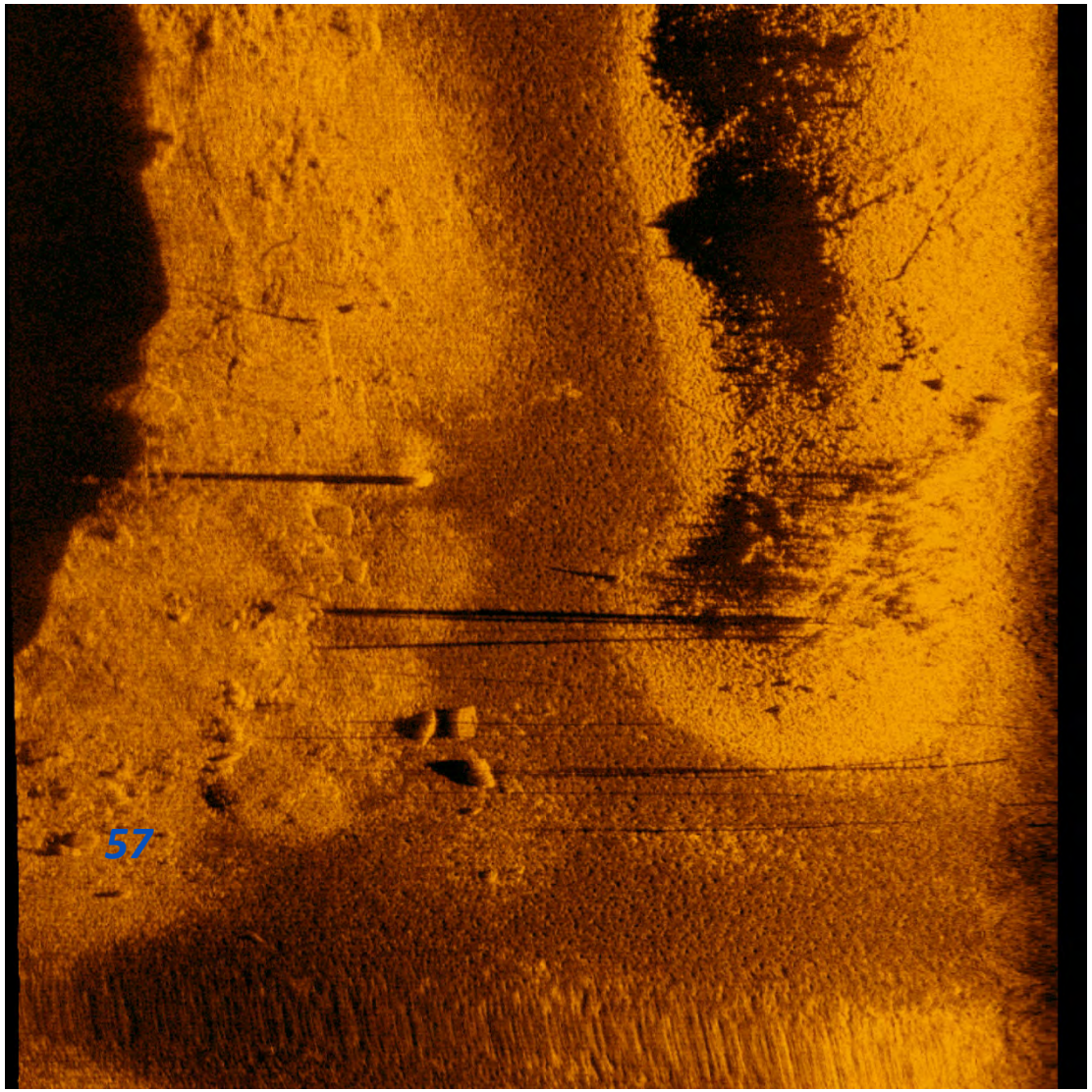


Marine Professionals Since 1919
BRENNAN

Photo ID: 57
Easting (X) 1484030.47
Northing (Y) 632175.51
Description: Potential Boulders

Dimensions and attributes

- Target Length: 1.64 US ft
- Target Width: 1.04 US ft
- Target Height: 0.18 US ft

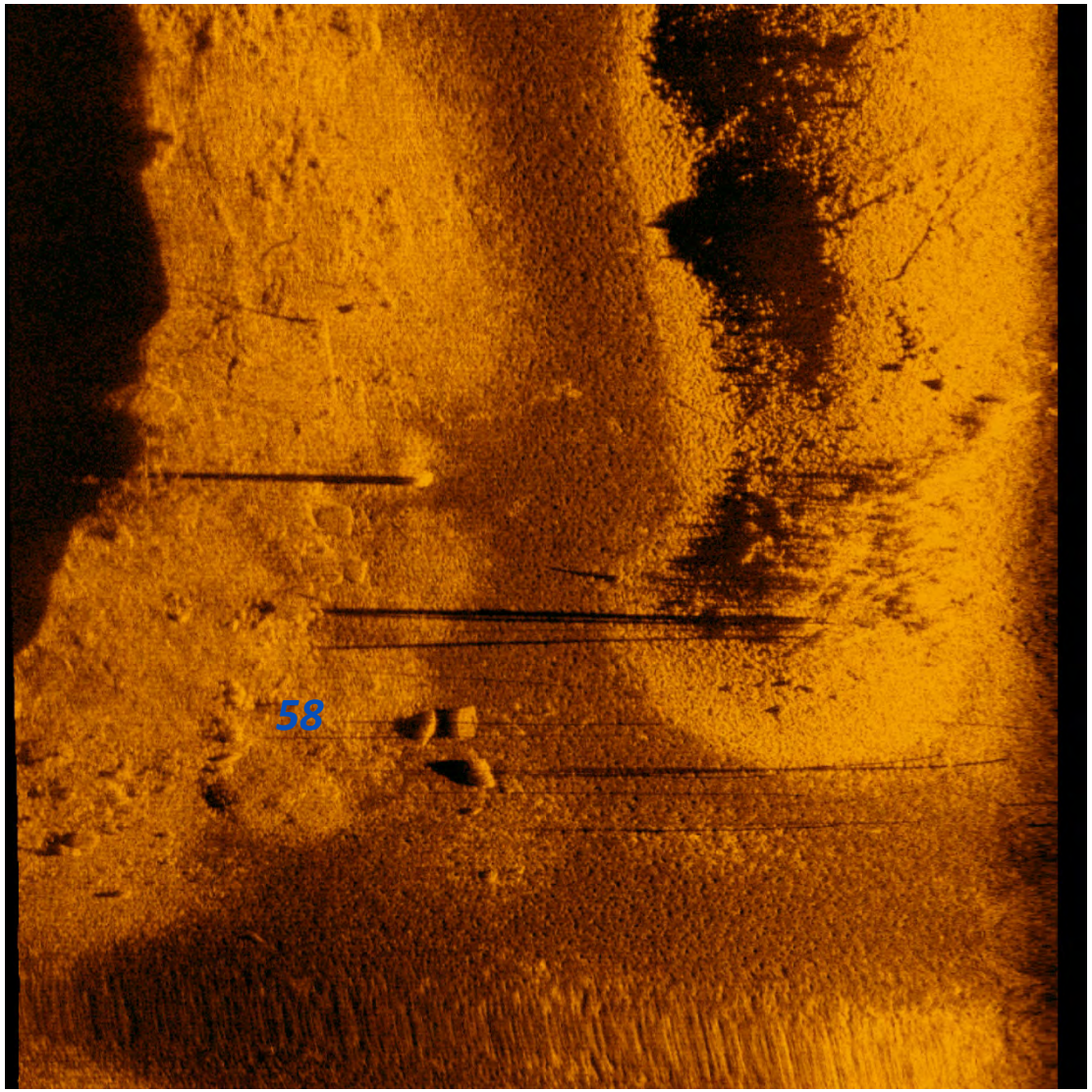


Marine Professionals Since 1919
BRENNAN

Photo ID: 58
Easting (X) 1484017.26
Northing (Y) 632192.52
Description: Potential Boulders

Dimensions and attributes

- Target Length: 1.37 US ft
- Target Width: 2.18 US ft
- Target Height: 0.20 US ft

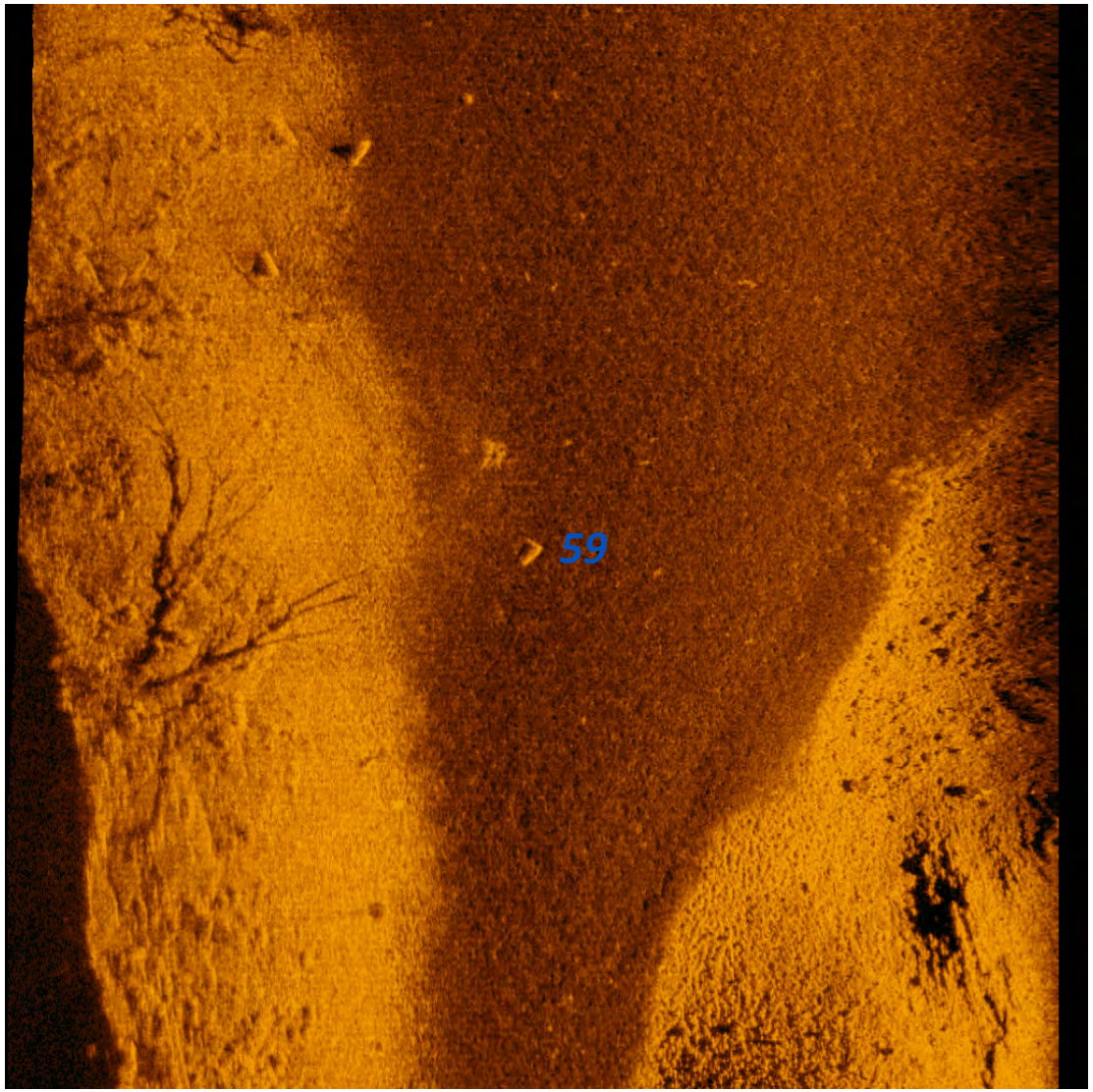


Marine Professionals Since 1919
BRENNAN

Photo ID: 59
Easting (X) 1484034.21
Northing (Y) 632335.91
Description: Potential Drum

Dimensions and attributes

- Target Length: 3.95 US ft
- Target Width: 2.57 US ft
- Target Height: 0.00 US ft

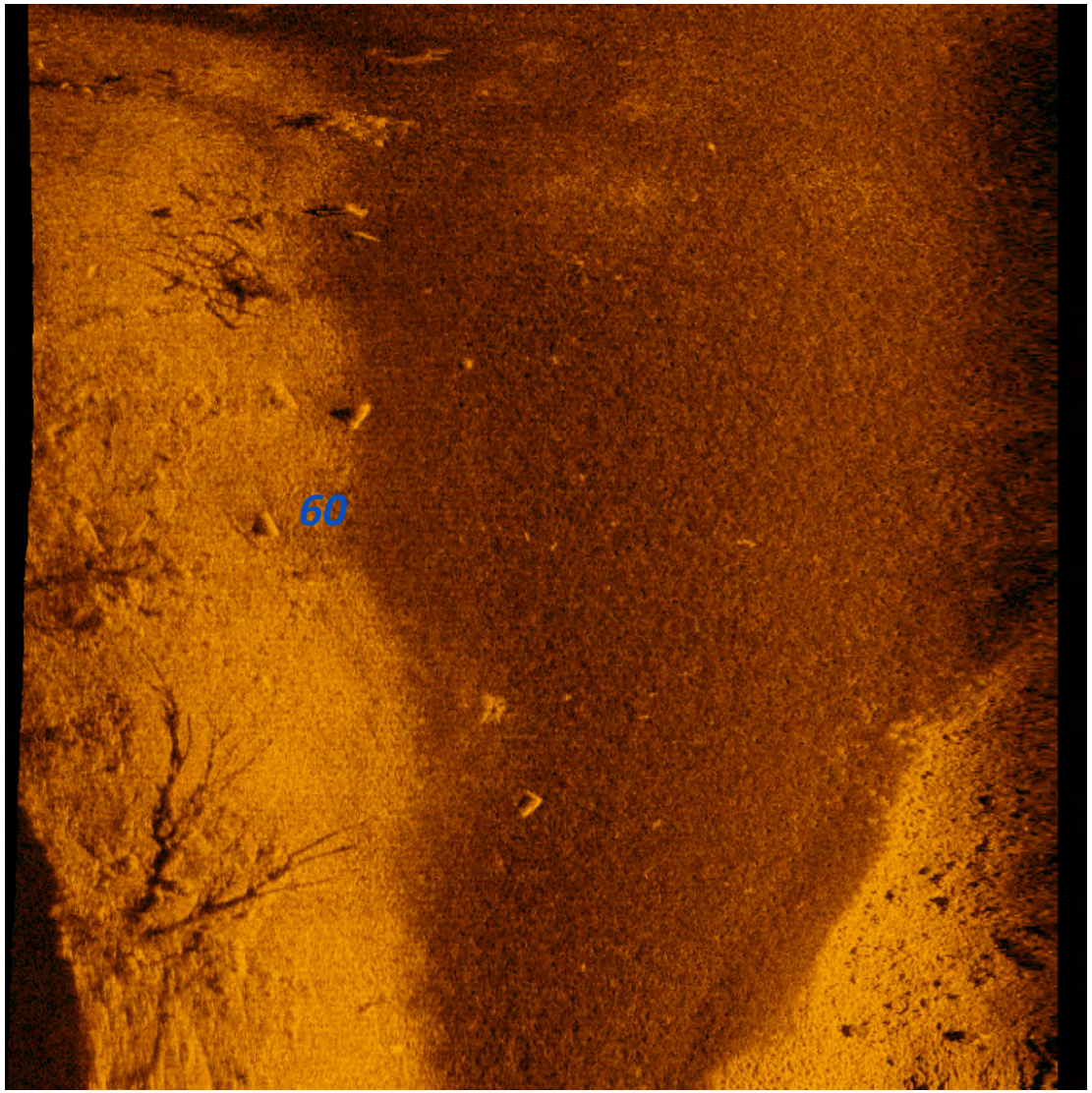


Marine Professionals Since 1919
BRENNAN

Photo ID: 60
Easting (X) 1484078.6
Northing (Y) 632364.81
Description: Potential Drum

Dimensions and attributes

- Target Length: 4.49 US ft
- Target Width: 2.26 US ft
- Target Height: 0.00 US ft

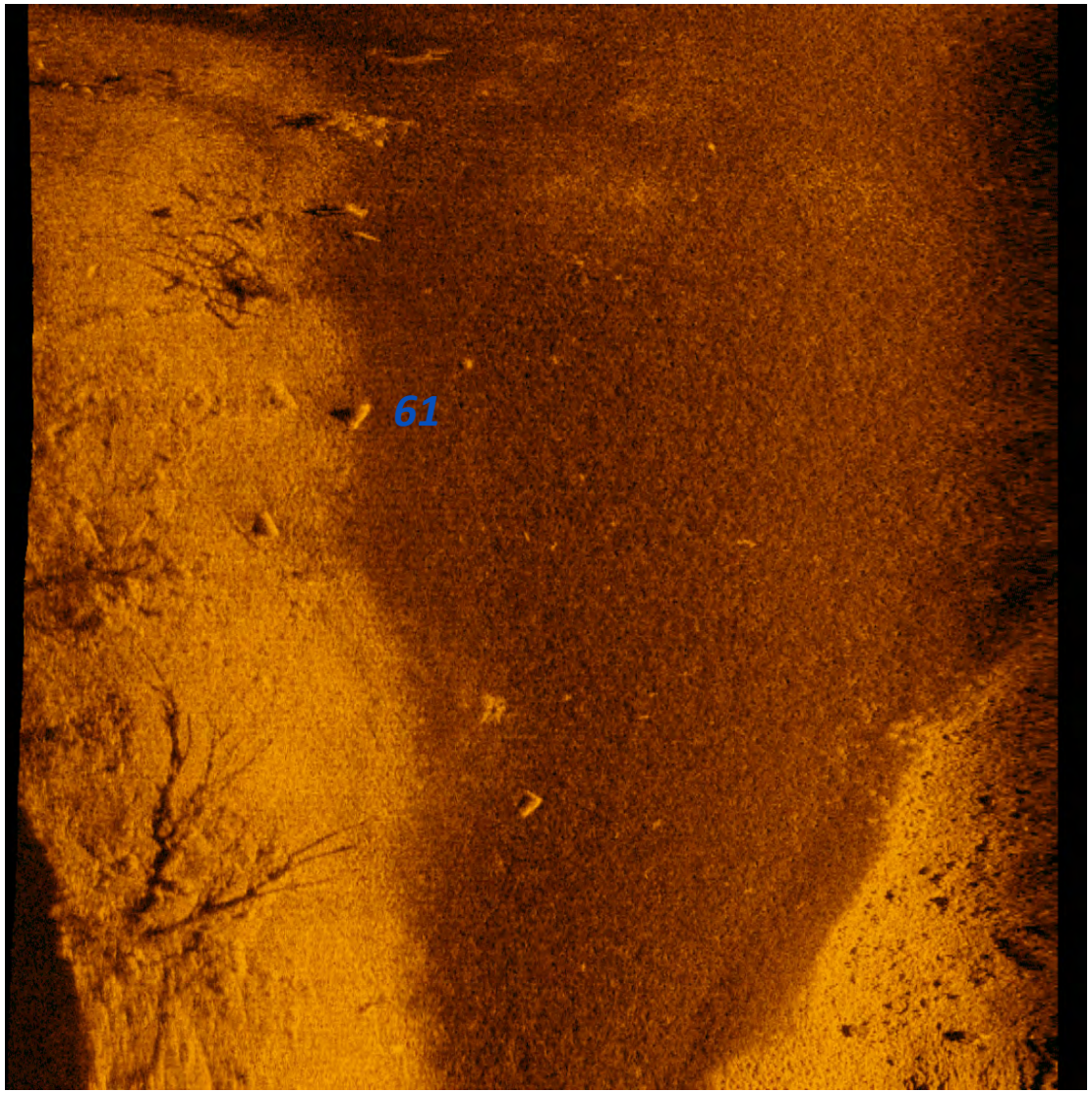


Marine Professionals Since 1919
BRENNAN

Photo ID: 61
Easting (X) 1484073.93
Northing (Y) 632385.42
Description: Potential Drum

Dimensions and attributes

- Target Length: 4.20 US ft
- Target Width: 2.20 US ft
- Target Height: 0.62 US ft

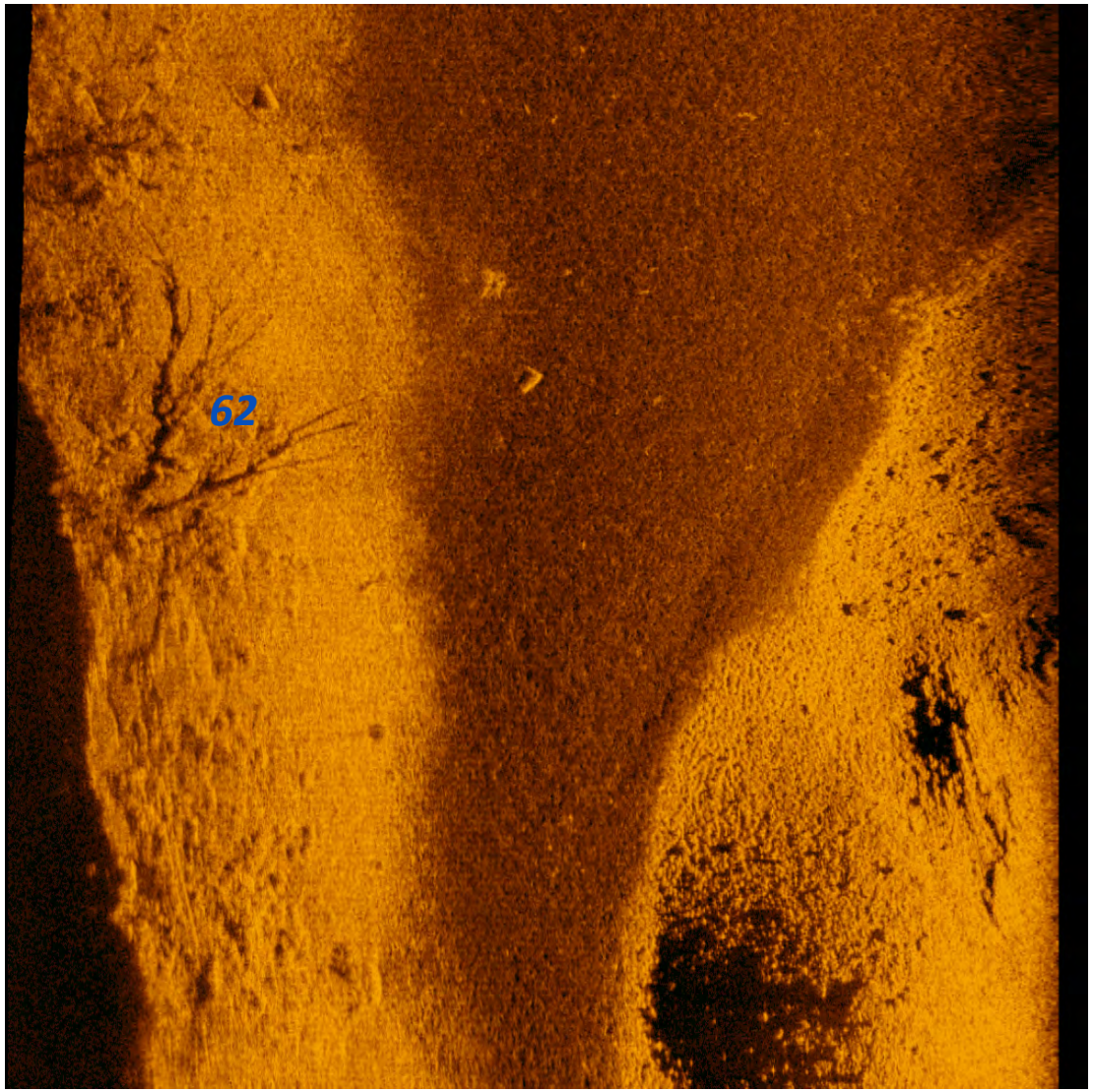


Marine Professionals Since 1919
BRENNAN

Photo ID: 62
Easting (X) 1484063.24
Northing (Y) 632301.8
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

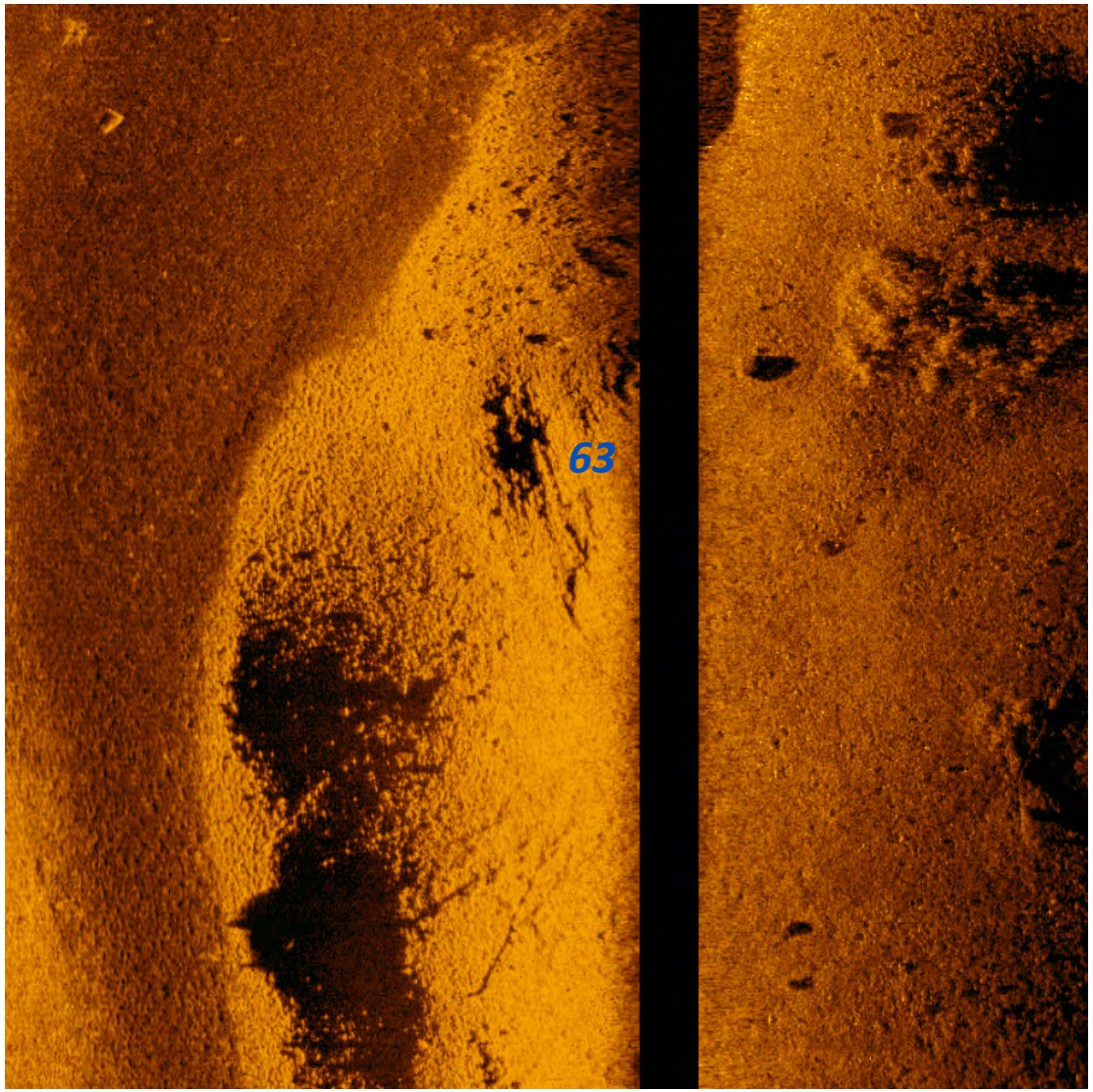


Marine Professionals Since 1919
BRENNAN

Photo ID: 63
Easting (X) 1483971.03
Northing (Y) 632318.88
Description: Potential Logs

Dimensions and attributes

- Target Length: 1.37 US ft
- Target Width: 2.18 US ft
- Target Height: 0.20 US ft

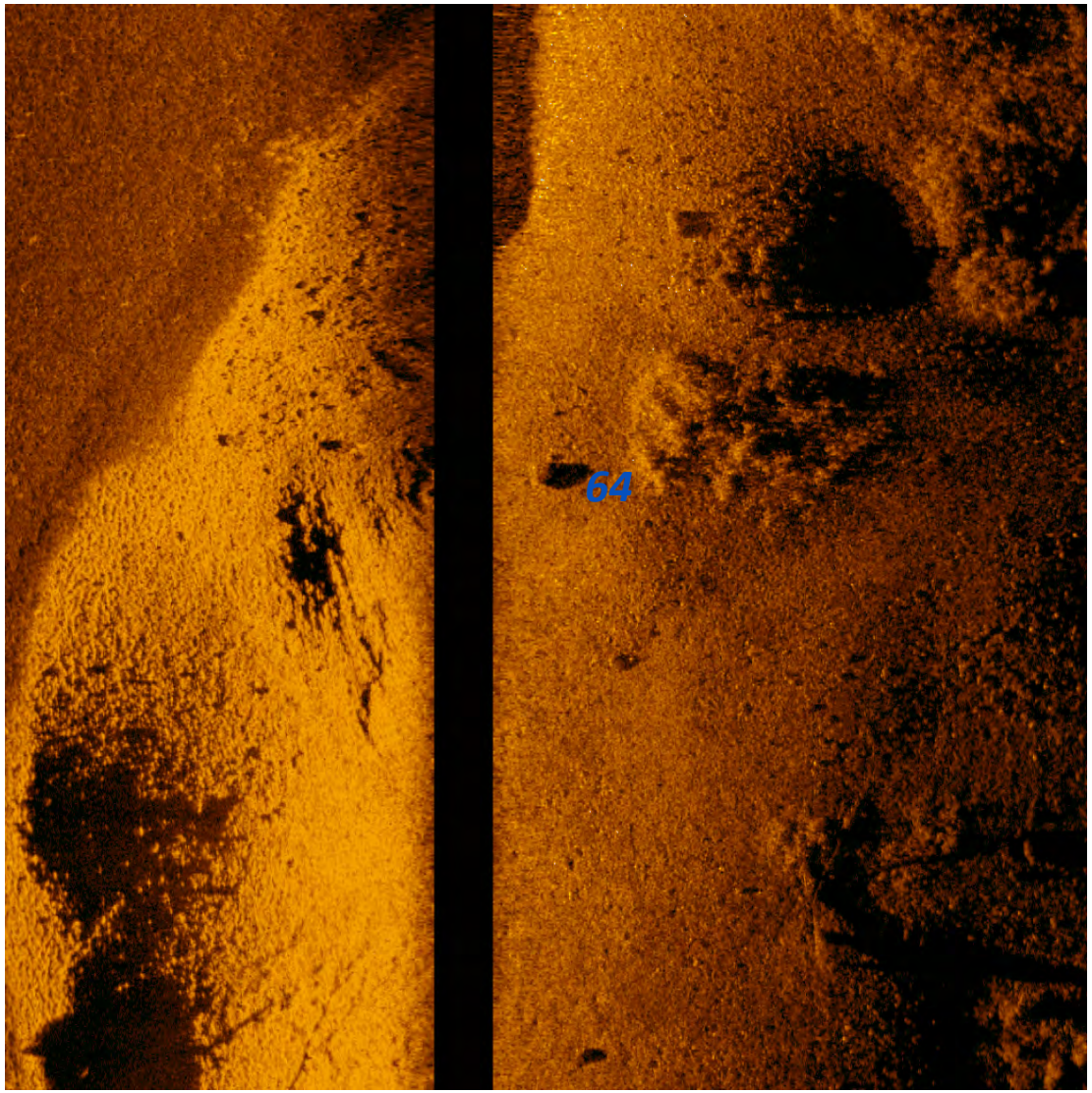


Marine Professionals Since 1919
BRENNAN

Photo ID: 64
Easting (X) 1483955.4
Northing (Y) 632339.23
Description: Potential Drum

Dimensions and attributes

- Target Length: 4.24 US ft
- Target Width: 2.36 US ft
- Target Height: 1.82 US ft

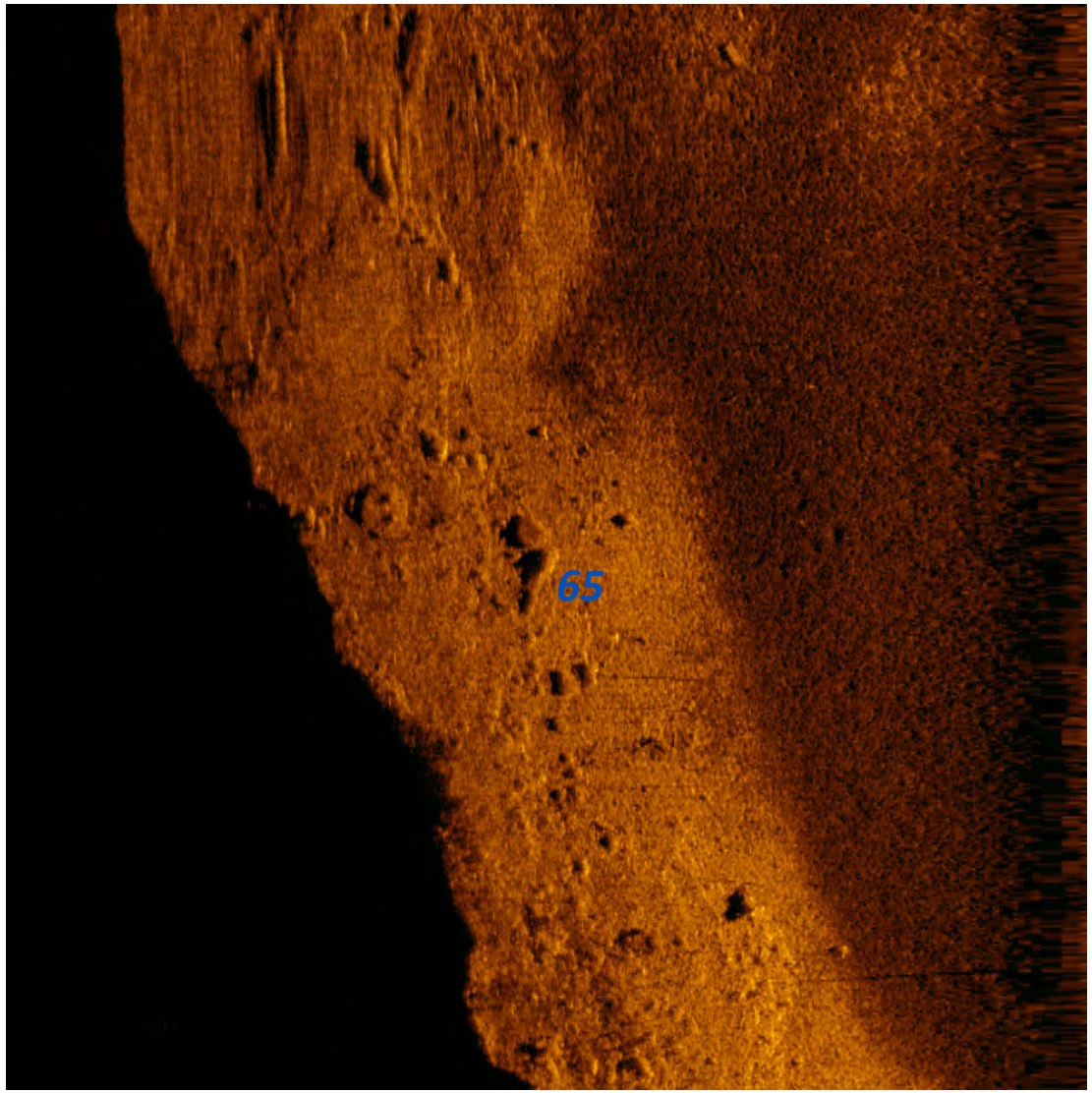


Marine Professionals Since 1919
BRENNAN

Photo ID: 65
Easting (X) 1484019.04
Northing (Y) 632158.71
Description: Potential Boulders

Dimensions and attributes

- Target Length: 7.93 US ft
- Target Width: 1.50 US ft
- Target Height: 0.71 US ft

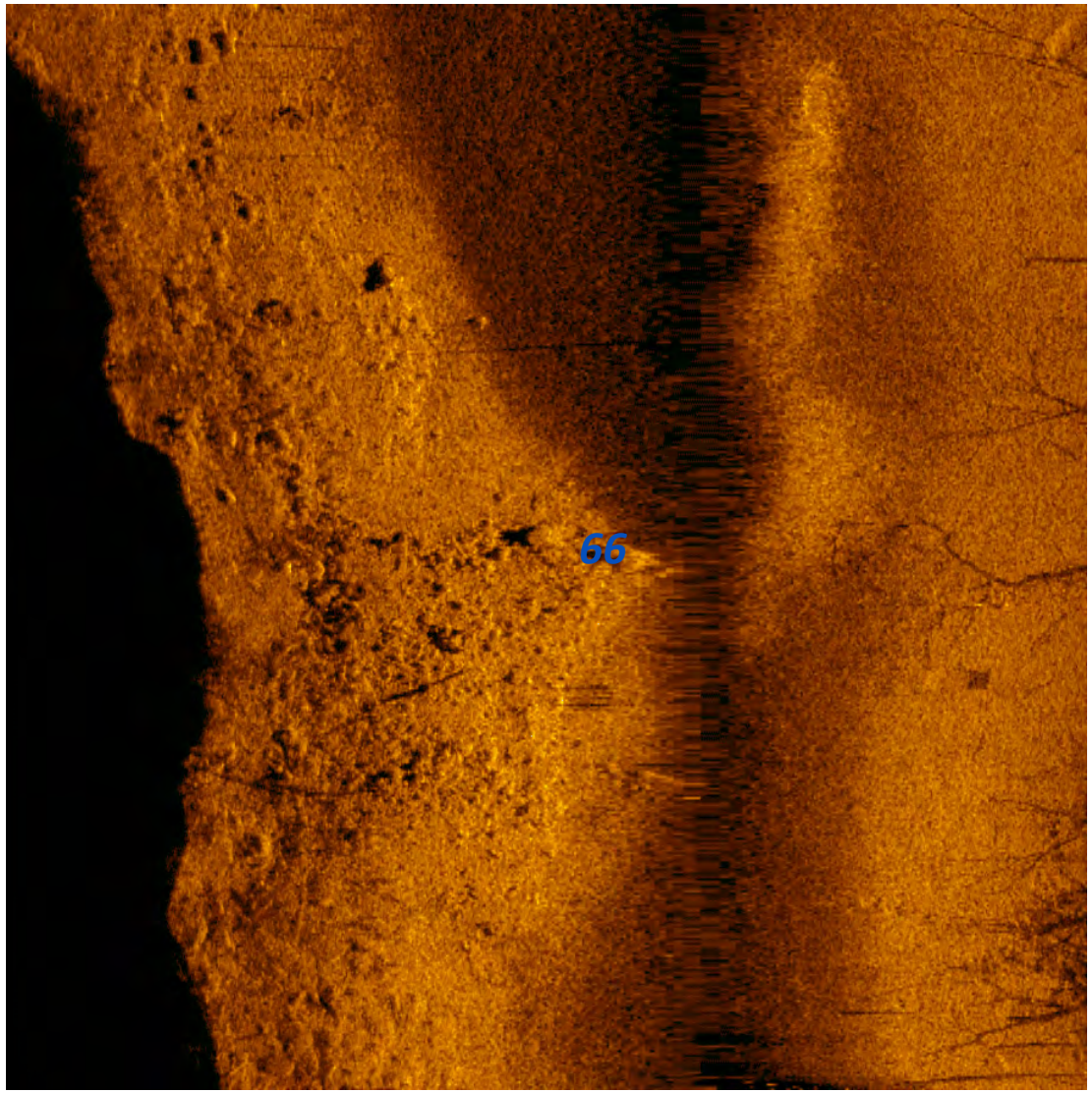


Marine Professionals Since 1919
BRENNAN

Photo ID: 66
Easting (X) 1484038.89
Northing (Y) 632086.02
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

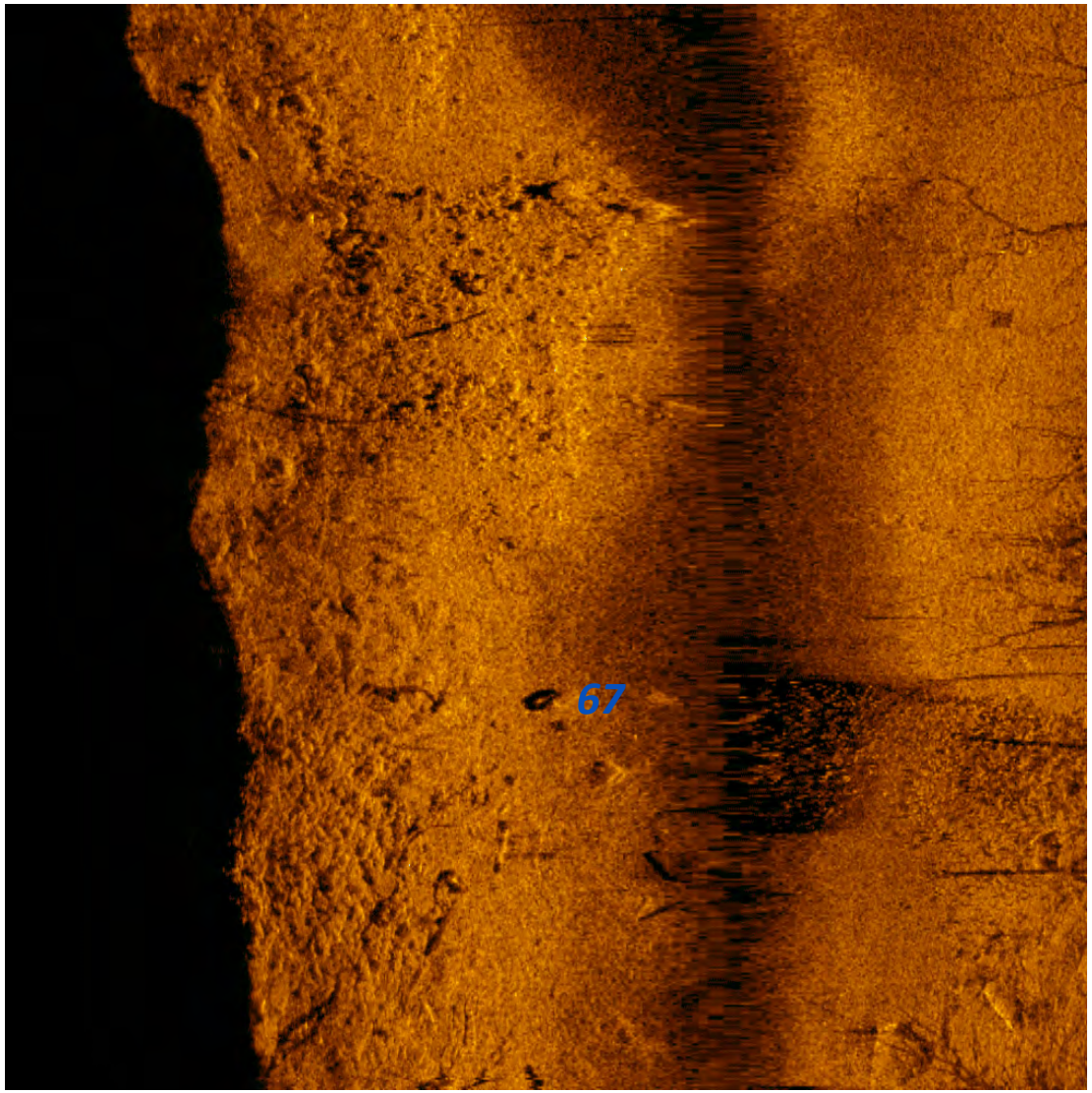


Marine Professionals Since 1919
BRENNAN

Photo ID: 67
Easting (X) 1484088.12
Northing (Y) 632049.38
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.91 US ft
- Target Width: 1.74 US ft
- Target Height: 1.29 US ft

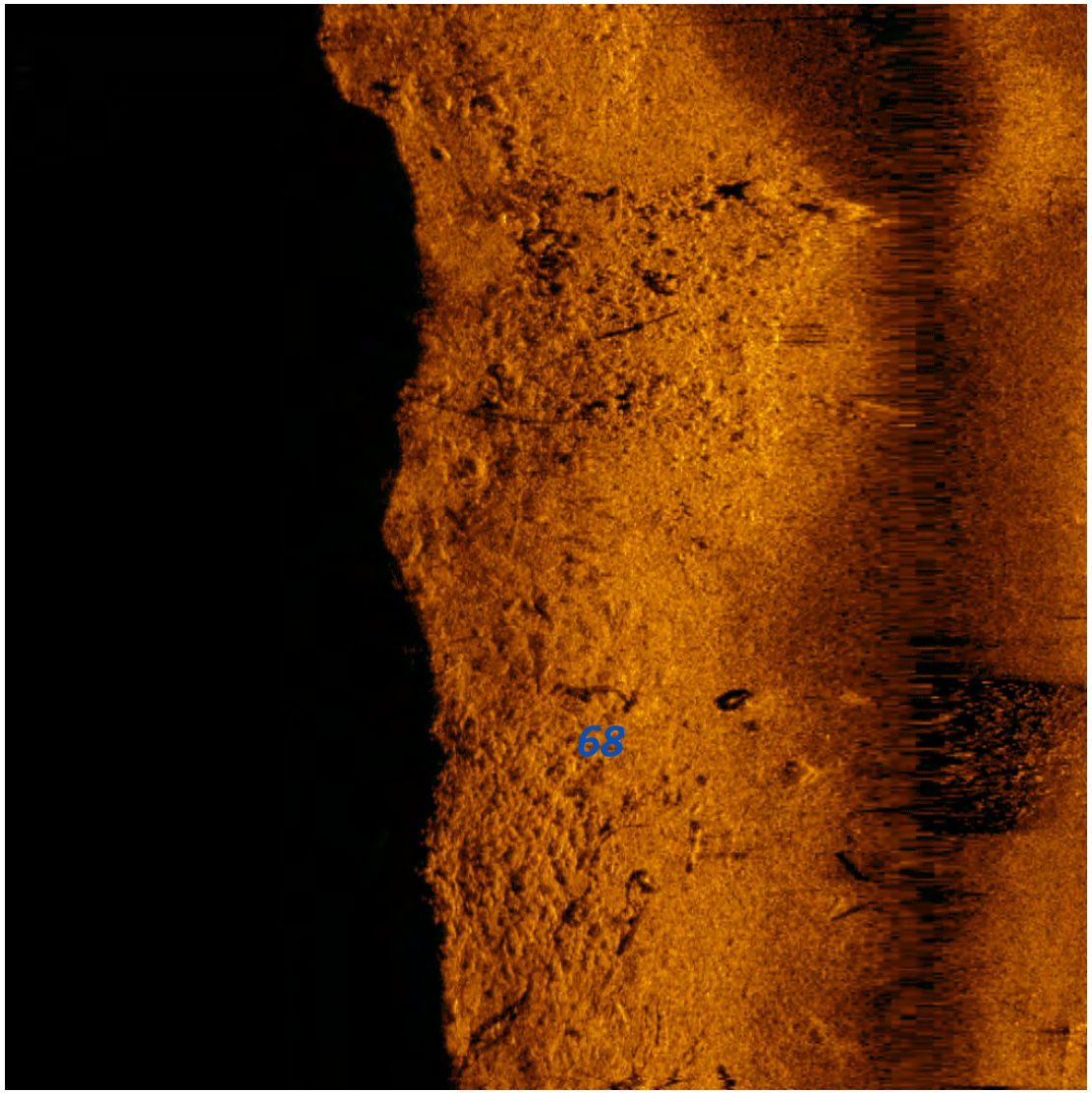


Marine Professionals Since 1919
BRENNAN

Photo ID: 68
Easting (X) 1484104.96
Northing (Y) 632063.31
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

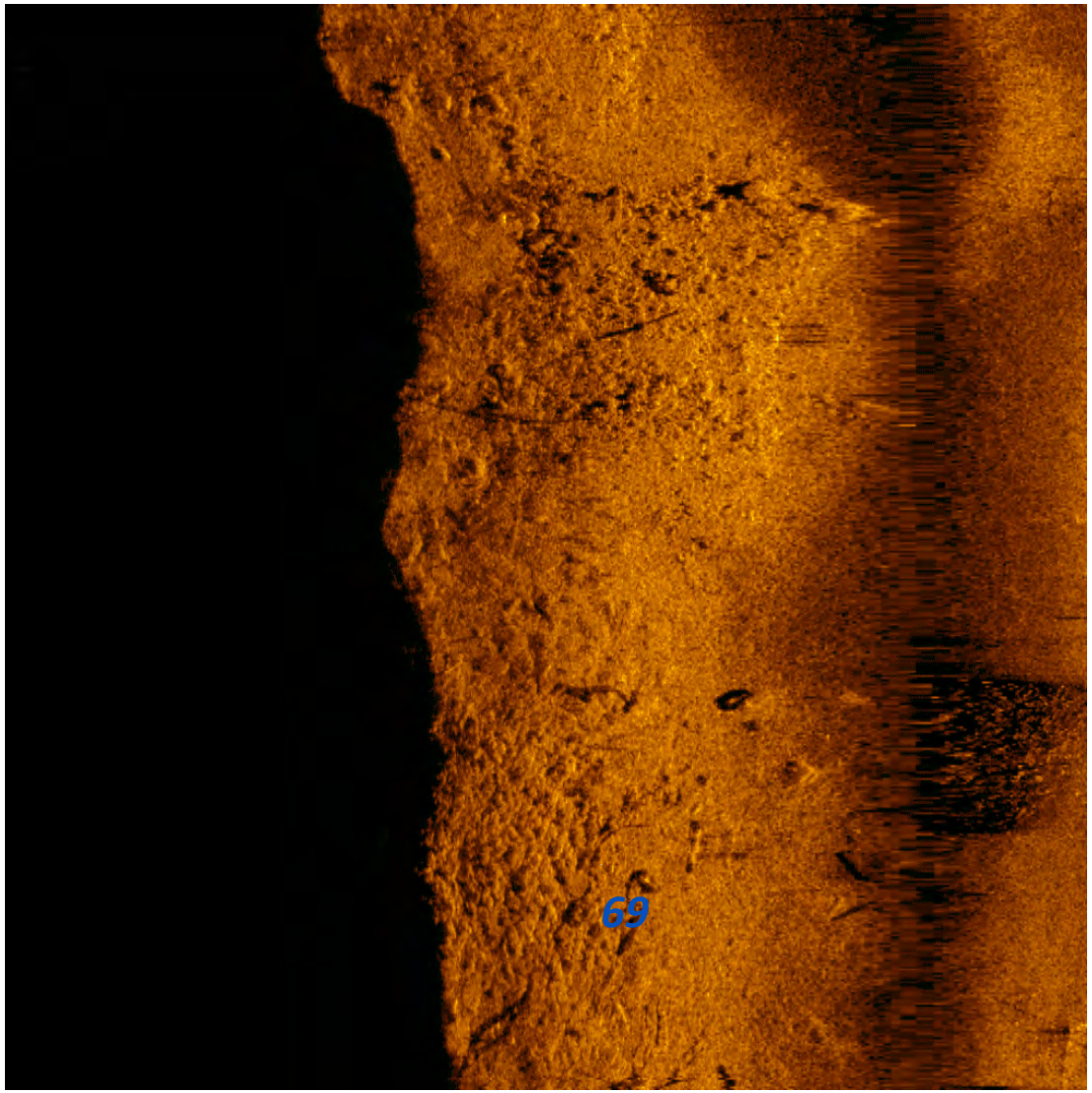


Marine Professionals Since 1919
BRENNAN

Photo ID: 69
Easting (X) 1484119.38
Northing (Y) 632051.46
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

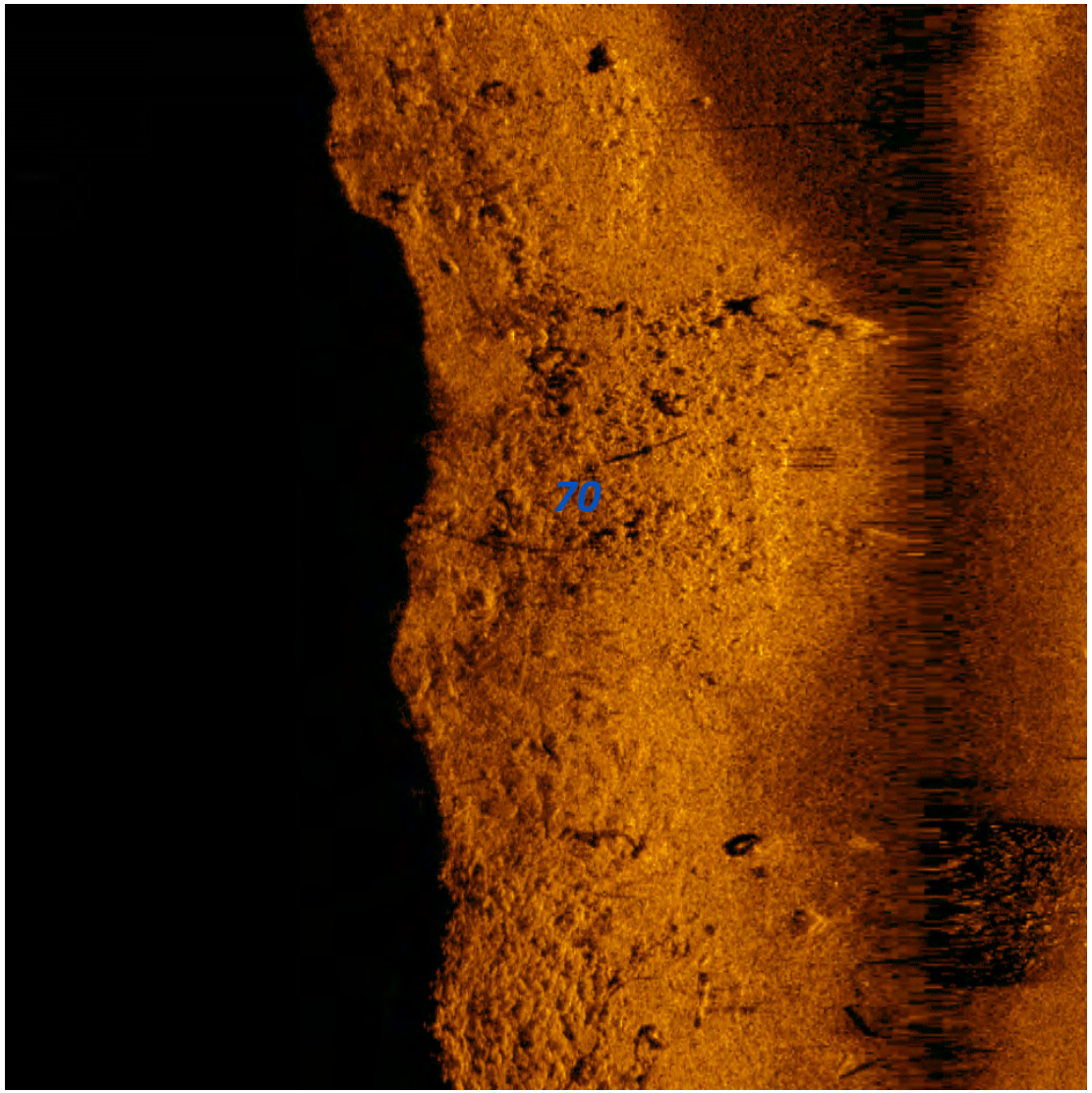


Marine Professionals Since 1919
BRENNAN

Photo ID: 70
Easting (X) 1484073.55
Northing (Y) 632089.94
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

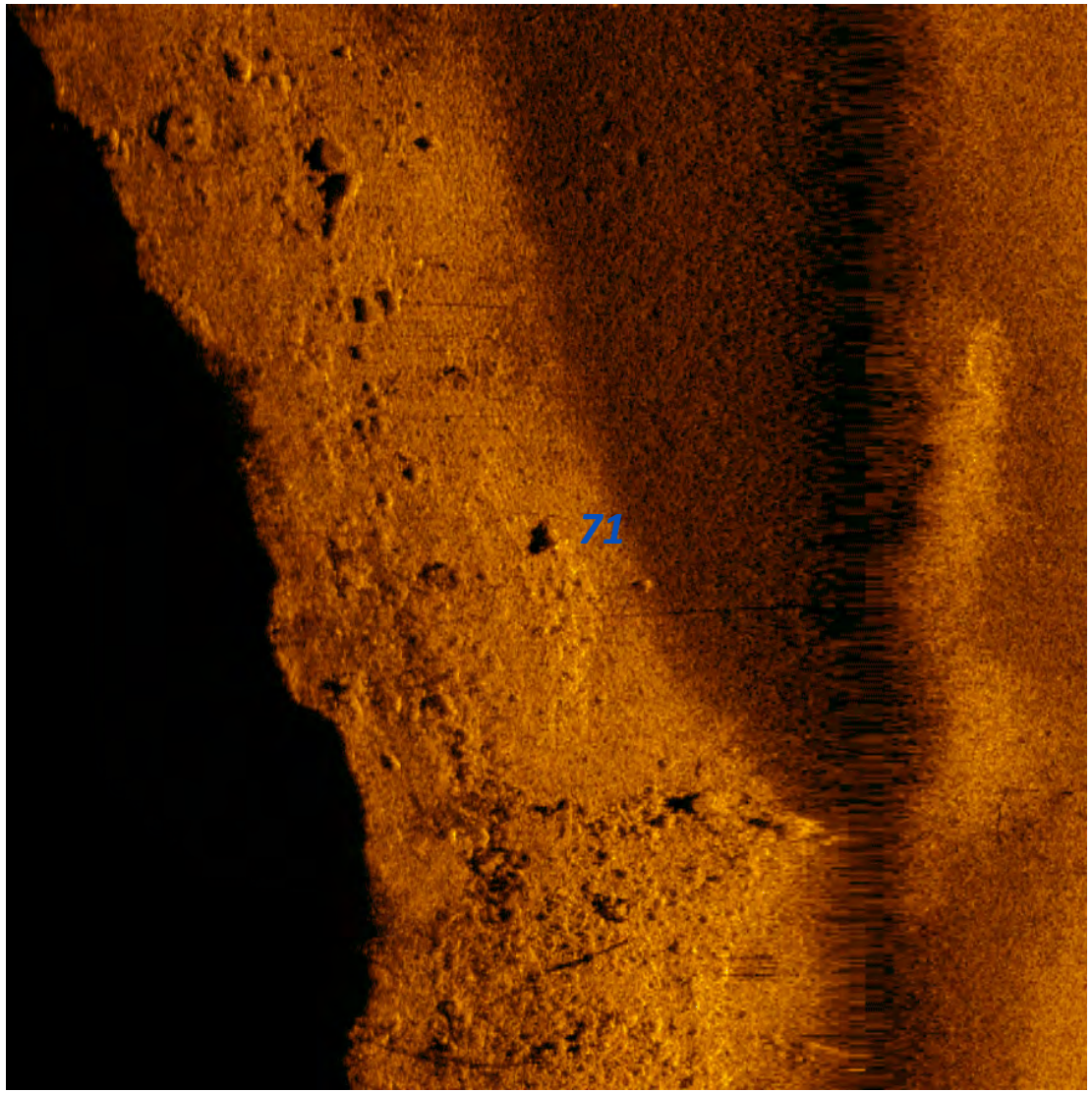


Marine Professionals Since 1919
BRENNAN

Photo ID: 71
Easting (X) 1484029.76
Northing (Y) 632118.05
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

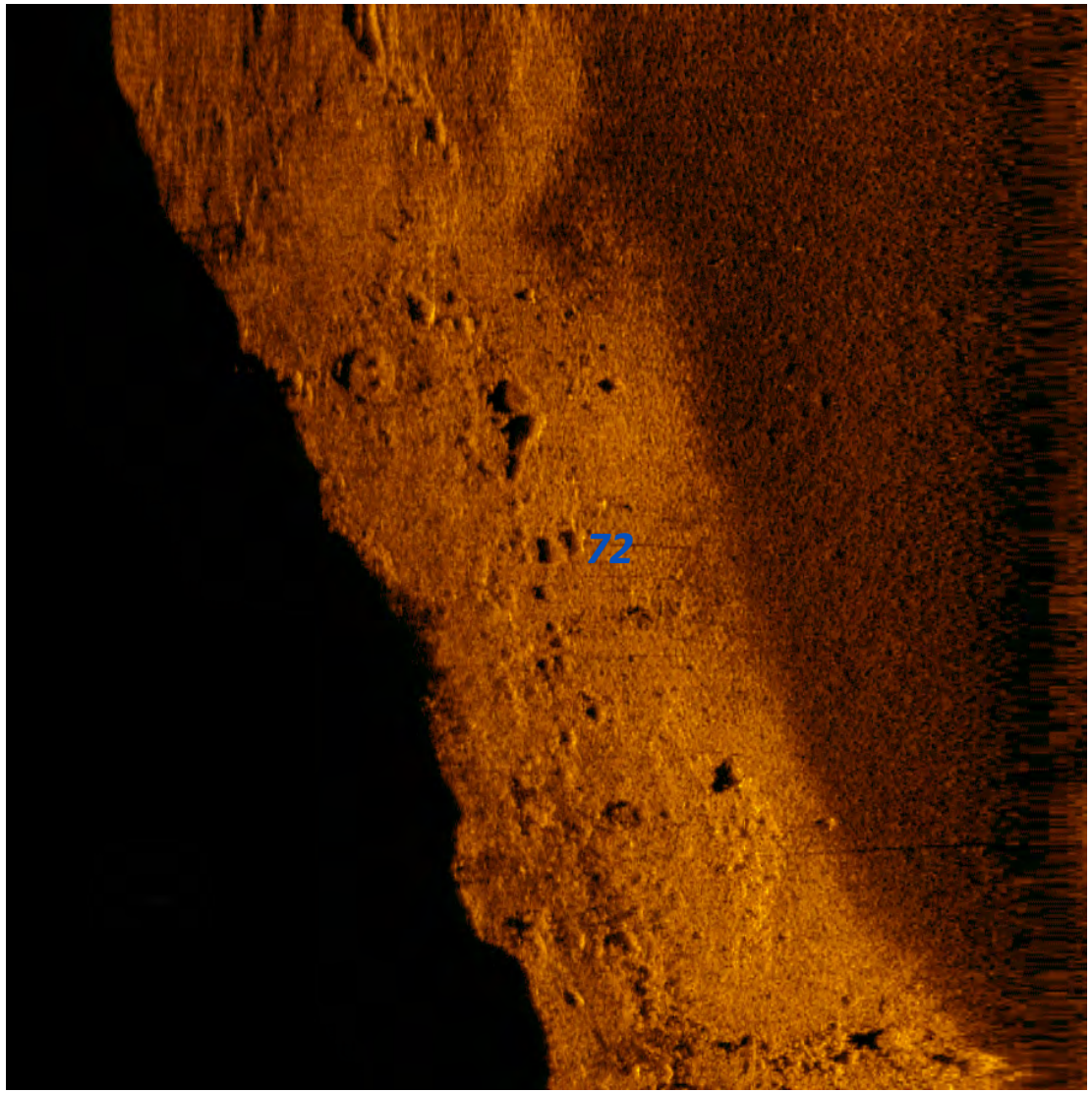


Marine Professionals Since 1919
BRENNAN

Photo ID: 72
Easting (X) 1484026.5
Northing (Y) 632149.13
Description: Potential Boulders

Dimensions and attributes

- Target Length: 2.68 US ft
- Target Width: 1.61 US ft
- Target Height: 0.33 US ft

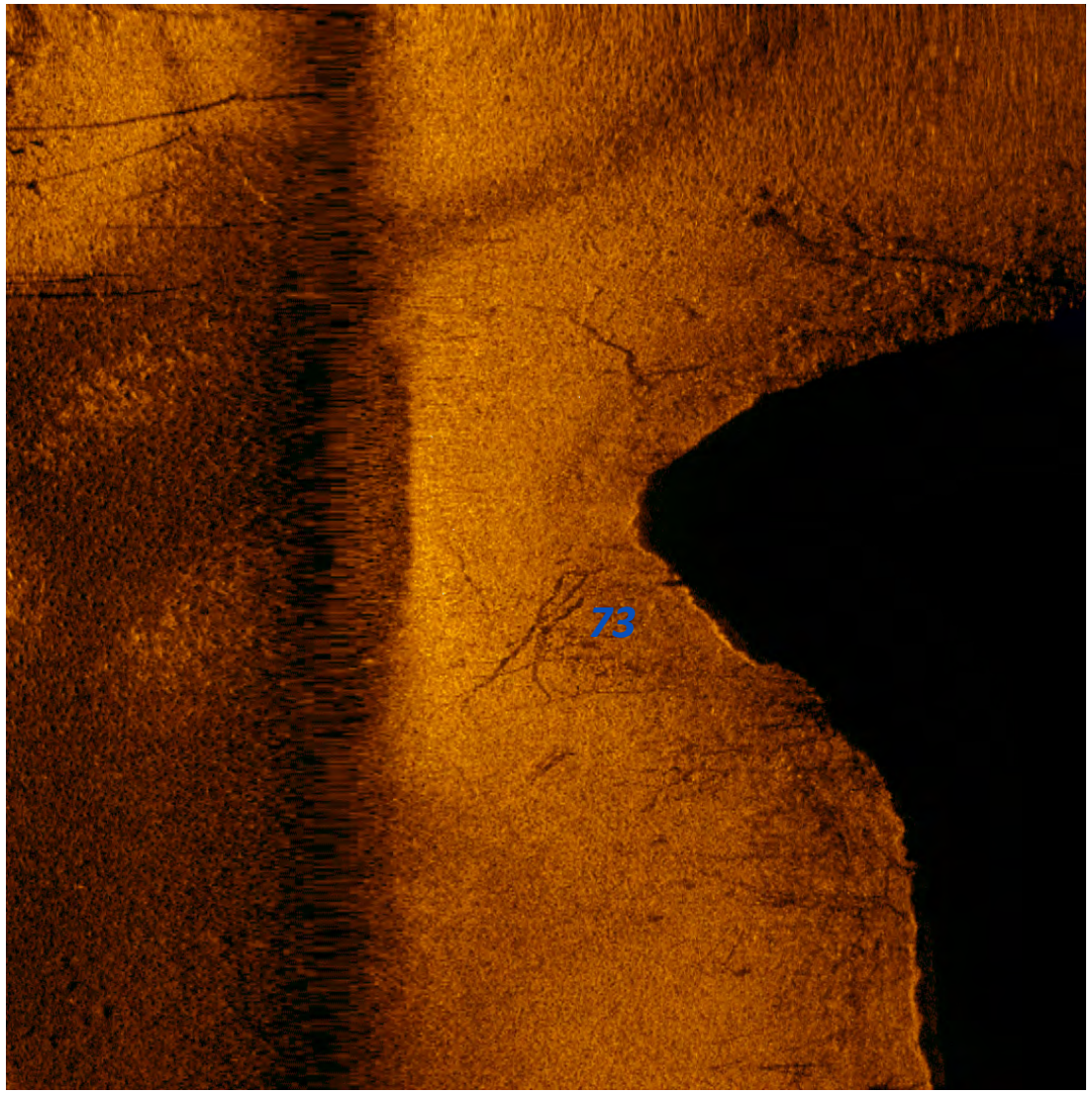


Marine Professionals Since 1919
BRENNAN

Photo ID: 73
Easting (X) 1483923.59
Northing (Y) 632147.25
Description: Potential Log/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

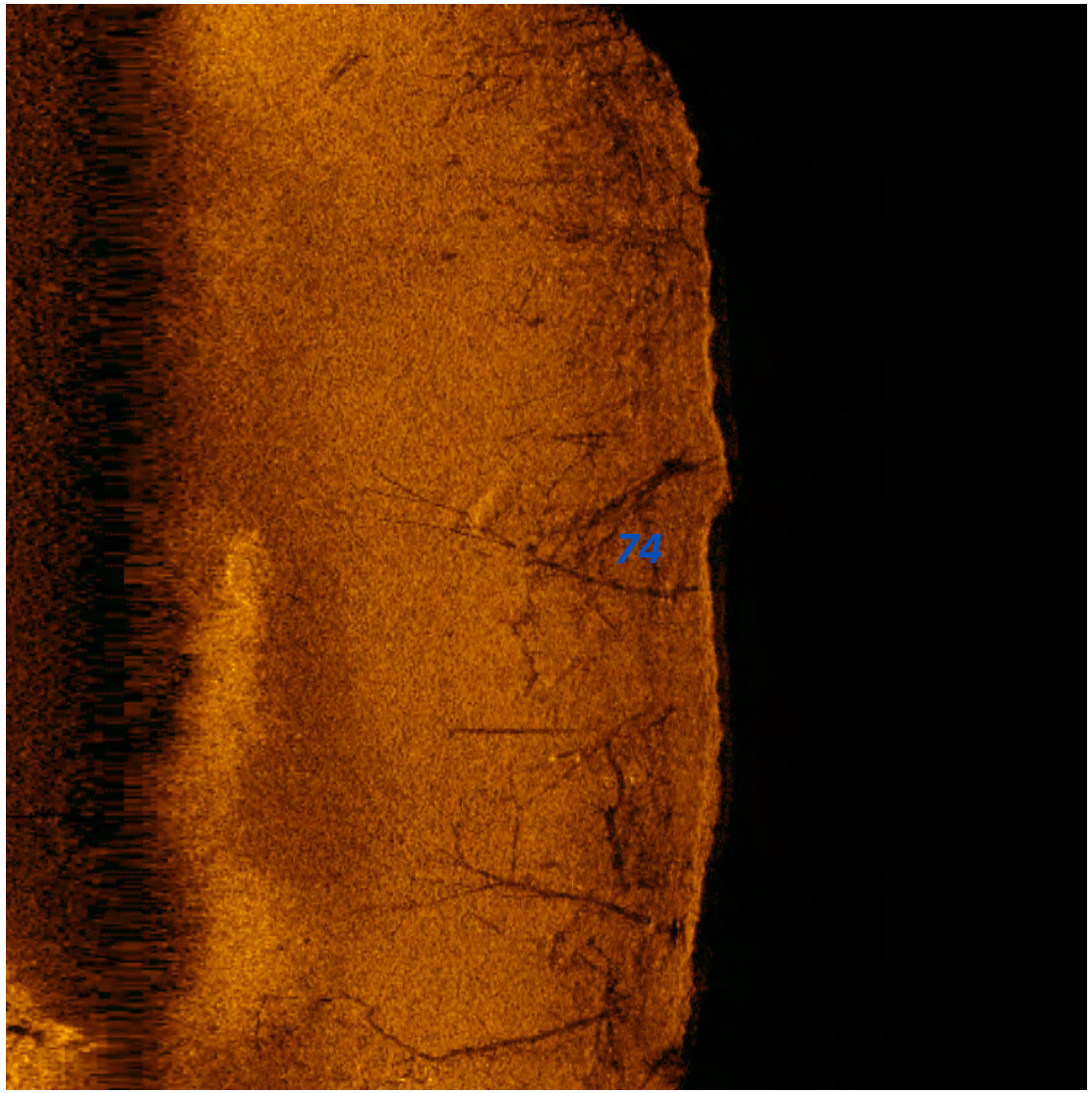


Marine Professionals Since 1919
BRENNAN

Photo ID: 74
Easting (X) 1483956.79
Northing (Y) 632073.03
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

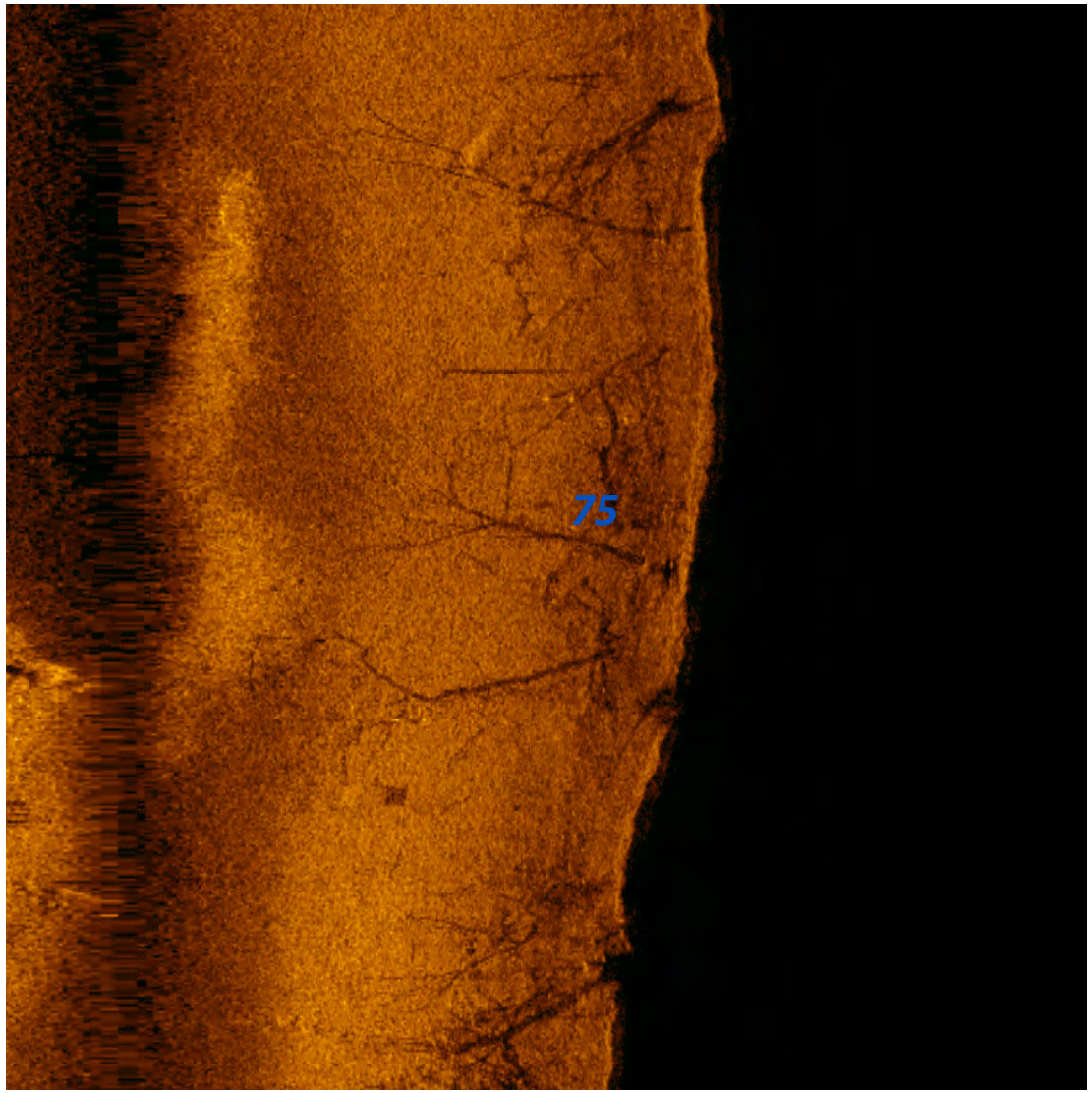


Marine Professionals Since 1919
BRENNAN

Photo ID: 75
Easting (X) 1483987.4
Northing (Y) 632044.39
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 1.75 US ft
- Target Width: 1.61 US ft
- Target Height: 5.84 US ft

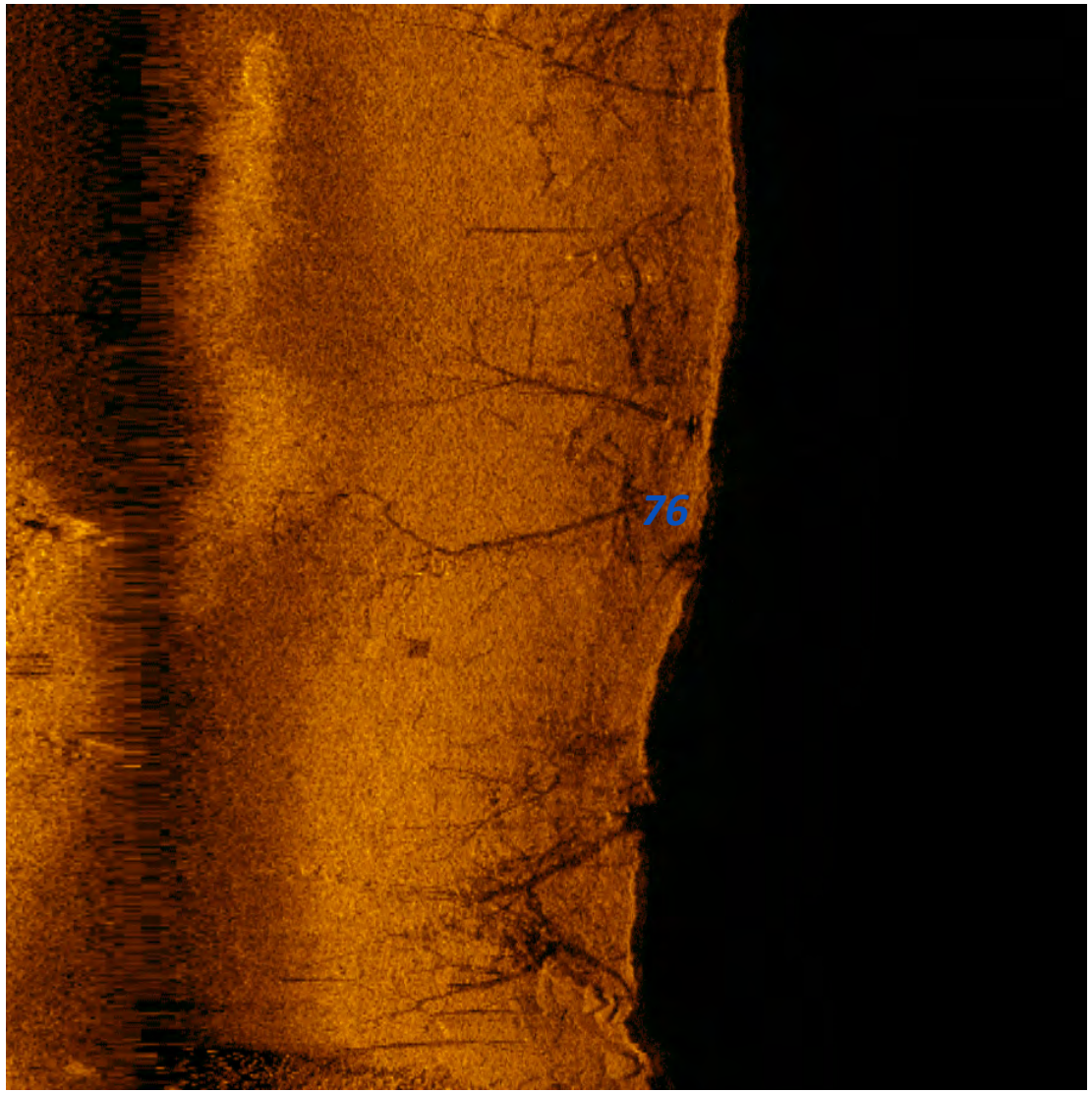


Marine Professionals Since 1919
BRENNAN

Photo ID: 76
Easting (X) 1484001.8
Northing (Y) 632035.7
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 7.49 US ft

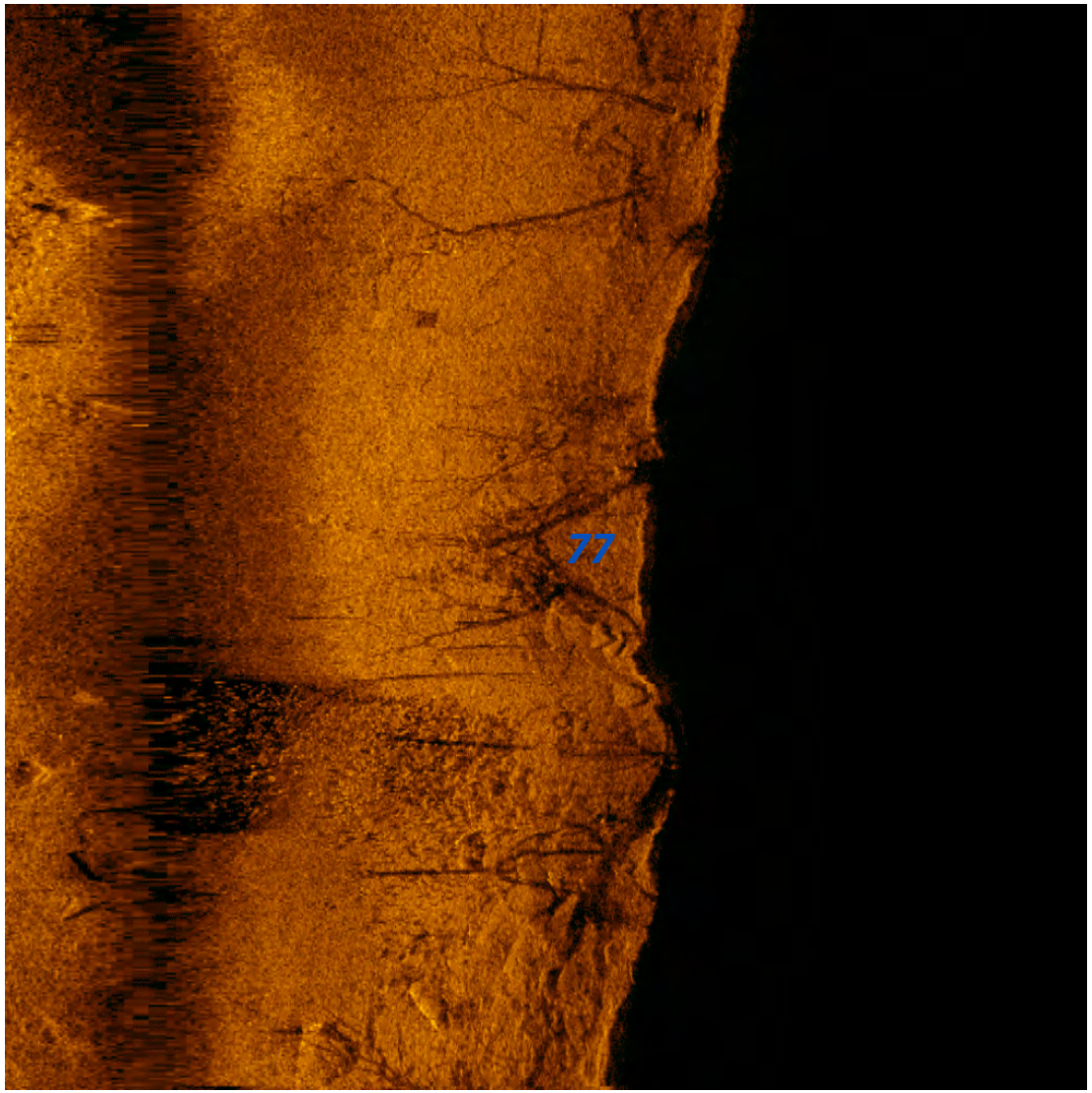


Marine Professionals Since 1919
BRENNAN

Photo ID: 77
Easting (X) 1484037.12
Northing (Y) 632008.26
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 5.58 US ft

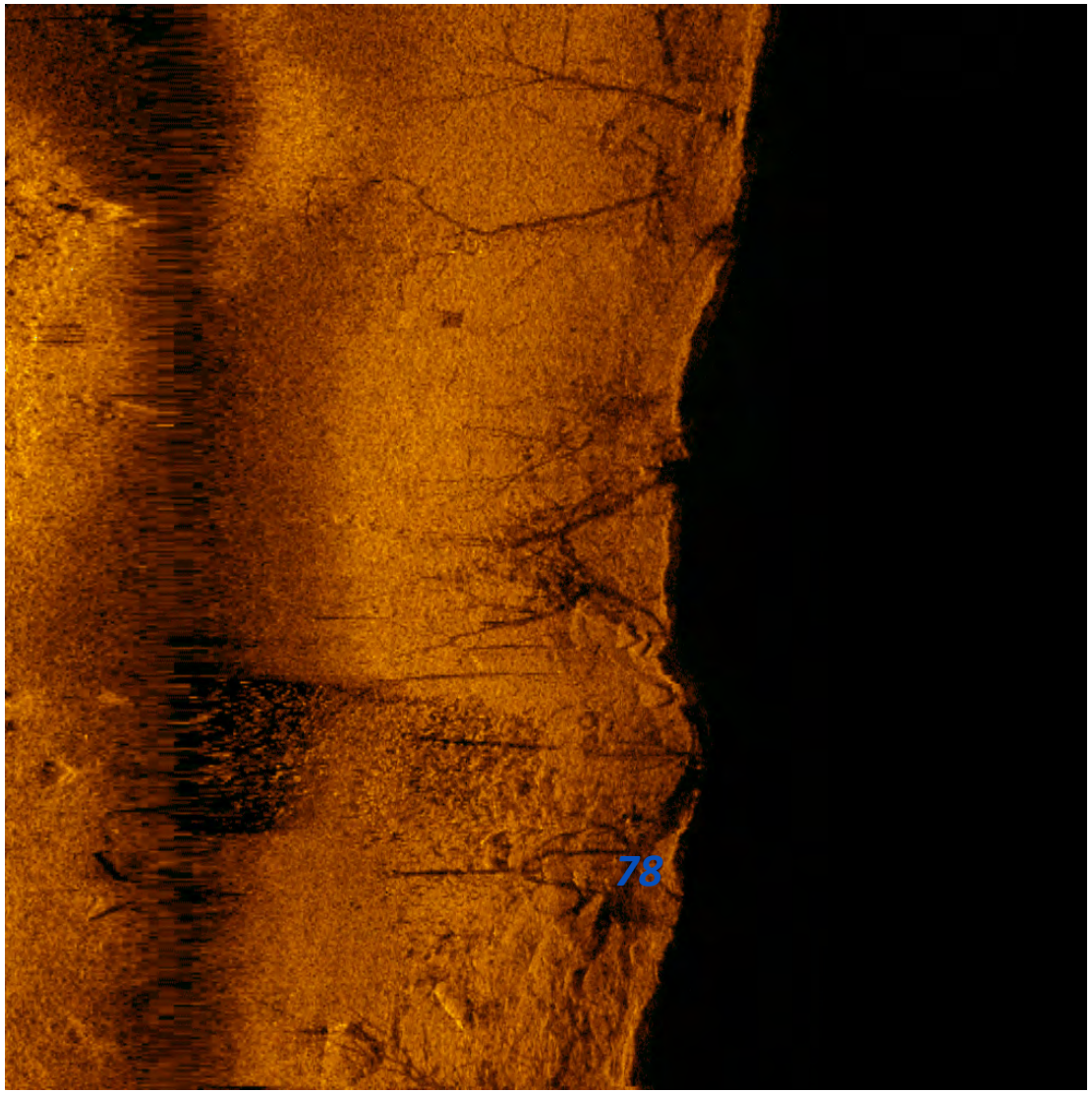


Marine Professionals Since 1919
BRENNAN

Photo ID: 78
Easting (X) 1484062.74
Northing (Y) 631991.03
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

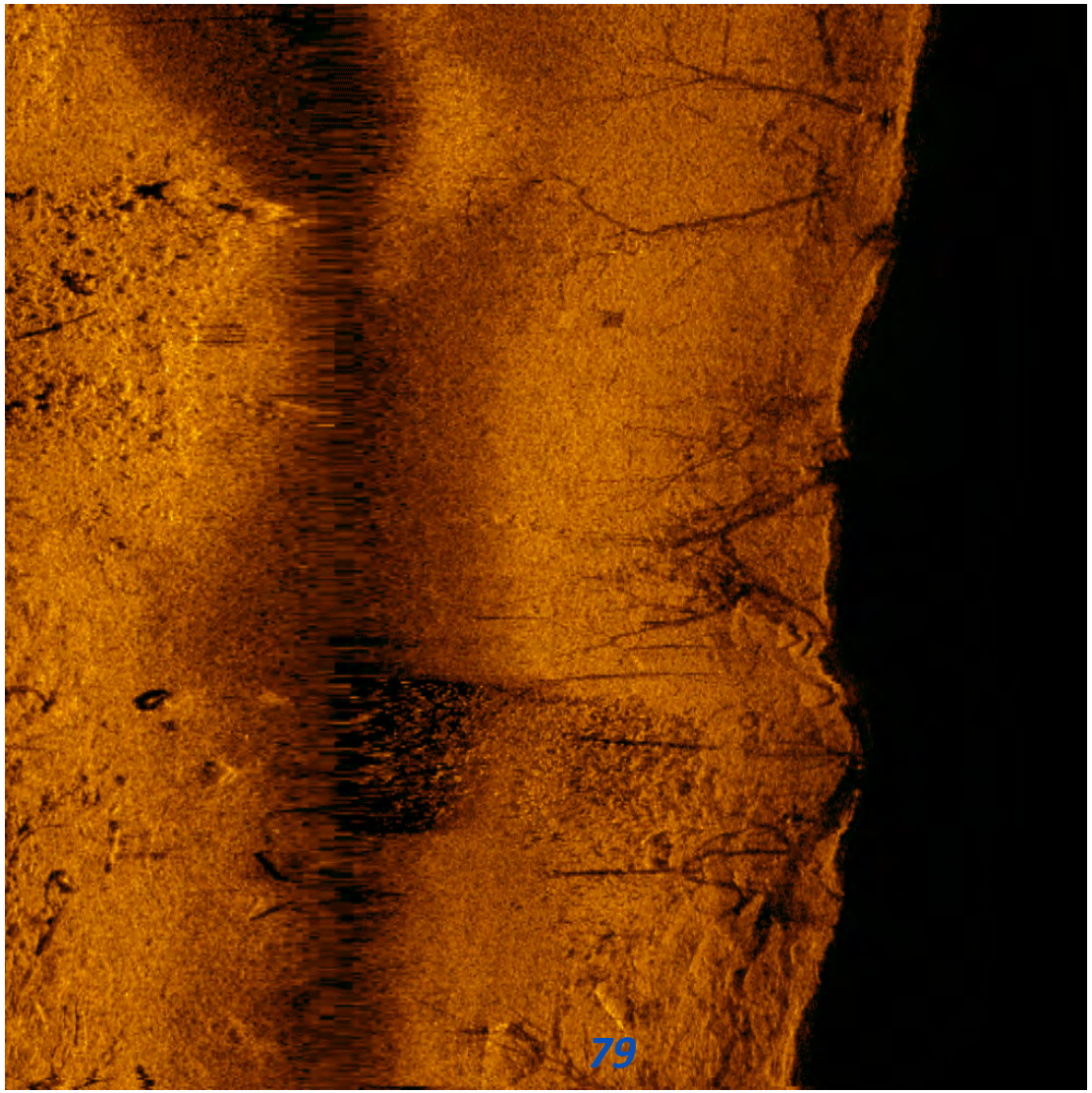


Marine Professionals Since 1919
BRENNAN

Photo ID: 79
Easting (X) 1484086.78
Northing (Y) 631994.21
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

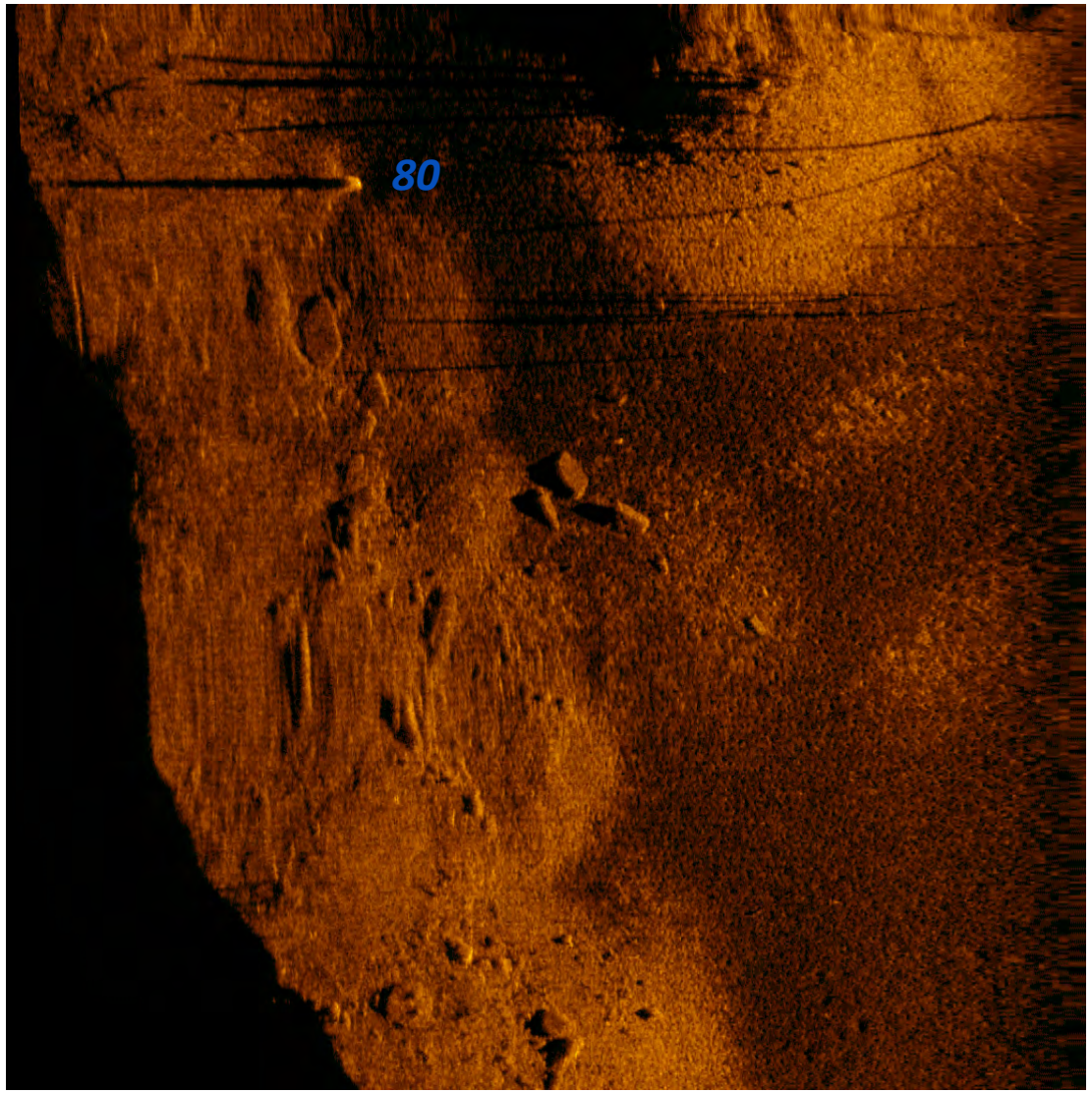


Marine Professionals Since 1919
BRENNAN

Photo ID: 80
Easting (X) 1484002.39
Northing (Y) 632226.79
Description: Potential Vertical Manmade Structure

Dimensions and attributes

- Target Length: 1.99 US ft
- Target Width: 1.82 US ft
- Target Height: 5.51 US ft

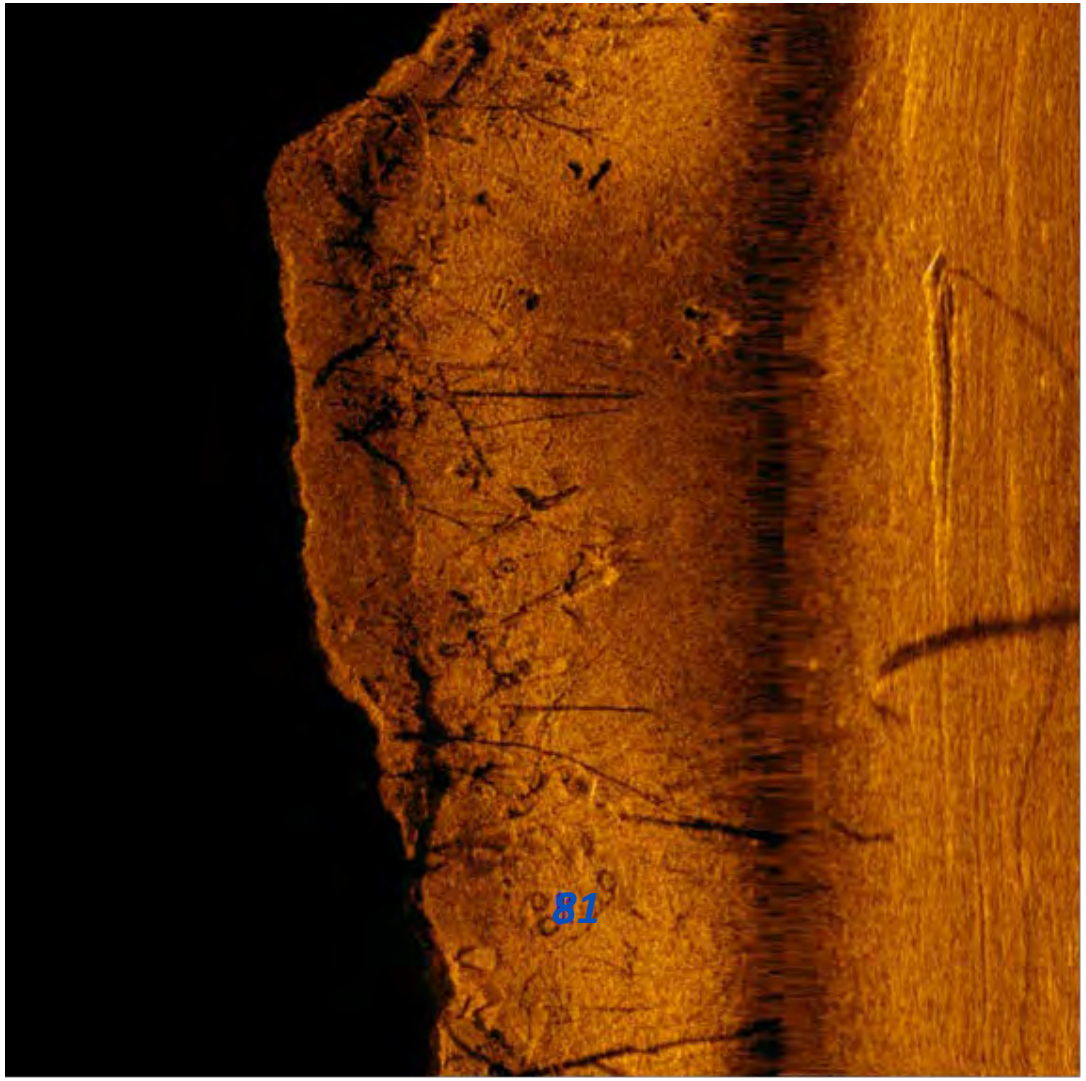


Marine Professionals Since 1919
BRENNAN

Photo ID: 81
Easting (X) 1484056.54
Northing (Y) 631997.07
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.35 US ft
- Target Width: 1.01 US ft
- Target Height: 0.00 US ft

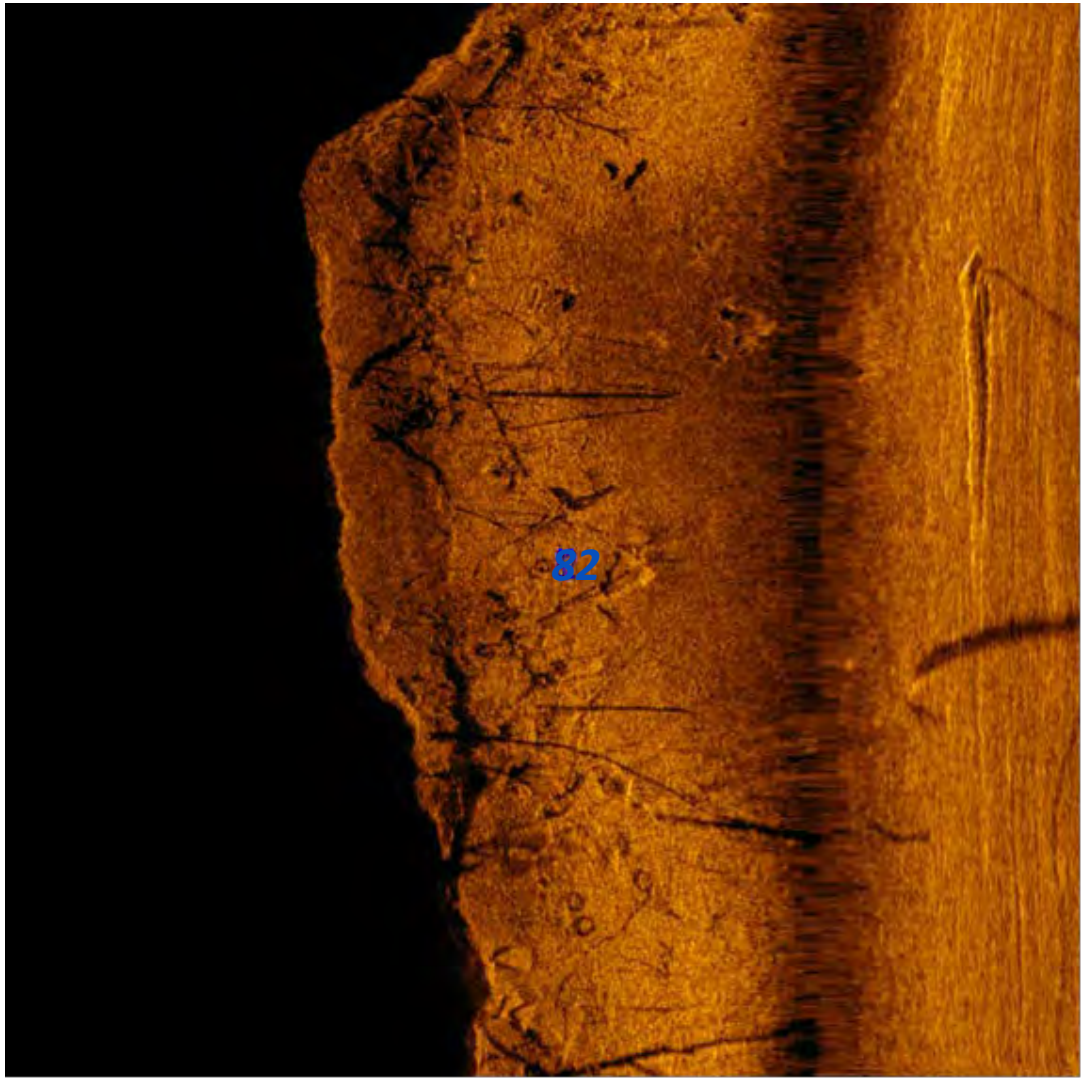


Marine Professionals Since 1919
BRENNAN

Photo ID: 82
Easting (X) 1484095.68
Northing (Y) 631991.96
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.47 US ft
- Target Width: 1.42 US ft
- Target Height: 0.00 US ft

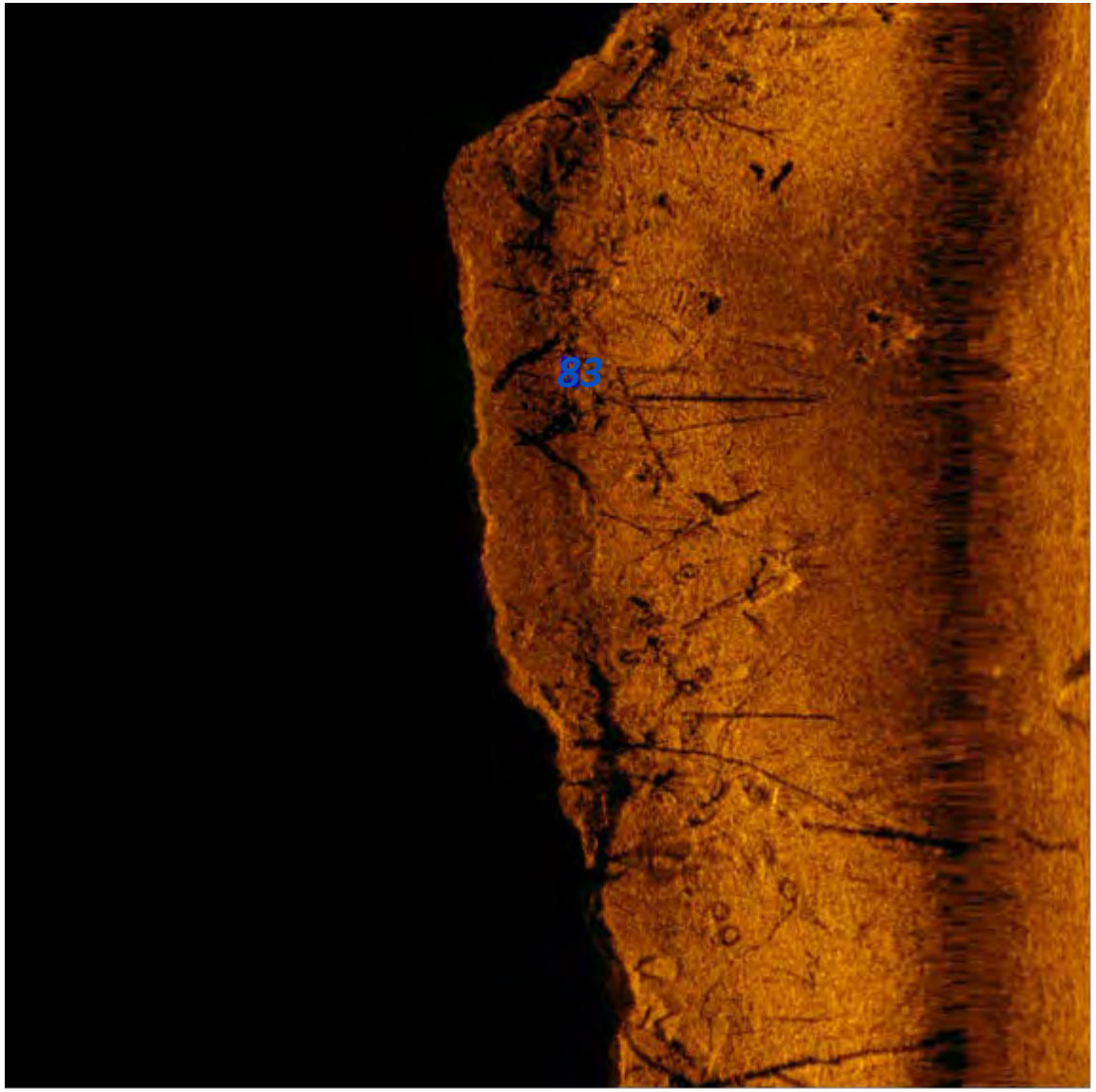


Marine Professionals Since 1919
BRENNAN

Photo ID: 83
Easting (X) 1484127.36
Northing (Y) 631995.98
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 6.45 US ft

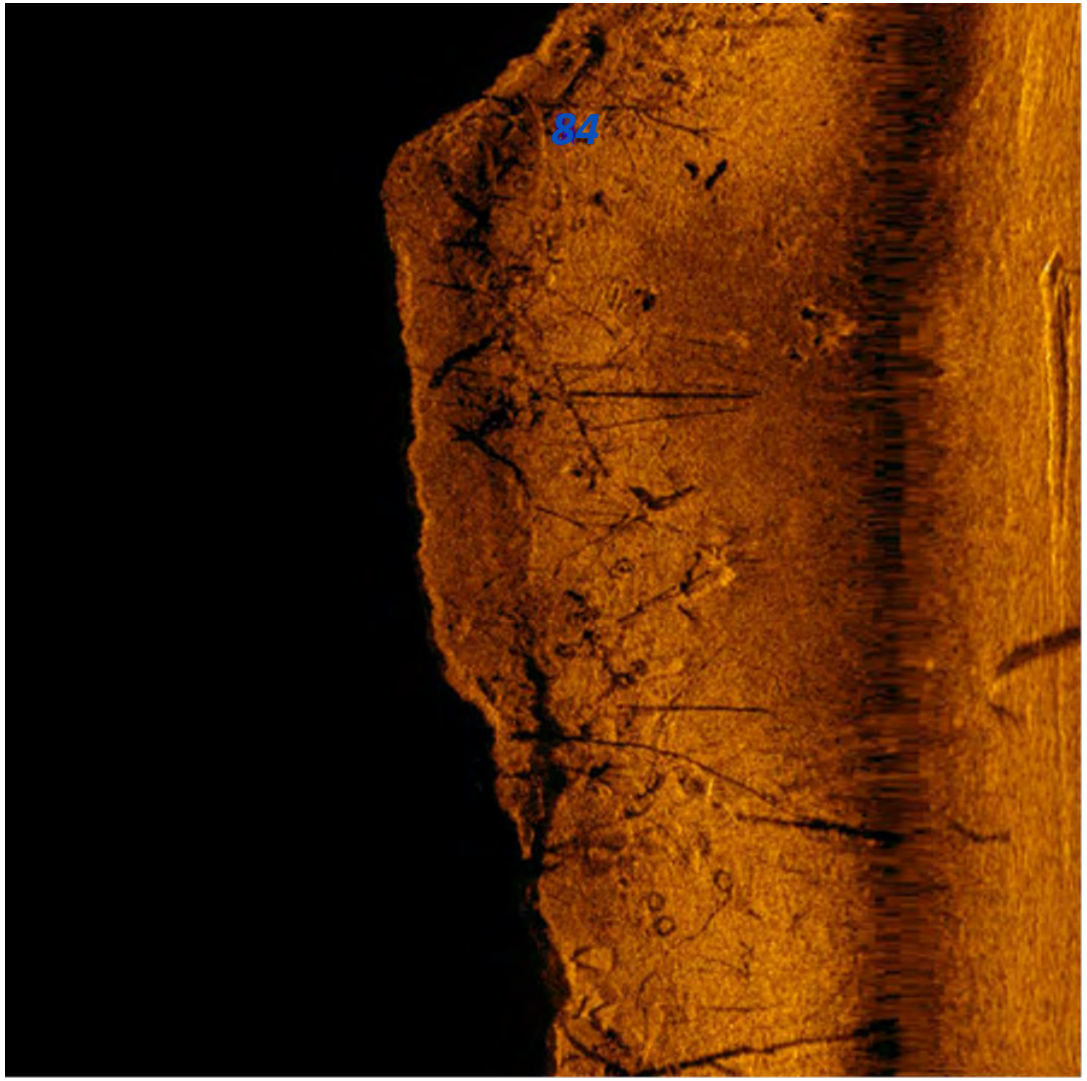


Marine Professionals Since 1919
BRENNAN

Photo ID: 84
Easting (X) 1484137.62
Northing (Y) 632030.75
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 6.29 US ft

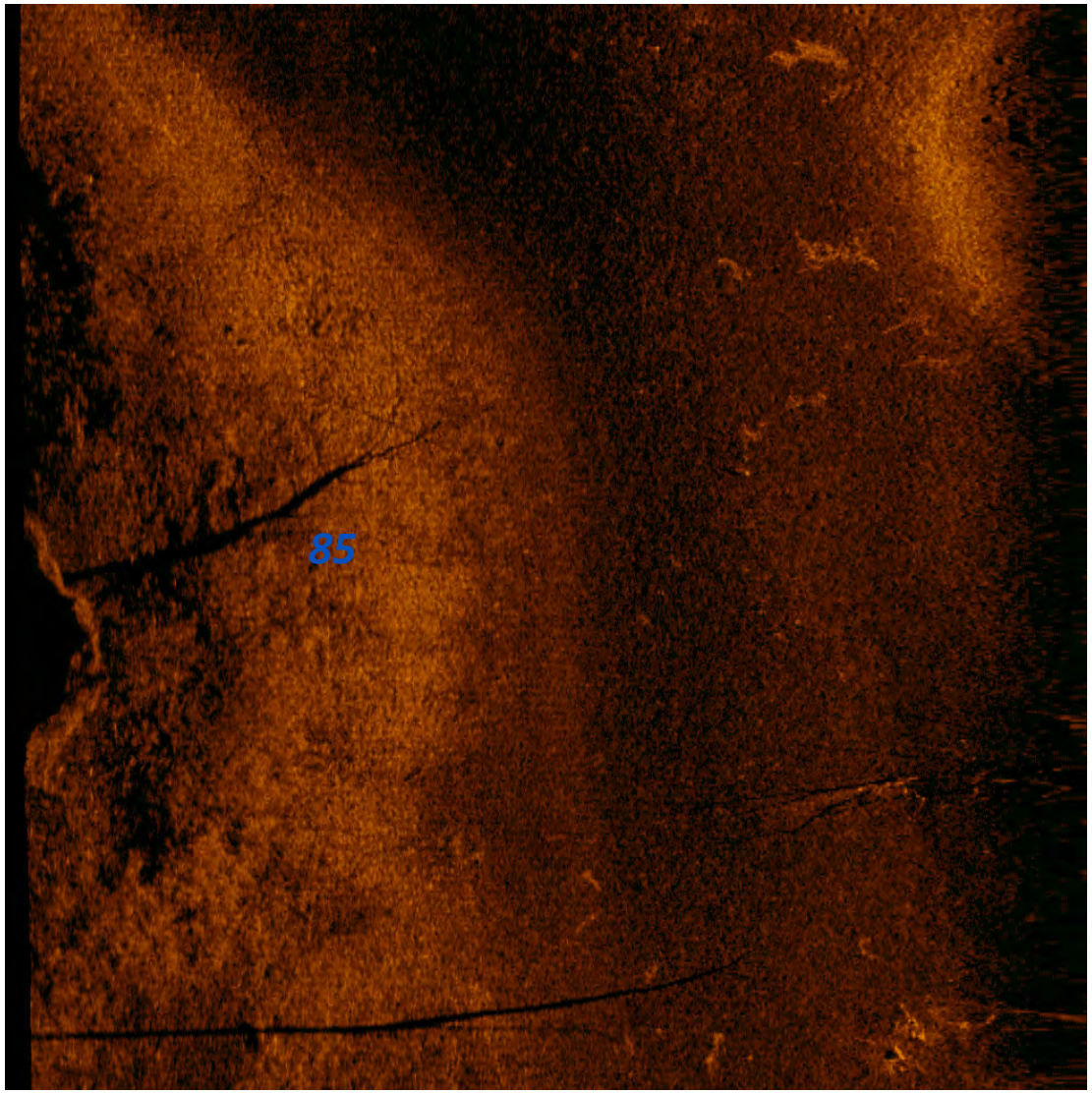


Marine Professionals Since 1919
BRENNAN

Photo ID: 85
Easting (X) 1484041.15
Northing (Y) 632530.2
Description: Potential Logs/Standing Trees

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 4.31 US ft

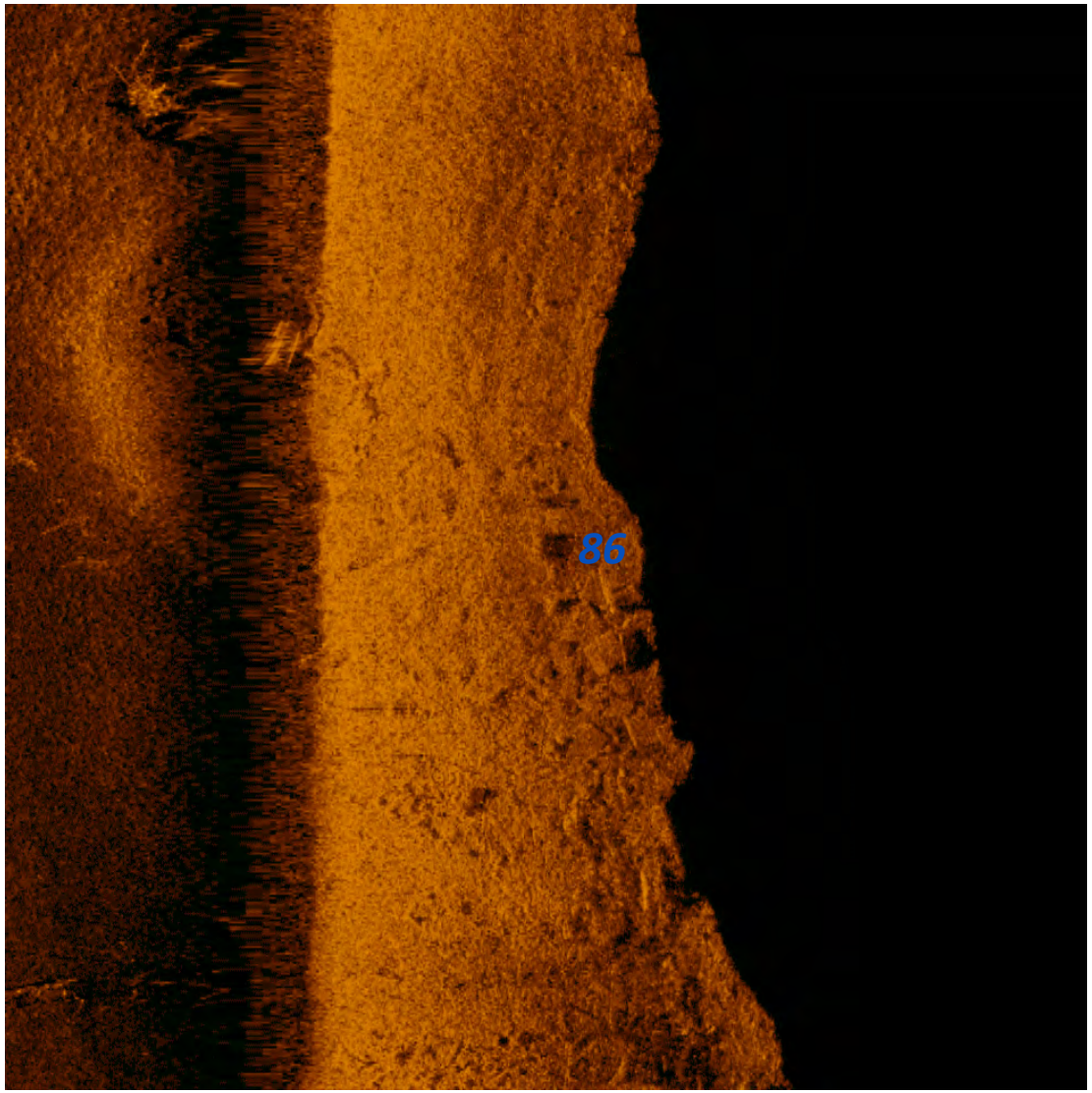


Marine Professionals Since 1919
BRENNAN

Photo ID: 86
Easting (X) 1484145.64
Northing (Y) 632446.68
Description: Potential Boulders

Dimensions and attributes

- Target Length: 2.61 US ft
- Target Width: 2.23 US ft
- Target Height: 0.91 US ft

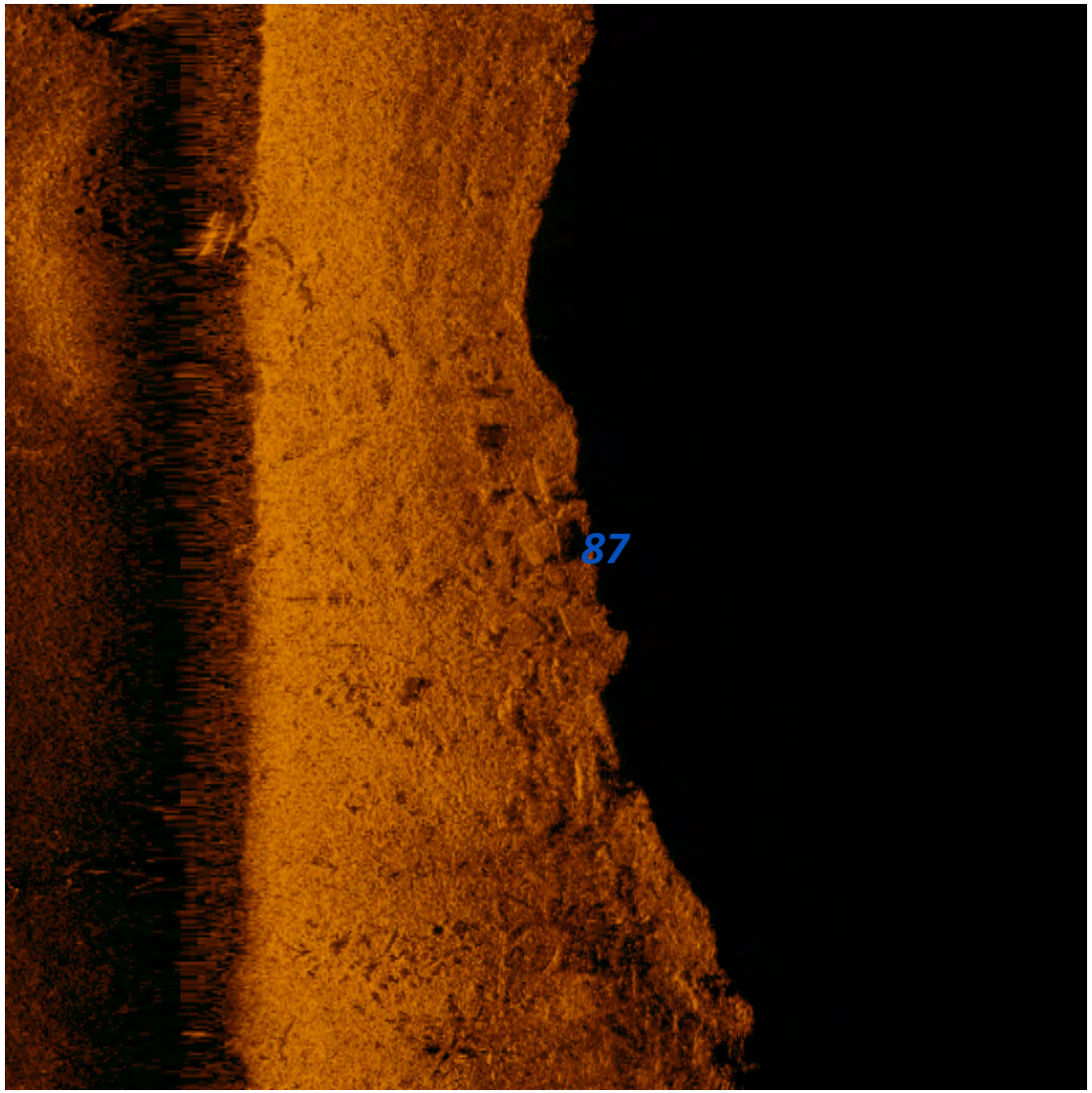


Marine Professionals Since 1919
BRENNAN

Photo ID: 87
Easting (X) 1484157.95
Northing (Y) 632453.79
Description: Potential Manmade Debris

Dimensions and attributes

- Target Length: 3.95 US ft
- Target Width: 3.33 US ft
- Target Height: 1.11 US ft

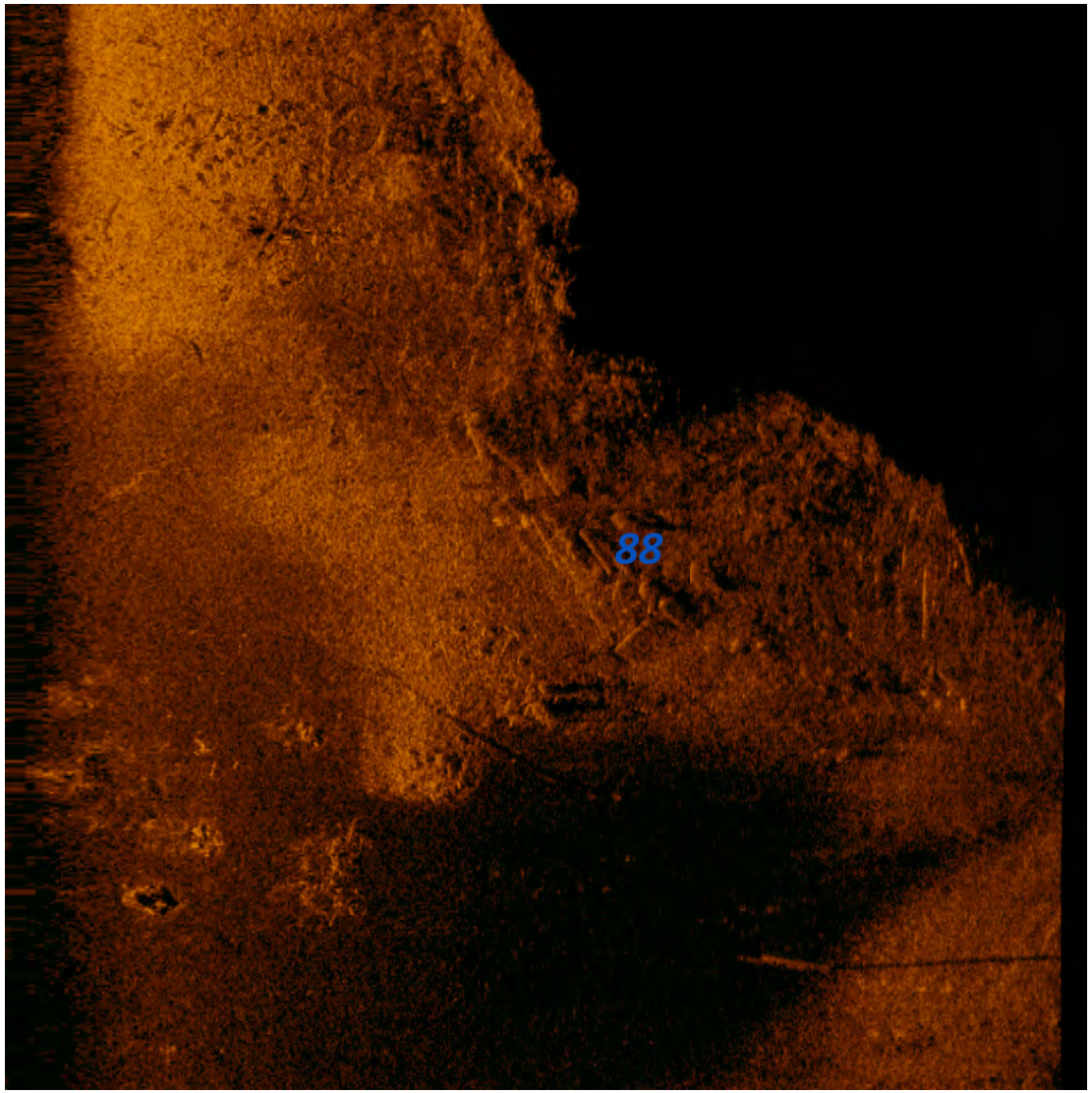


Marine Professionals Since 1919
BRENNAN

Photo ID: 88
Easting (X) 1484224.49
Northing (Y) 632527.62
Description: Potential Manmade Debris

Dimensions and attributes

- Target Length: 5.67 US ft
- Target Width: 1.01 US ft
- Target Height: 0.00 US ft

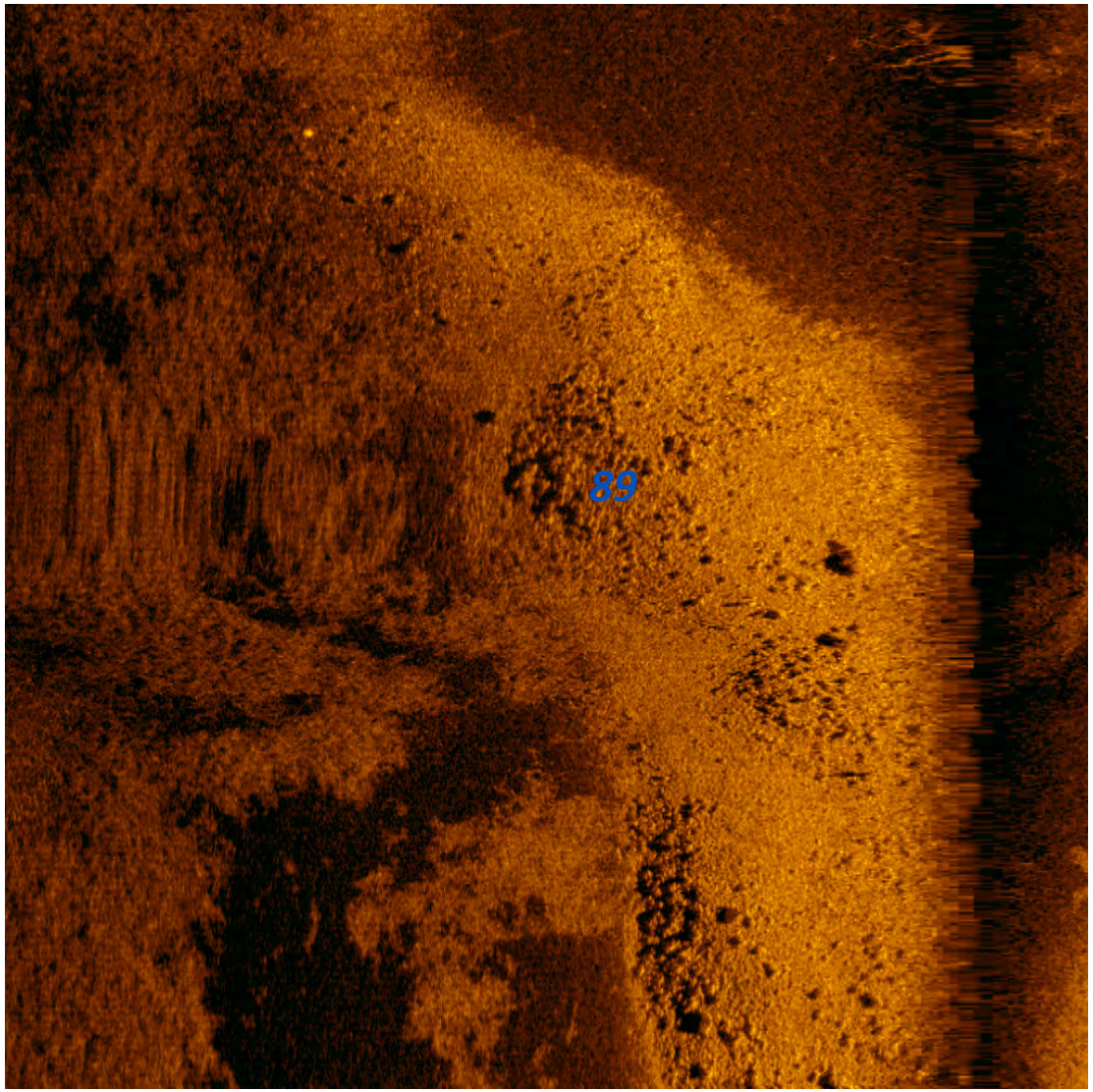


Marine Professionals Since 1919
BRENNAN

Photo ID: 89
Easting (X) 1484141.51
Northing (Y) 632631.7
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

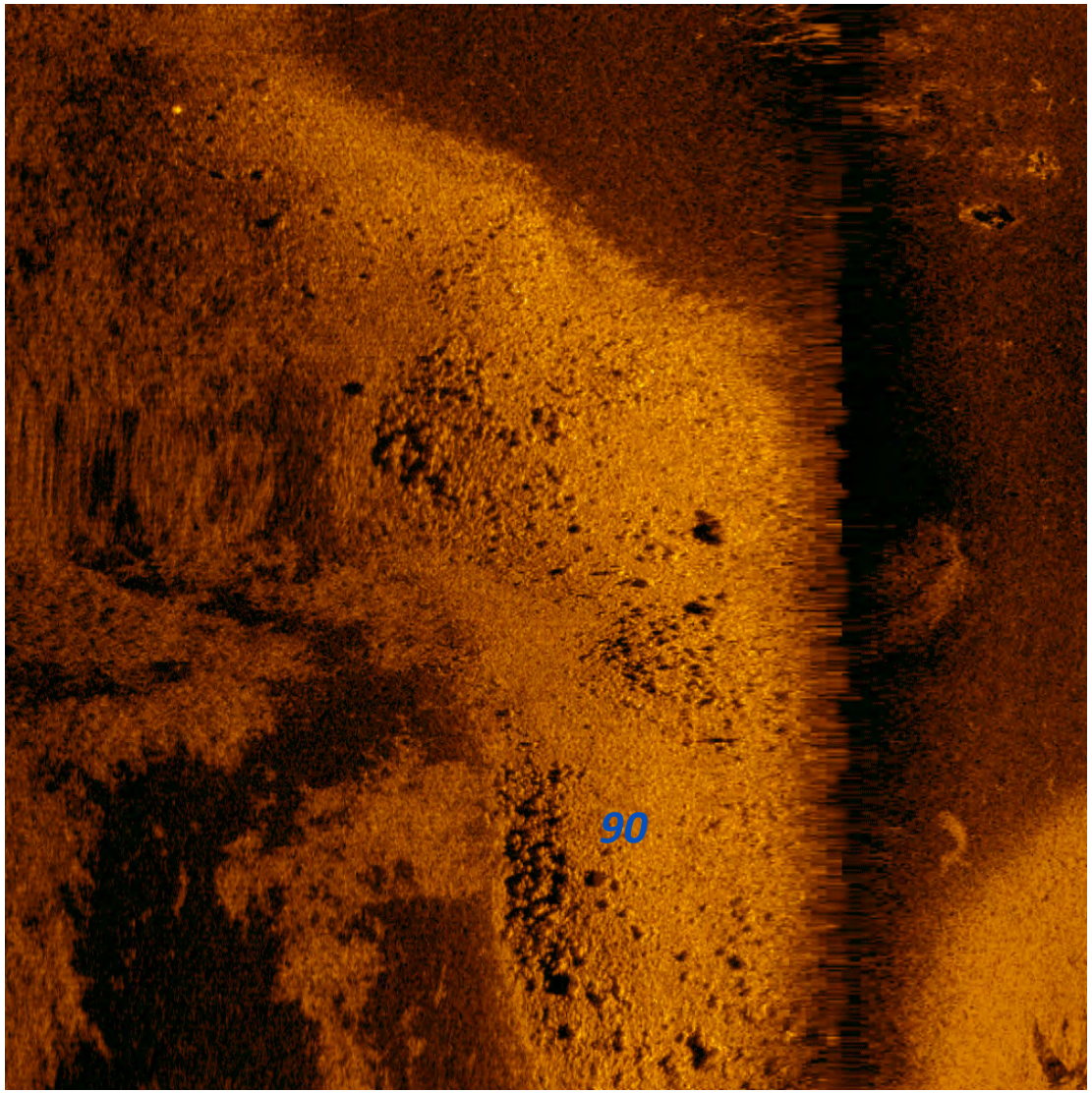


Marine Professionals Since 1919
BRENNAN

Photo ID: 90
Easting (X) 1484170.41
Northing (Y) 632676.26
Description: Potential Boulders/ Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

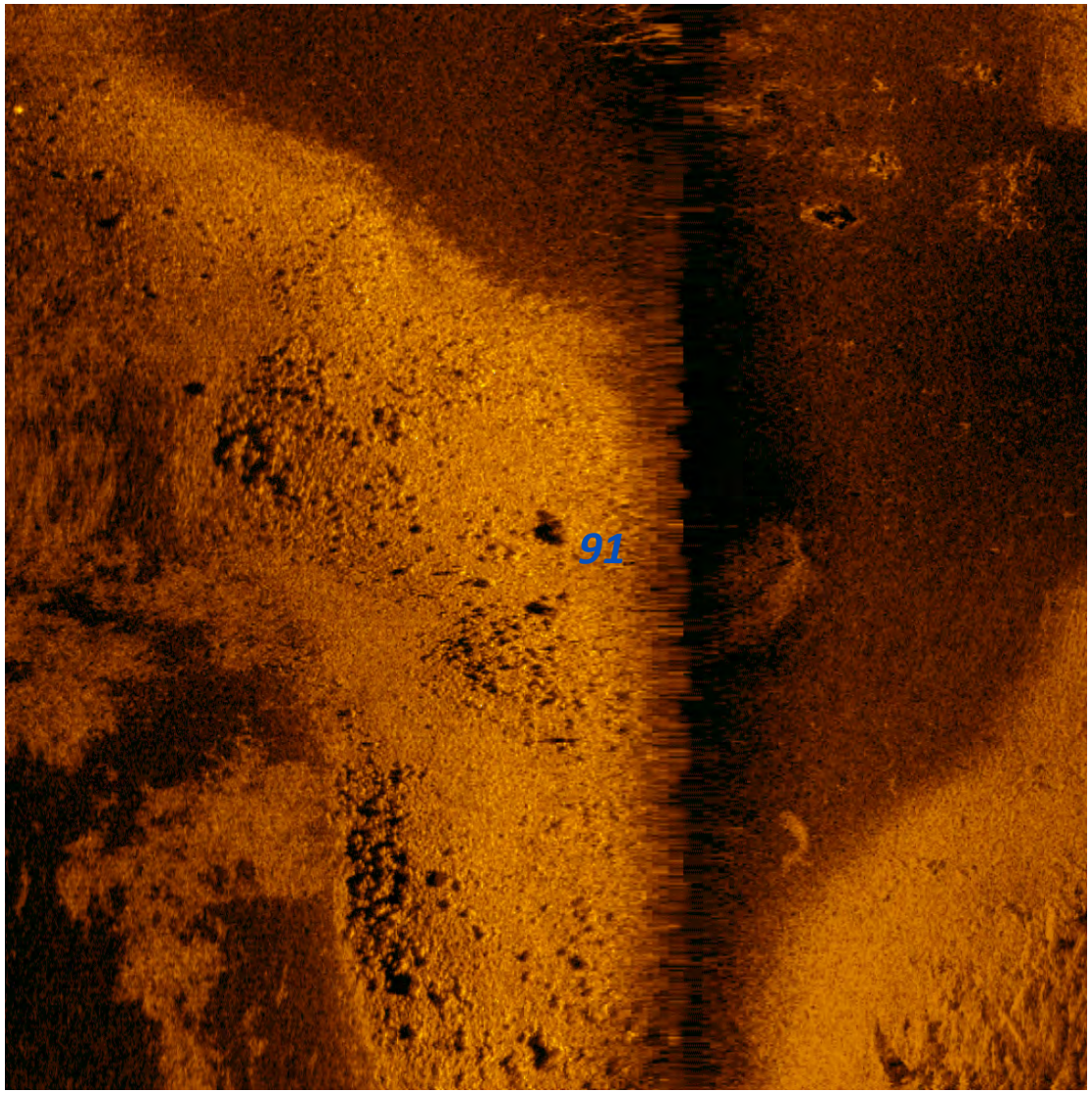


Marine Professionals Since 1919
BRENNAN

Photo ID: 91
Easting (X) 1484178.21
Northing (Y) 632643.63
Description: Potential Boulders/Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

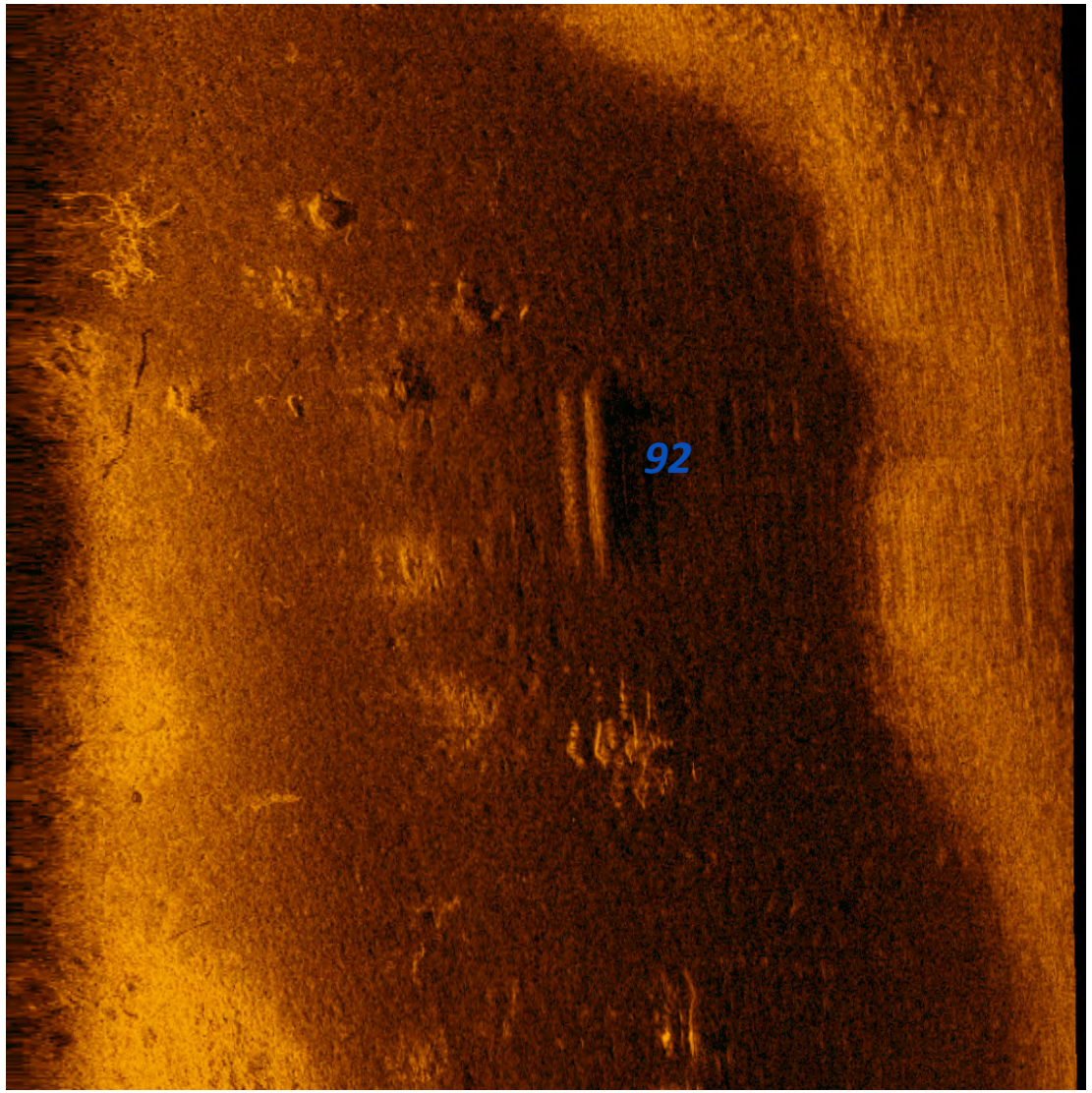


Marine Professionals Since 1919
BRENNAN

Photo ID: 92
Easting (X) 1484163.63
Northing (Y) 632581.74
Description: Potential Logs

Dimensions and attributes

- Target Length: 21.03 US ft
- Target Width: 1.67 US ft
- Target Height: 0.79 US ft

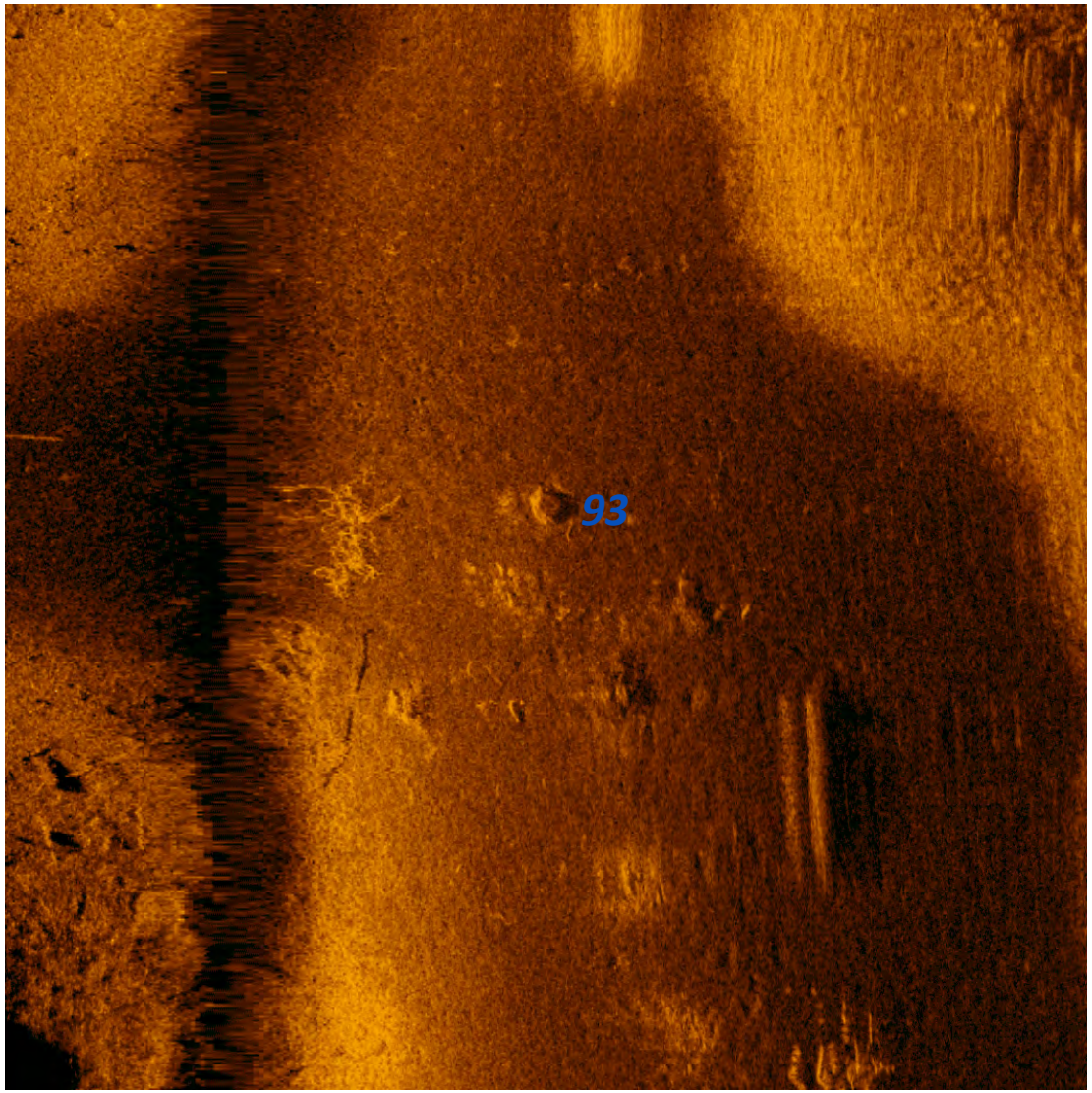


Marine Professionals Since 1919
BRENNAN

Photo ID: 93
Easting (X) 1484196.89
Northing (Y) 632585.6
Description: Potential Boulder

Dimensions and attributes

- Target Length: 3.73 US ft
- Target Width: 3.62 US ft
- Target Height: 0.00 US ft

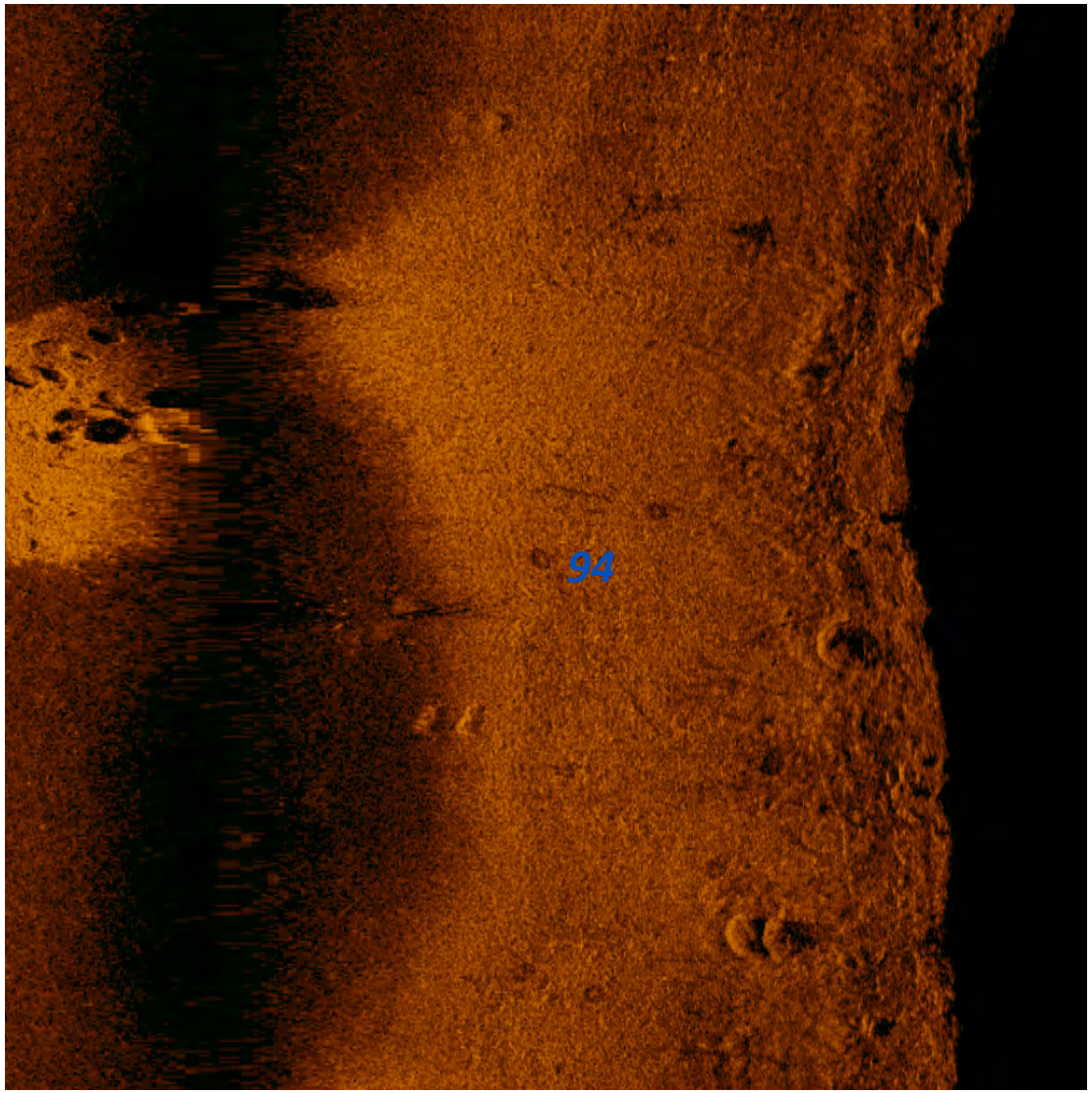


Marine Professionals Since 1919
BRENNAN

Photo ID: 94
Easting (X) 1483862.84
Northing (Y) 633057.28
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.86 US ft
- Target Width: 1.74 US ft
- Target Height: 0.00 US ft

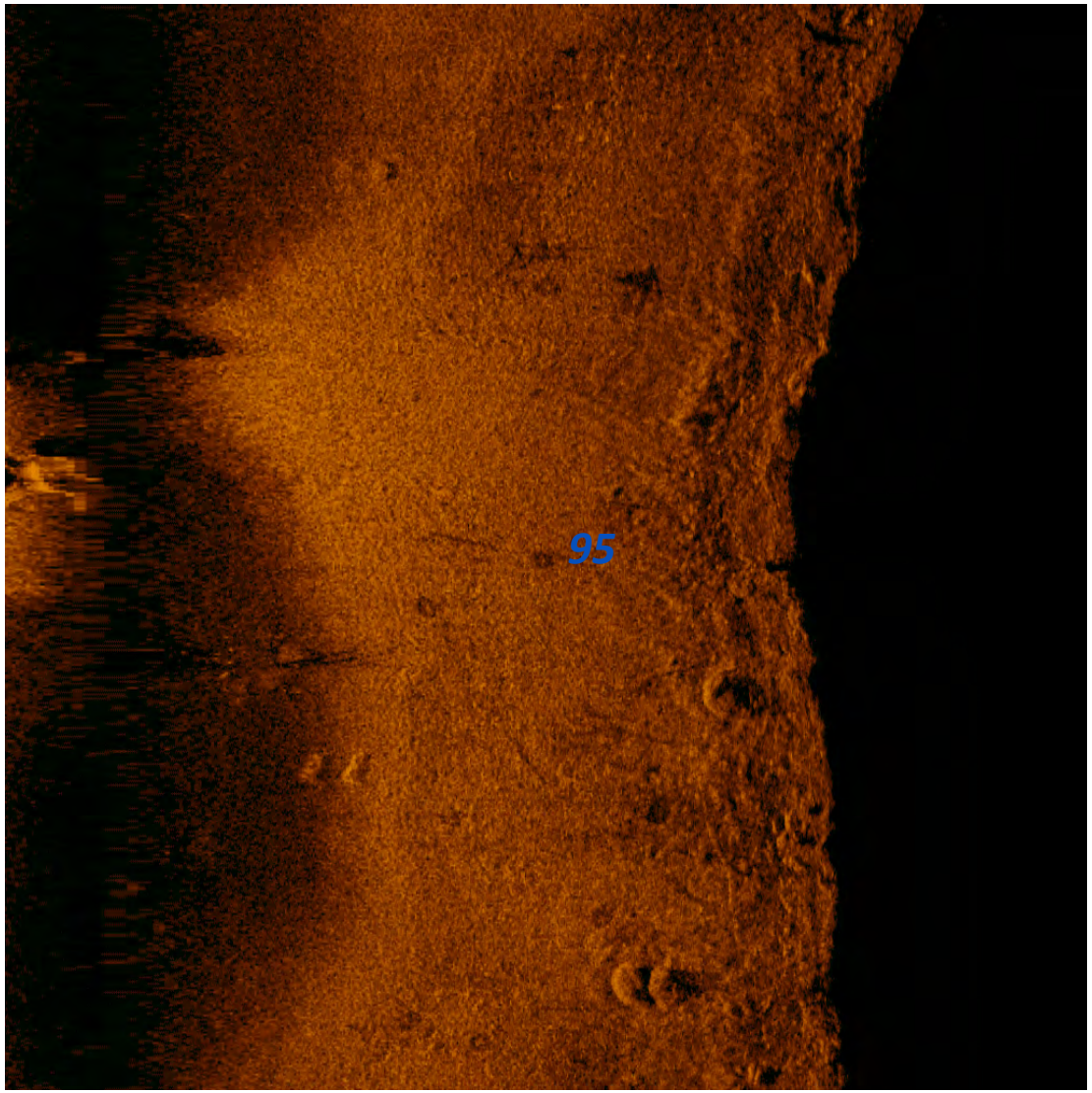


Marine Professionals Since 1919
BRENNAN

Photo ID: 95
Easting (X) 1483872.25
Northing (Y) 633067.08
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.65 US ft
- Target Width: 1.54 US ft
- Target Height: 0.00 US ft

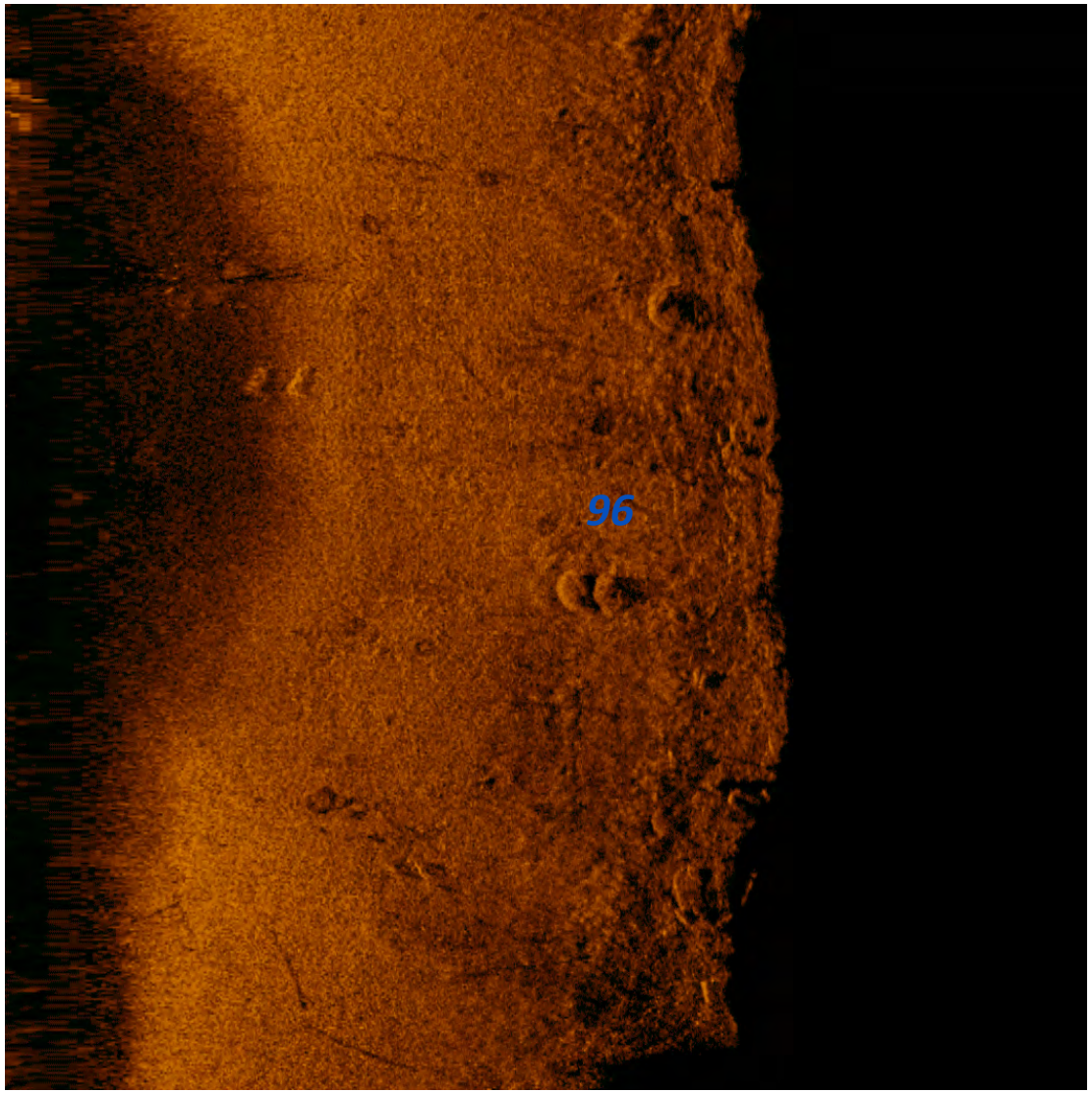


Marine Professionals Since 1919
BRENNAN

Photo ID: 96
Easting (X) 1483837.92
Northing (Y) 633089.1
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.74 US ft
- Target Width: 2.03 US ft
- Target Height: 0.00 US ft

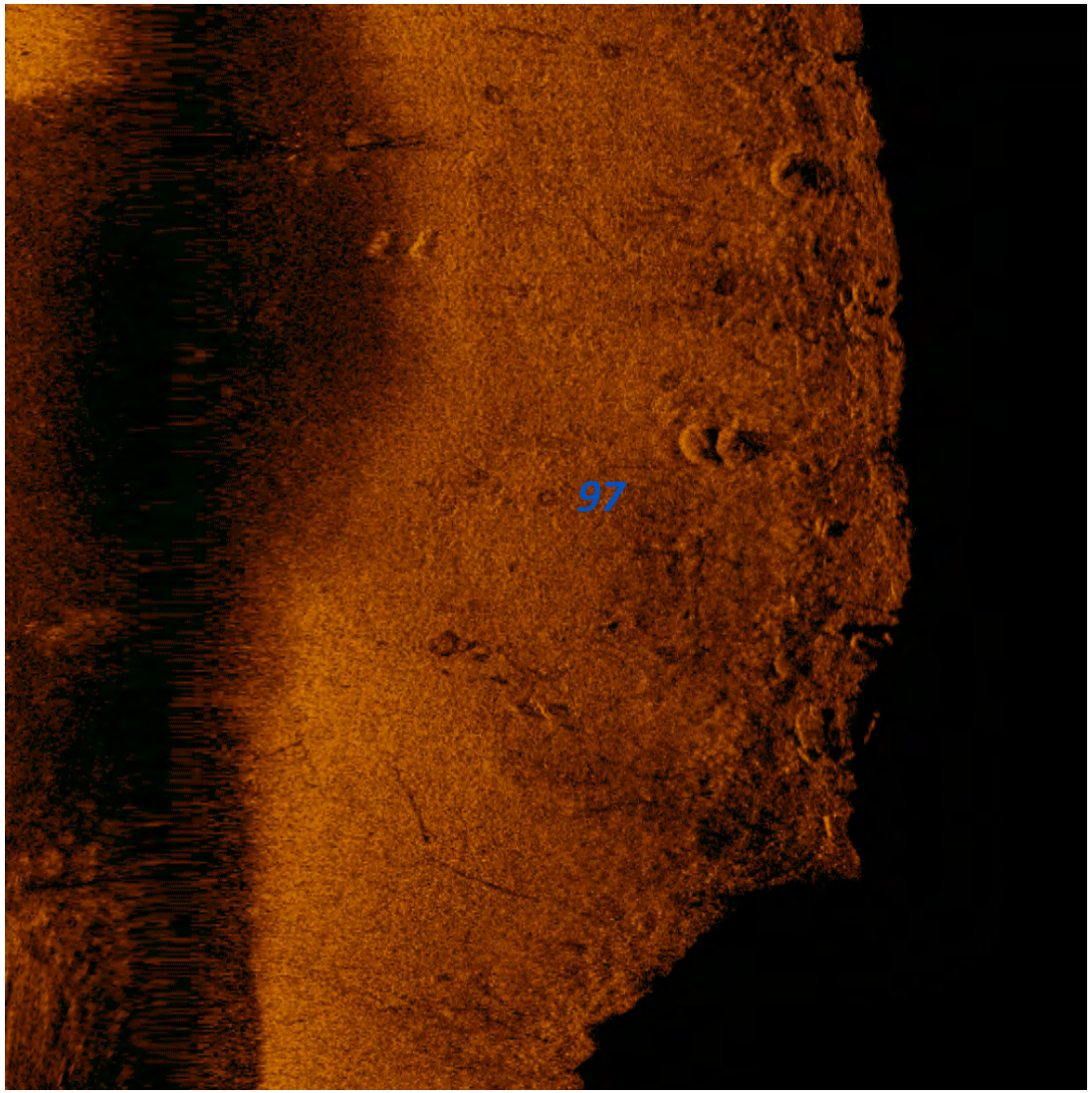


Marine Professionals Since 1919
BRENNAN

Photo ID: 97
Easting (X) 1483818.11
Northing (Y) 633082.57
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.72 US ft
- Target Width: 1.86 US ft
- Target Height: 0.00 US ft

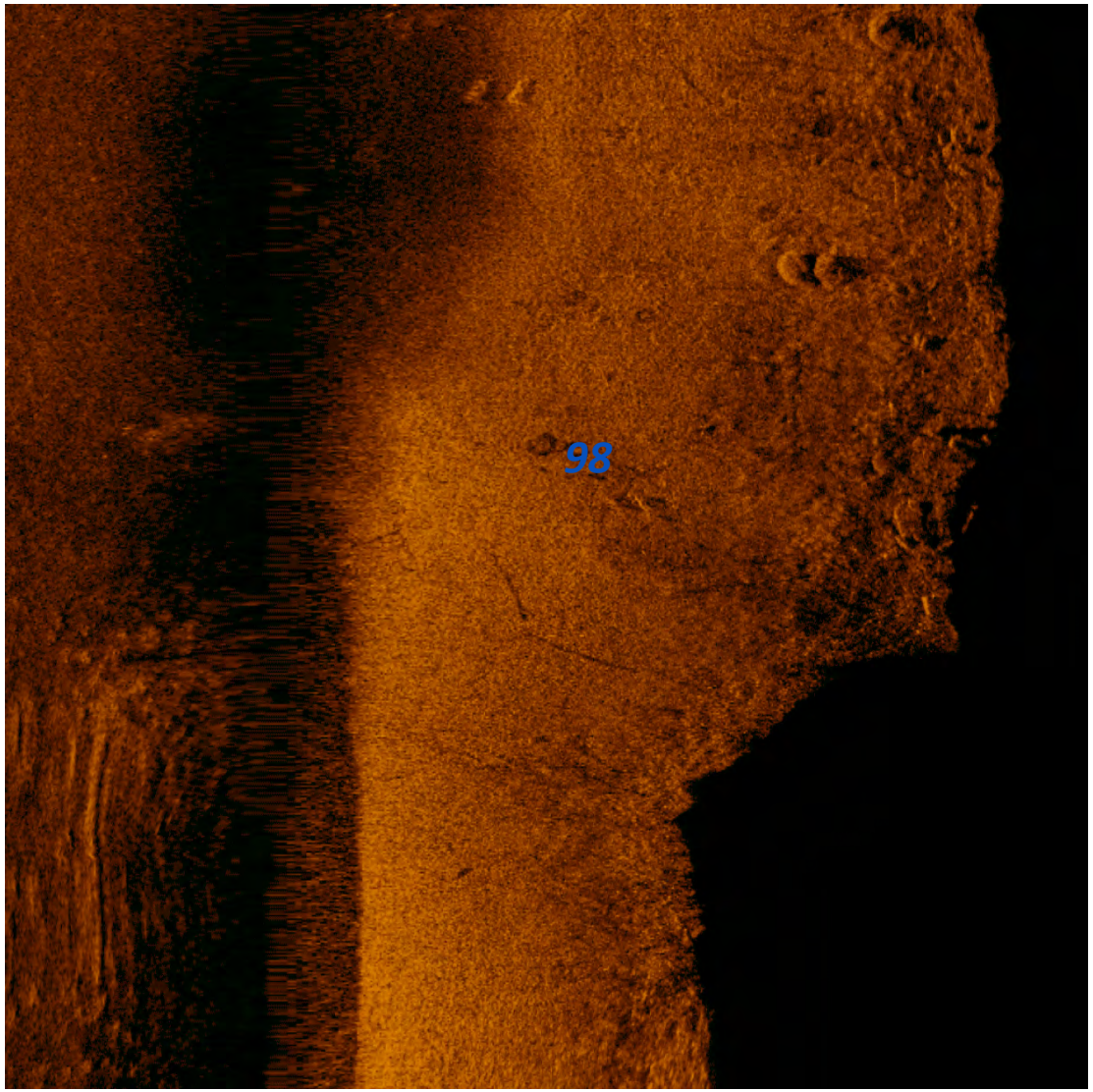


Marine Professionals Since 1919
BRENNAN

Photo ID: 98
Easting (X) 1483795.53
Northing (Y) 633079.04
Description: Potential Tire

Dimensions and attributes

- Target Length: 2.12 US ft
- Target Width: 2.15 US ft
- Target Height: 0.78 US ft

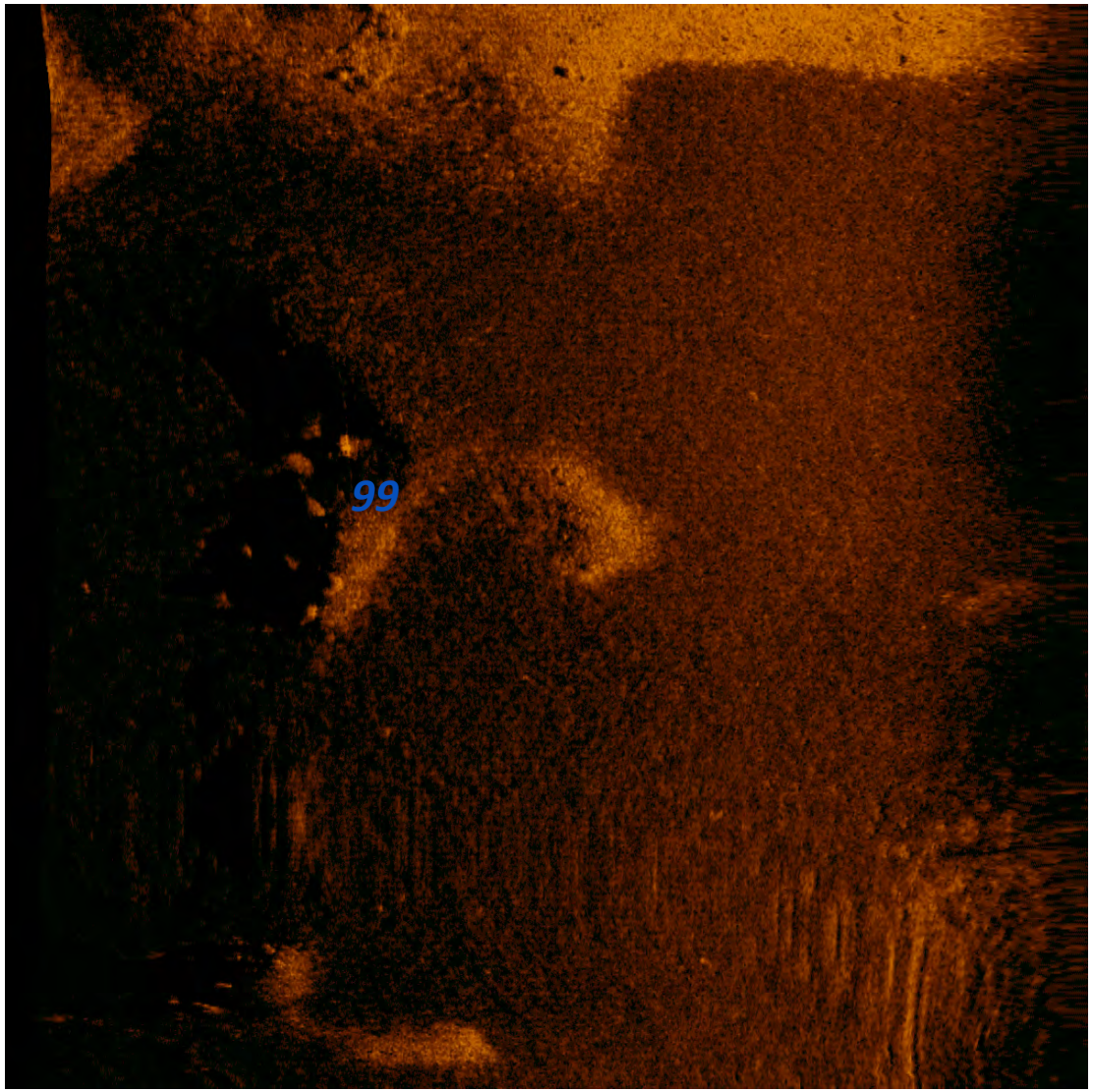


Marine Professionals Since 1919
BRENNAN

Photo ID: 99
Easting (X) 1483769.31
Northing (Y) 632963.58
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

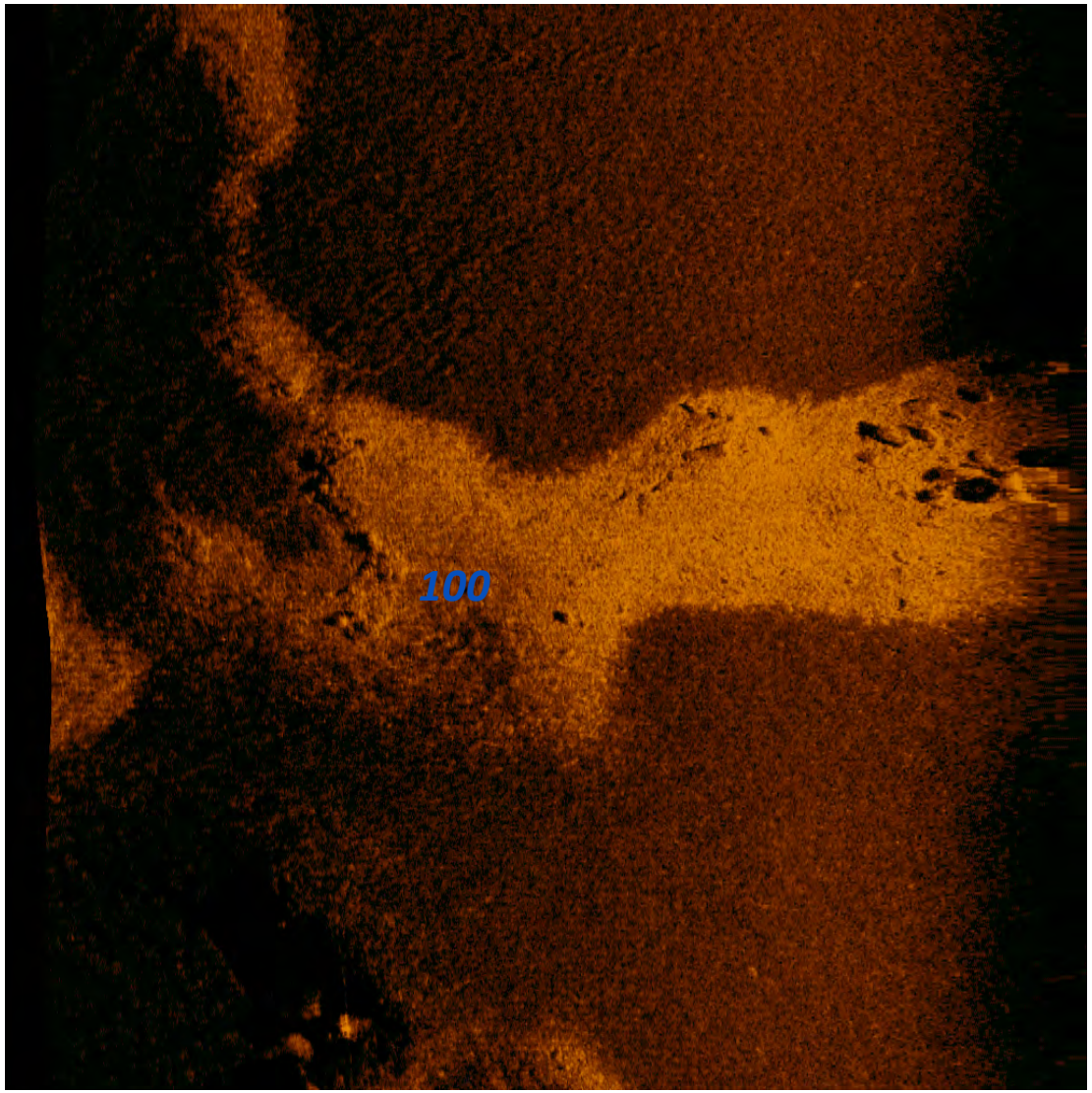


Marine Professionals Since 1919
BRENNAN

Photo ID: 100
Easting (X) 1483824.01
Northing (Y) 632949.4
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

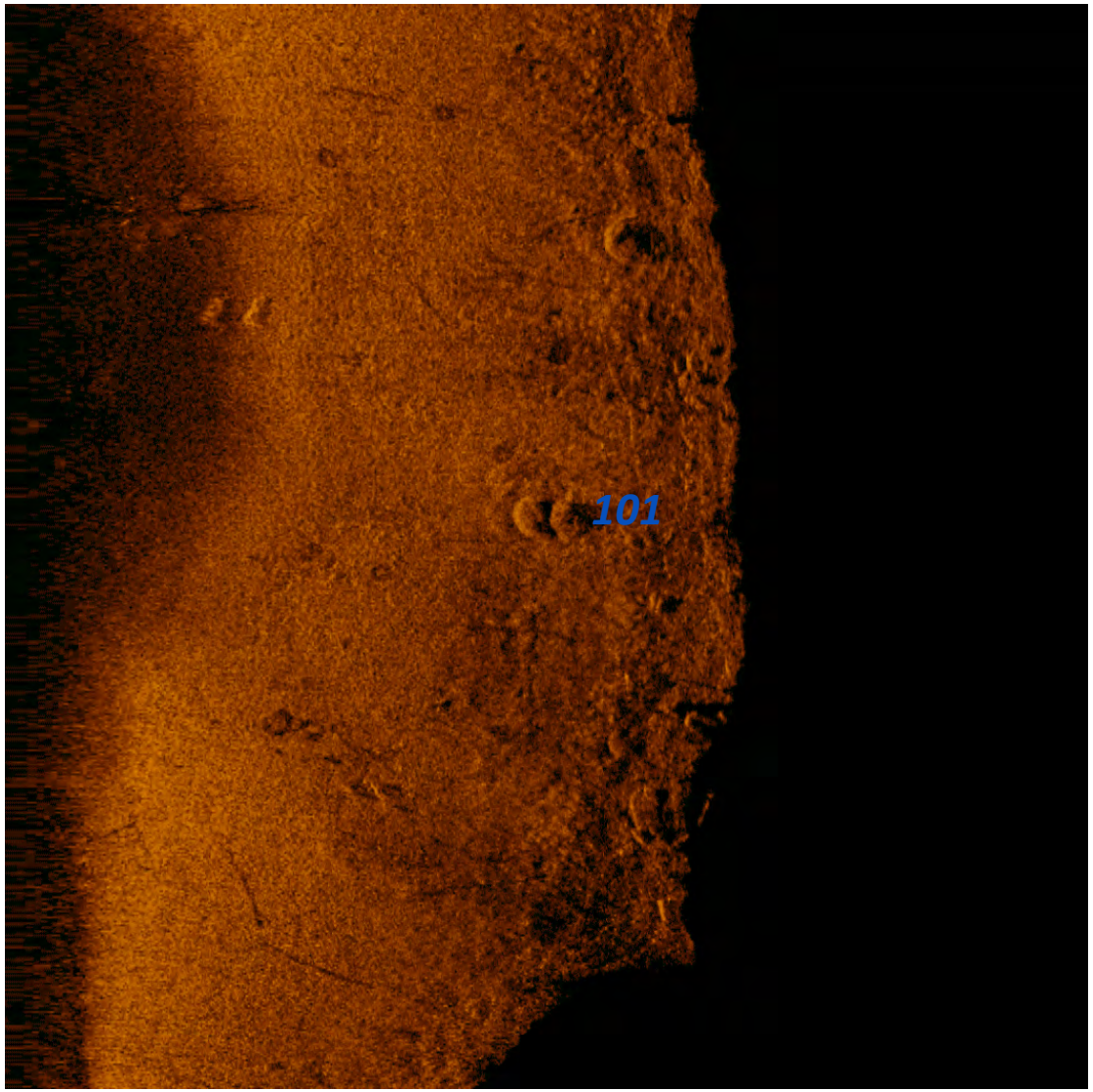


Marine Professionals Since 1919
BRENNAN

Photo ID: 101
Easting (X) 1483832.71
Northing (Y) 633097.48
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.26 US ft
- Target Width: 3.26 US ft
- Target Height: 0.91 US ft

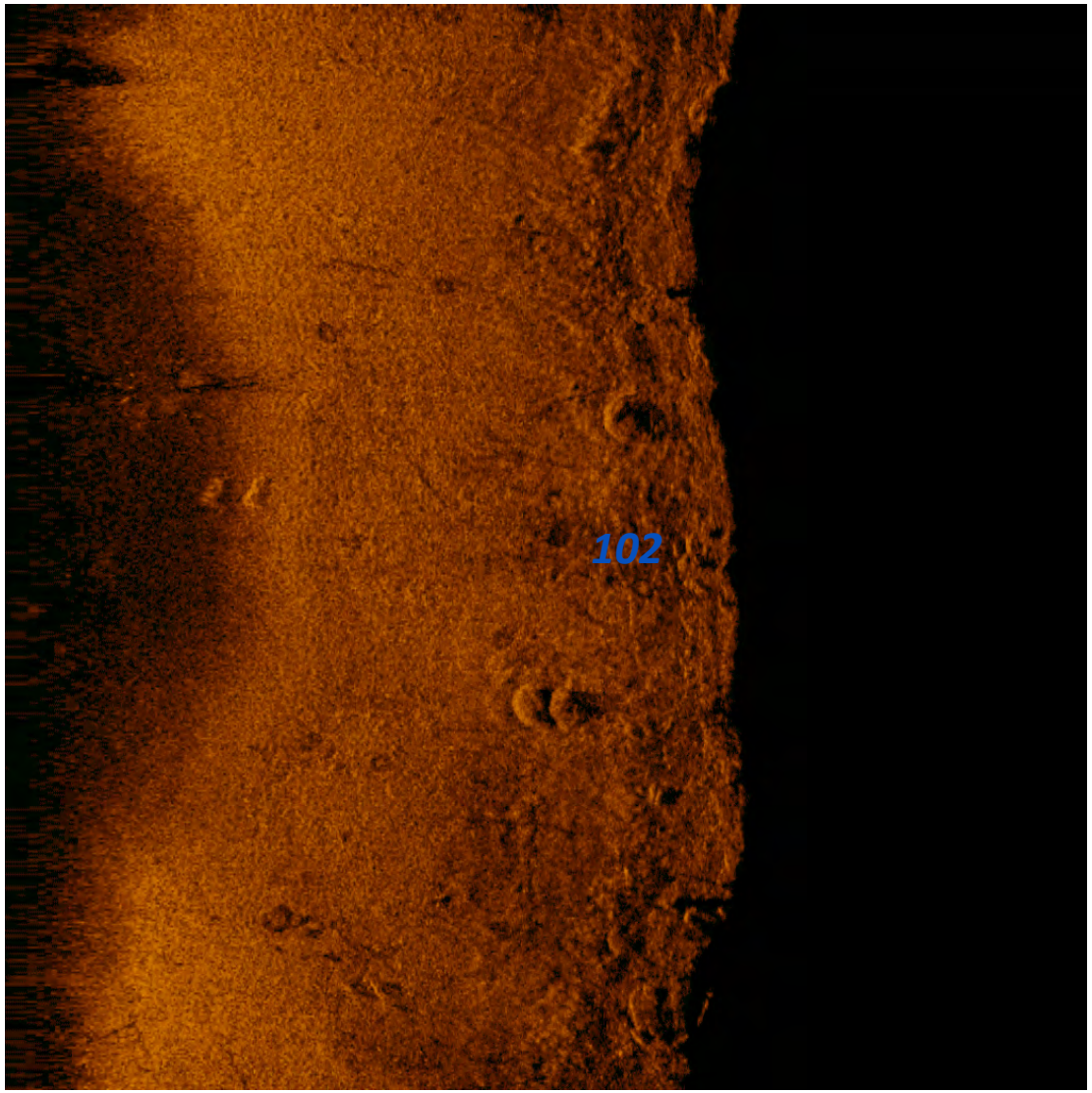


Marine Professionals Since 1919
BRENNAN

Photo ID: 102
Easting (X) 1483851.94
Northing (Y) 633090.07
Description: Potential Tire

Dimensions and attributes

- Target Length: 4.94 US ft
- Target Width: 4.17 US ft
- Target Height: 0.00 US ft

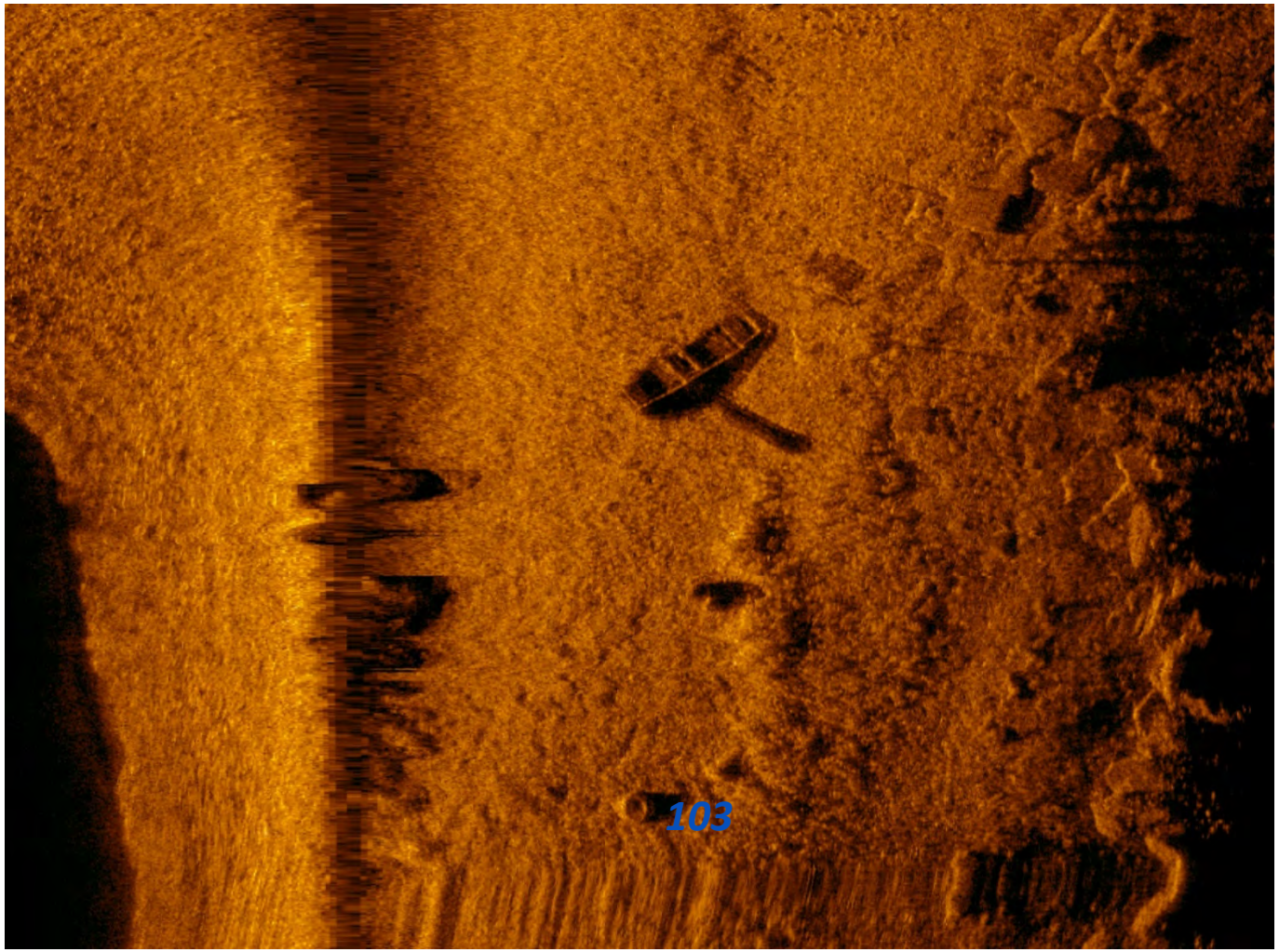


Marine Professionals Since 1919
BRENNAN

Photo ID: 103
Easting (X) 1484151.27
Northing (Y) 633007.75
Description: Potential Standing Drum

Dimensions and attributes

- Target Length: 2.17 US ft
- Target Width: 2.04 US ft
- Target Height: 1.01 US ft

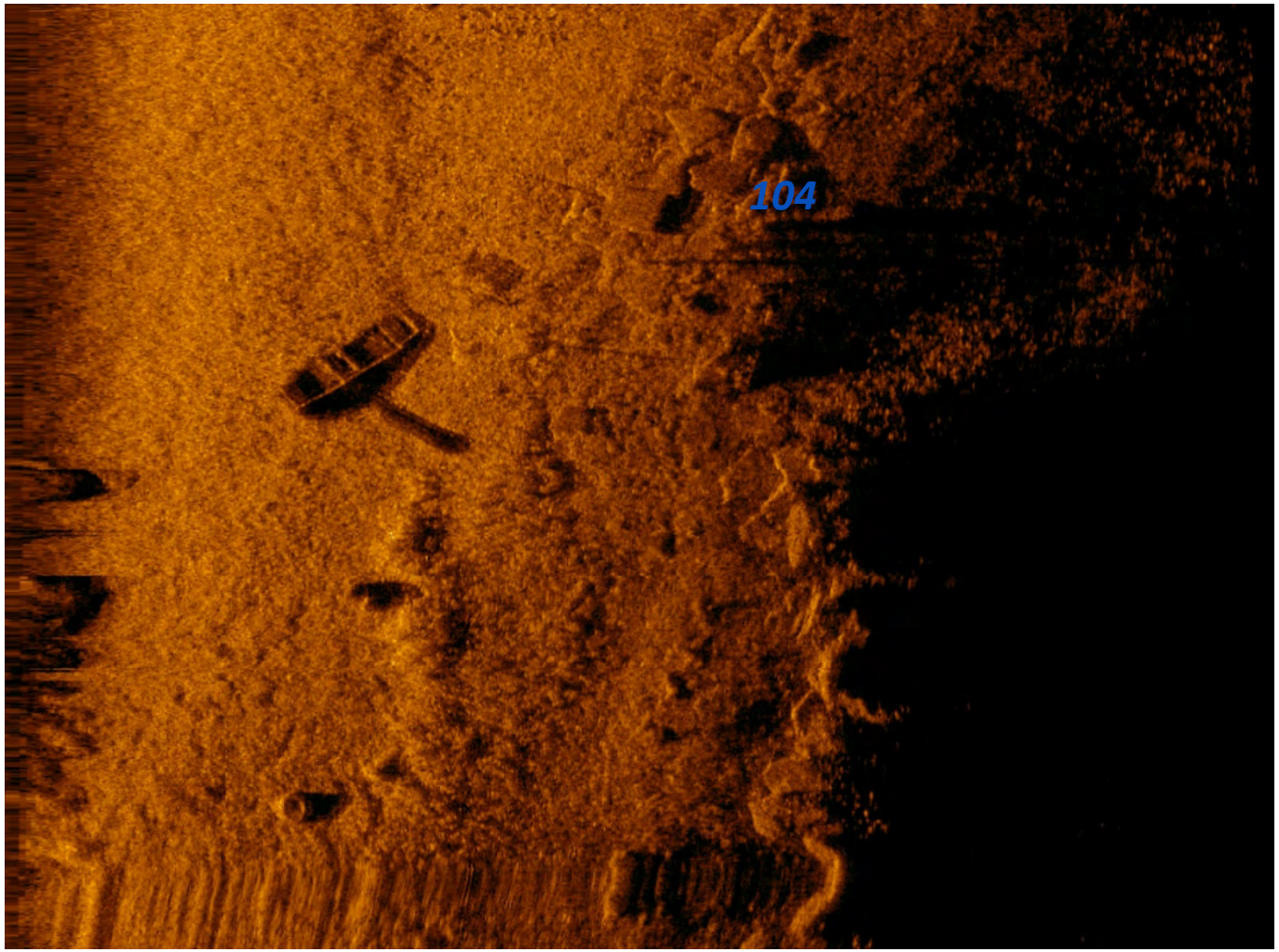


Marine Professionals Since 1919
BRENNAN

Photo ID: 104
Easting (X) 1484153.91
Northing (Y) 632956.9
Description: Potential Boulders/Manmade Objects

Dimensions and attributes

- Target Length: 3.61 US ft
- Target Width: 2.92 US ft
- Target Height: 0.99 US ft

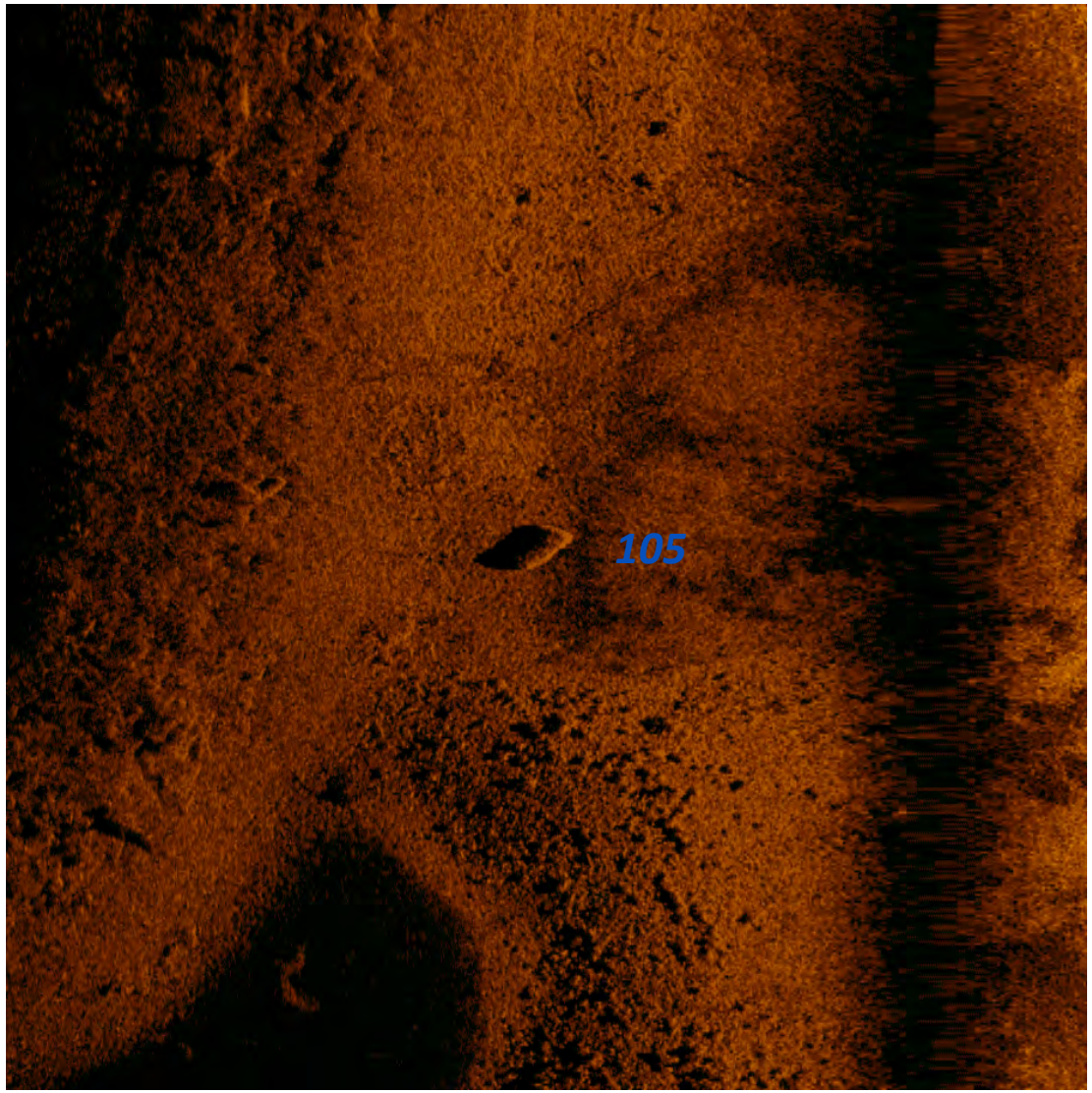


Marine Professionals Since 1919
BRENNAN

Photo ID: 105
Easting (X) 1484199.49
Northing (Y) 632704.39
Description: Potential Drum

Dimensions and attributes

- Target Length: 3.31 US ft
- Target Width: 3.86 US ft
- Target Height: 0.44 US ft

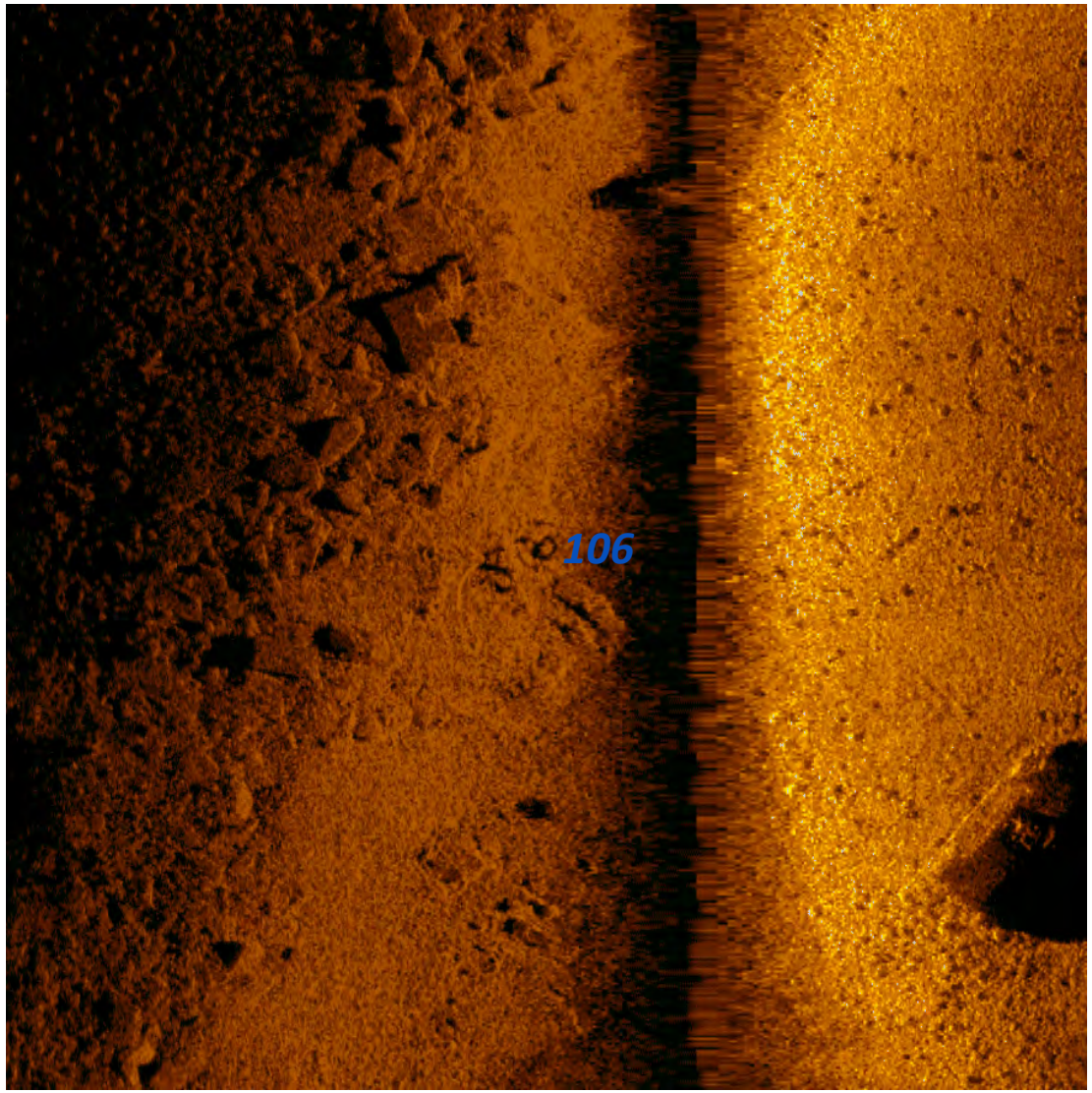


Marine Professionals Since 1919
BRENNAN

Photo ID: 106
Easting (X) 1484160.01
Northing (Y) 632788.24
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.69 US ft
- Target Width: 1.75 US ft
- Target Height: 0.00 US ft

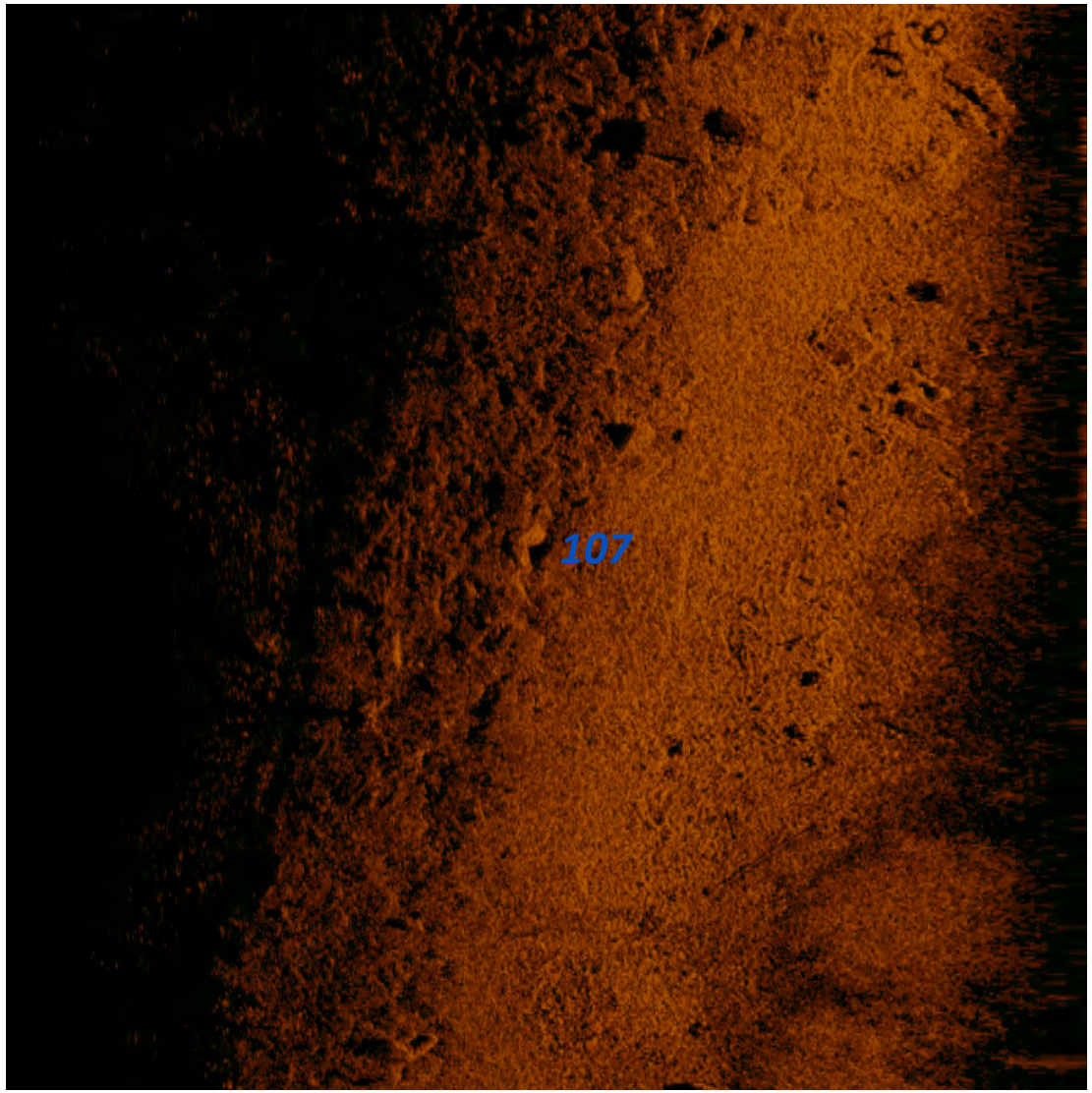


Marine Professionals Since 1919
BRENNAN

Photo ID: 107
Easting (X) 1484205.04
Northing (Y) 632757.24
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

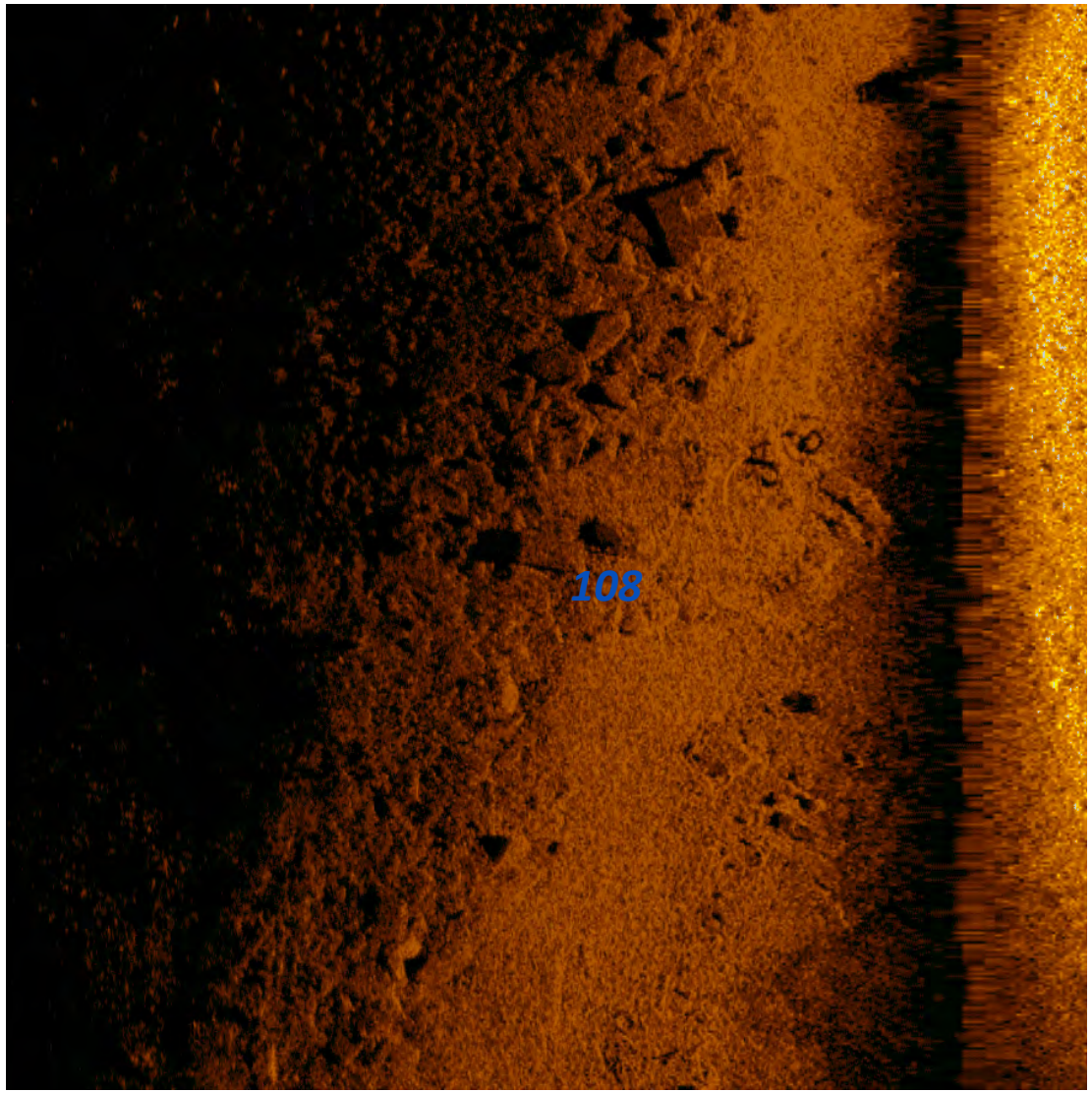


Marine Professionals Since 1919
BRENNAN

Photo ID: 108
Easting (X) 1484182.77
Northing (Y) 632786.88
Description: Potential Boulders

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

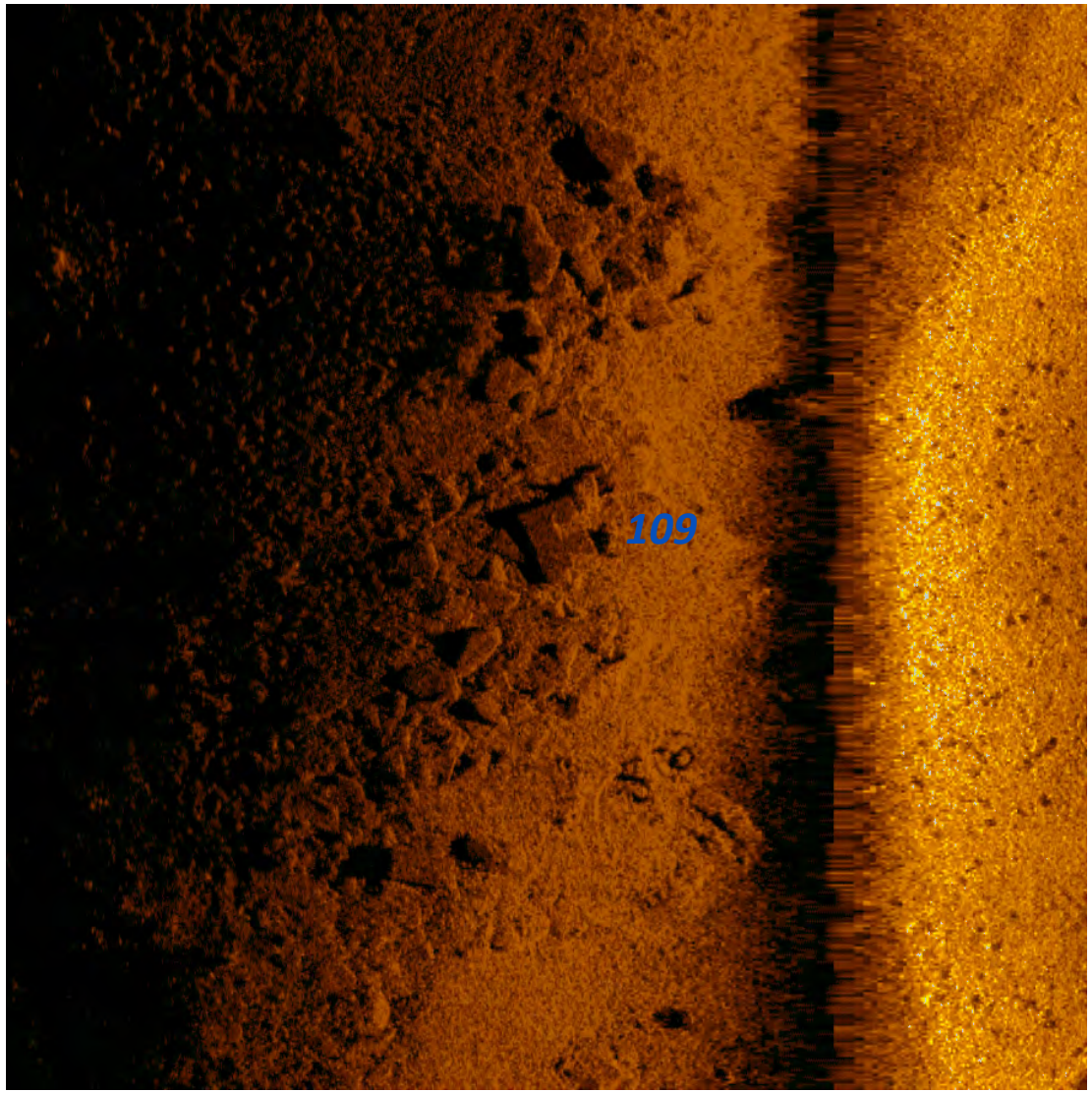


Marine Professionals Since 1919
BRENNAN

Photo ID: 109
Easting (X) 1484164.75
Northing (Y) 632807.56
Description: Potential Boulders/ Manmade Object

Dimensions and attributes

- Target Length: 6.28 US ft
- Target Width: 4.50 US ft
- Target Height: 1.28 US ft

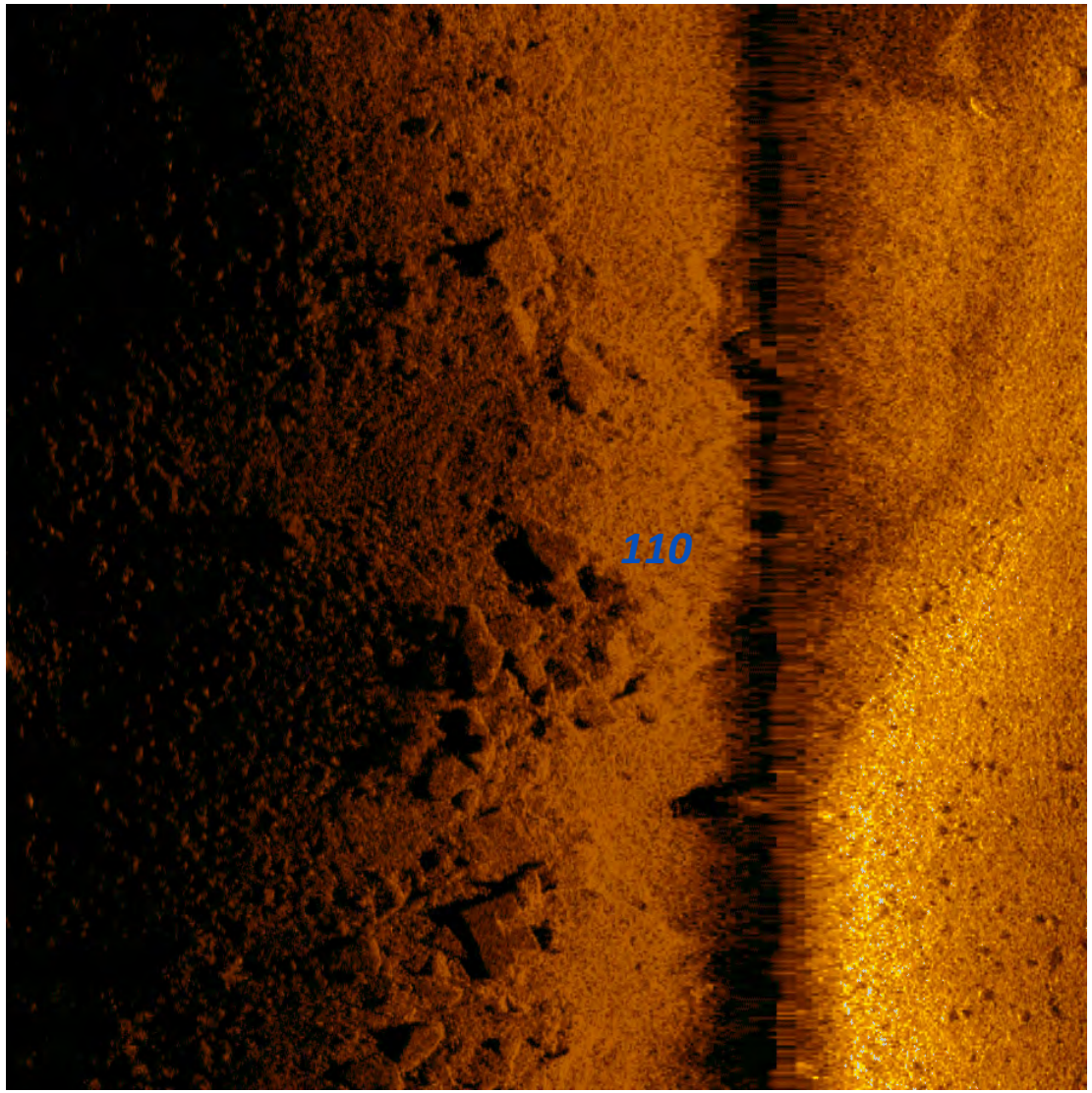


Marine Professionals Since 1919
BRENNAN

Photo ID: 110
Easting (X) 1484149.86
Northing (Y) 632835.53
Description: Potential Boulders

Dimensions and attributes

- Target Length: 6.06 US ft
- Target Width: 3.03 US ft
- Target Height: 2.08 US ft

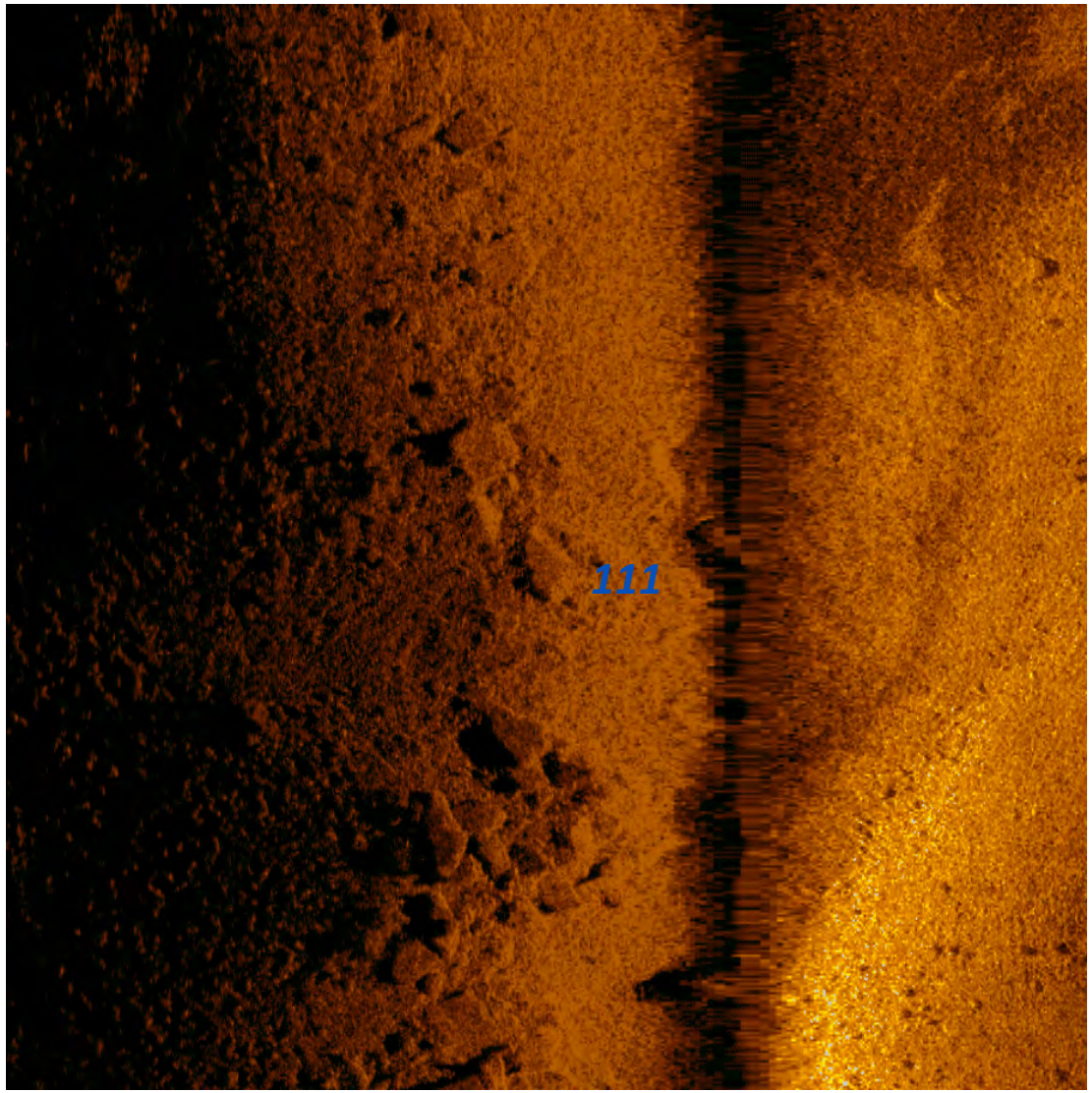


Marine Professionals Since 1919
BRENNAN

Photo ID: 111
Easting (X) 1484142.58
Northing (Y) 632848.04
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.36 US ft
- Target Width: 3.04 US ft
- Target Height: 0.87 US ft

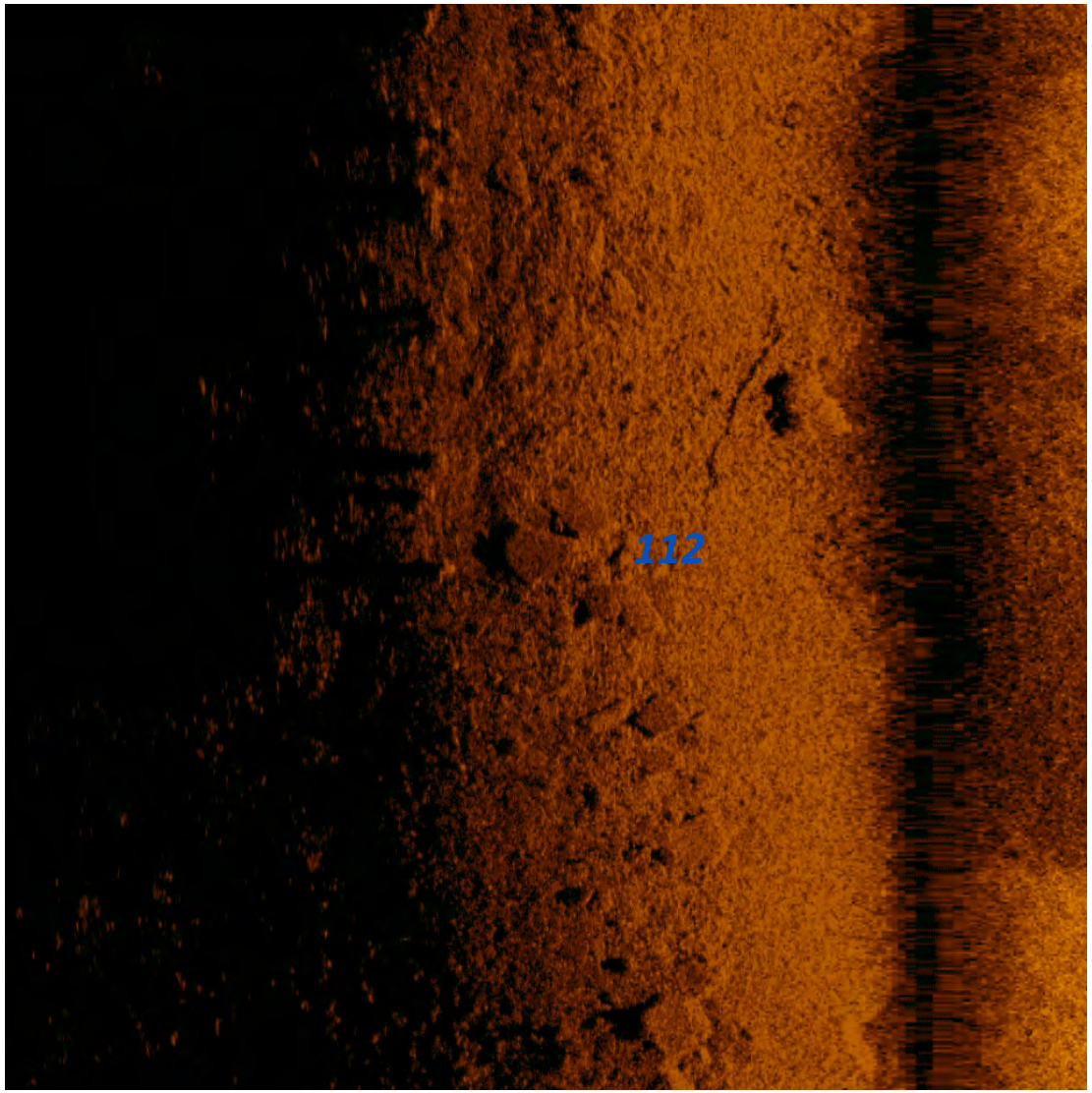


Marine Professionals Since 1919
BRENNAN

Photo ID: 112
Easting (X) 1484148.78
Northing (Y) 632890.69
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.99 US ft
- Target Width: 6.84 US ft
- Target Height: 1.30 US ft

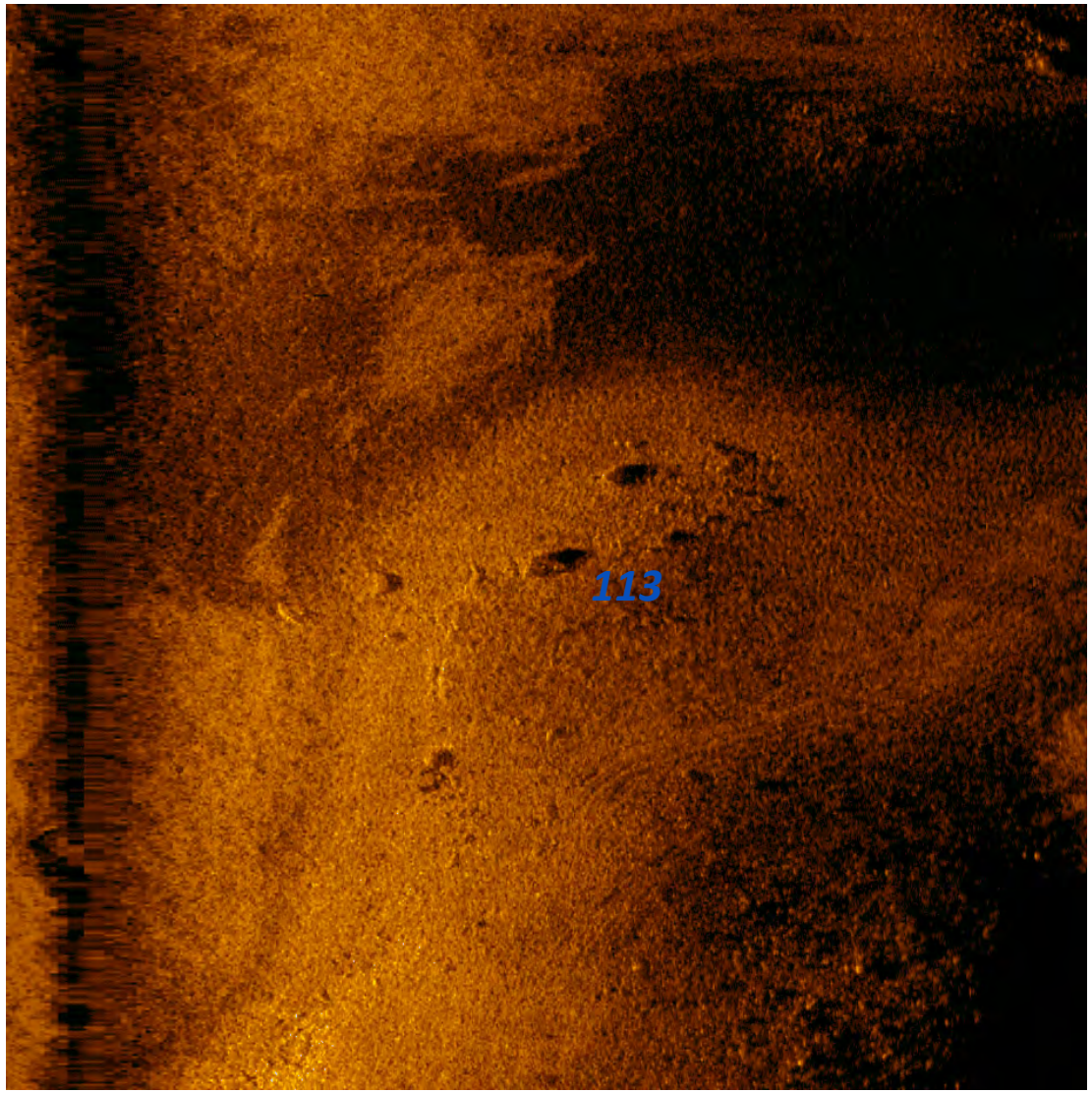


Marine Professionals Since 1919
BRENNAN

Photo ID: 113
Easting (X) 1484085.46
Northing (Y) 632859.47
Description: Potential Boulders

Dimensions and attributes

- Target Length: 2.28 US ft
- Target Width: 1.56 US ft
- Target Height: 1.36 US ft

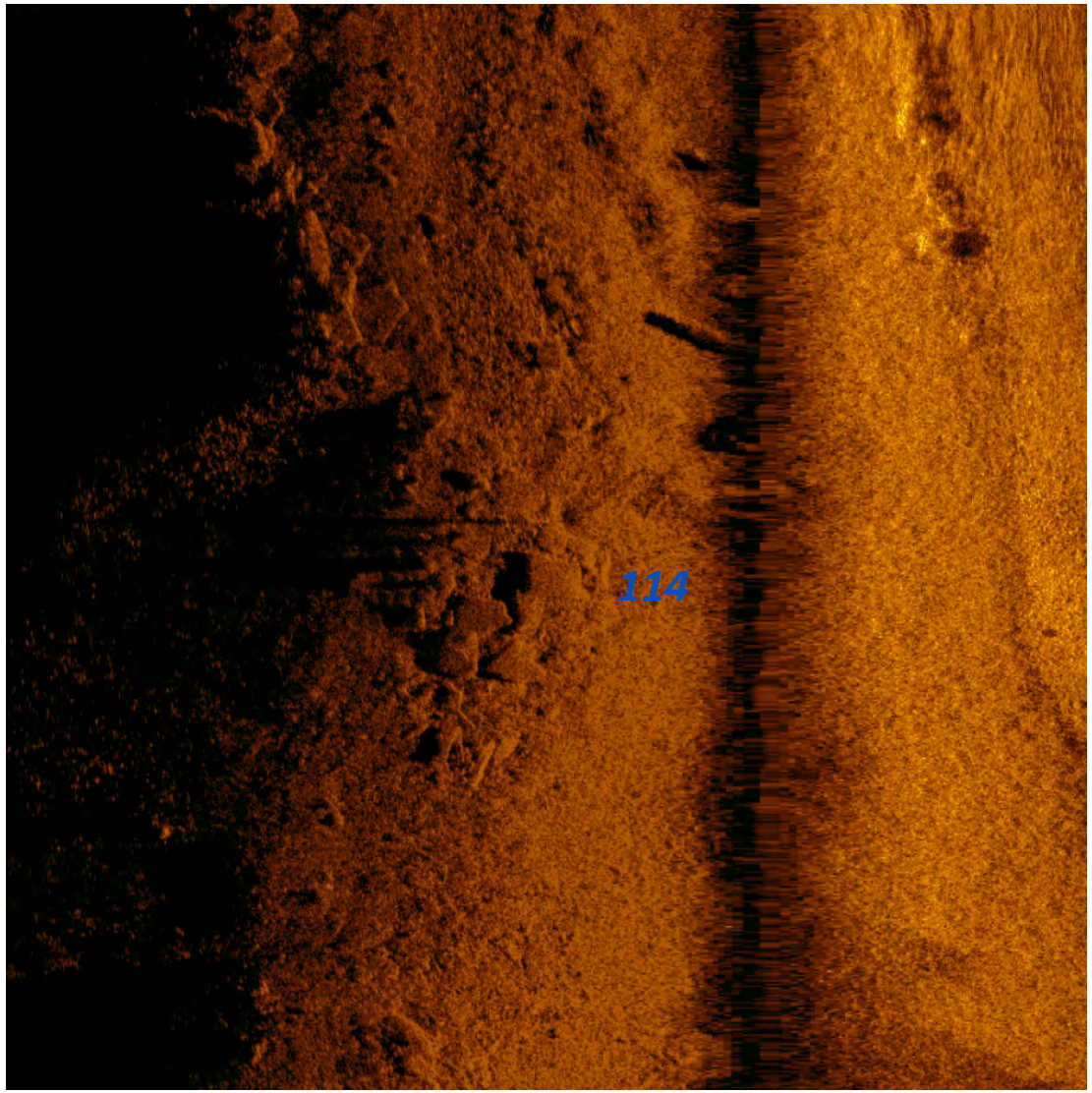


Marine Professionals Since 1919
BRENNAN

Photo ID: 114
Easting (X) 1484151.12
Northing (Y) 632968.36
Description: Potential Boulders

Dimensions and attributes

- Target Length: 4.17 US ft
- Target Width: 3.25 US ft
- Target Height: 1.60 US ft

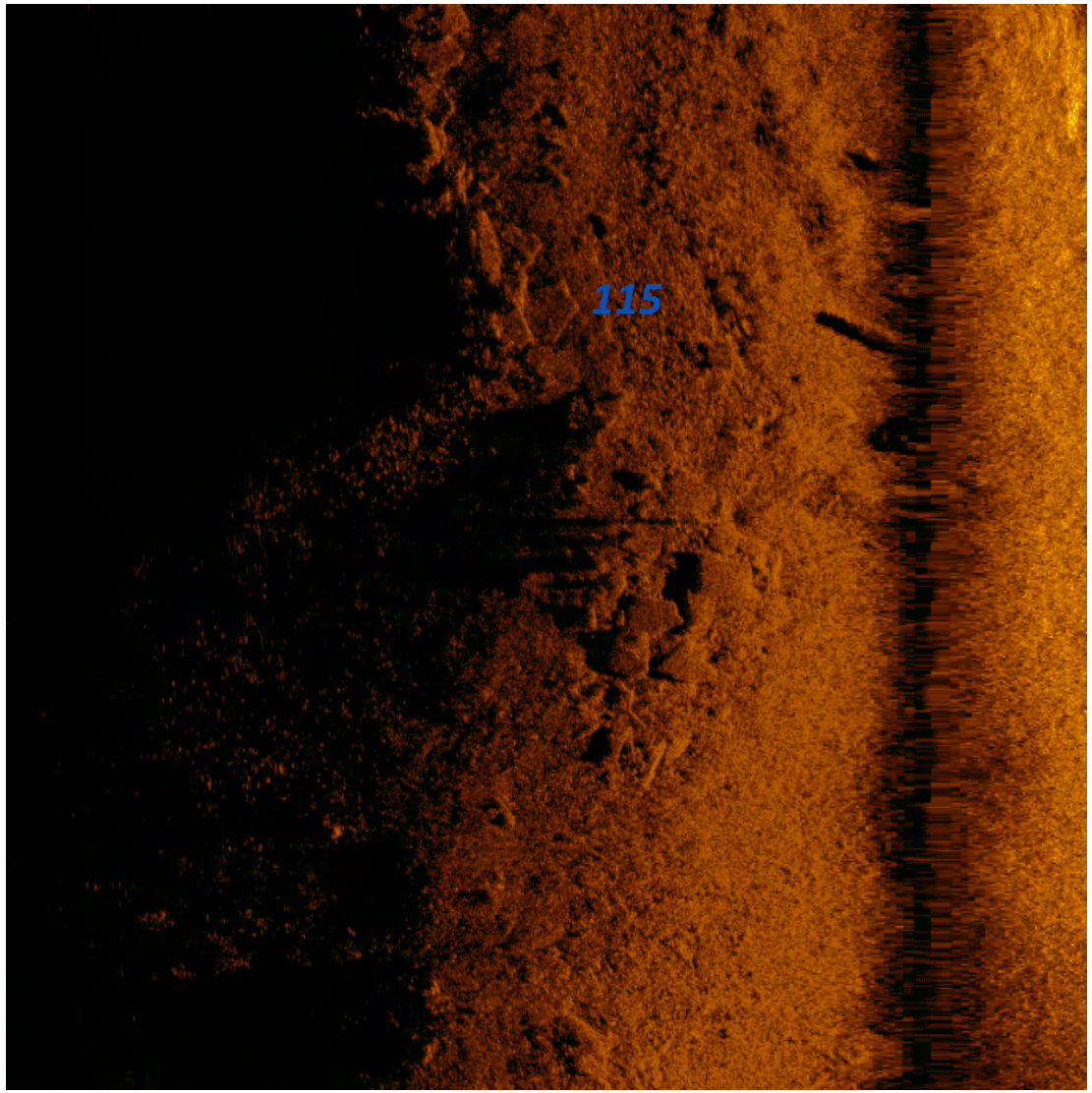


Marine Professionals Since 1919
BRENNAN

Photo ID: 115
Easting (X) 1484170.02
Northing (Y) 632984.84
Description: Potential Boulders

Dimensions and attributes

- Target Length: 6.49 US ft
- Target Width: 1.88 US ft
- Target Height: 0.00 US ft

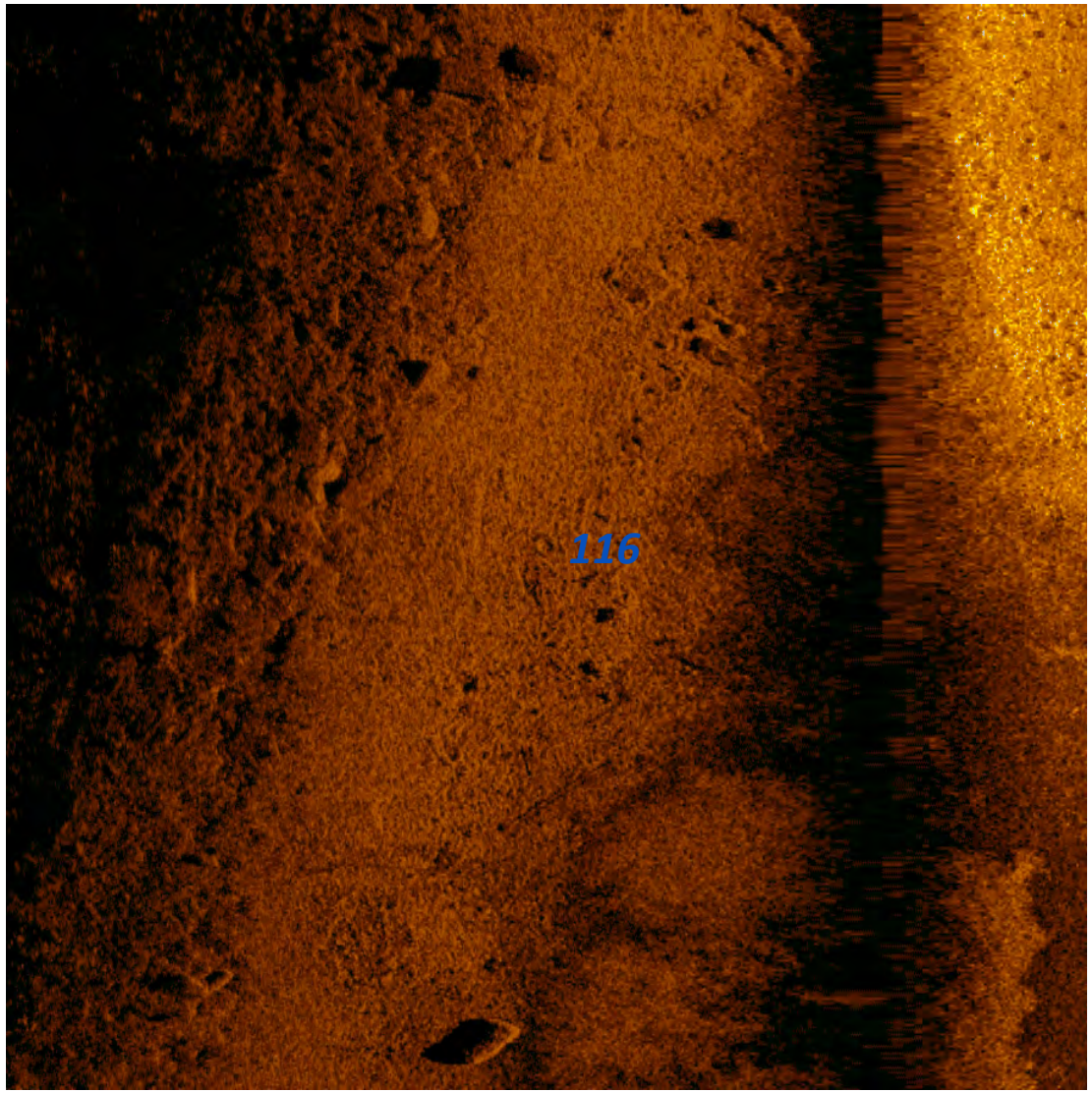


Marine Professionals Since 1919
BRENNAN

Photo ID: 116
Easting (X) 1484188.11
Northing (Y) 632747.15
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.41 US ft
- Target Width: 1.61 US ft
- Target Height: 0.00 US ft

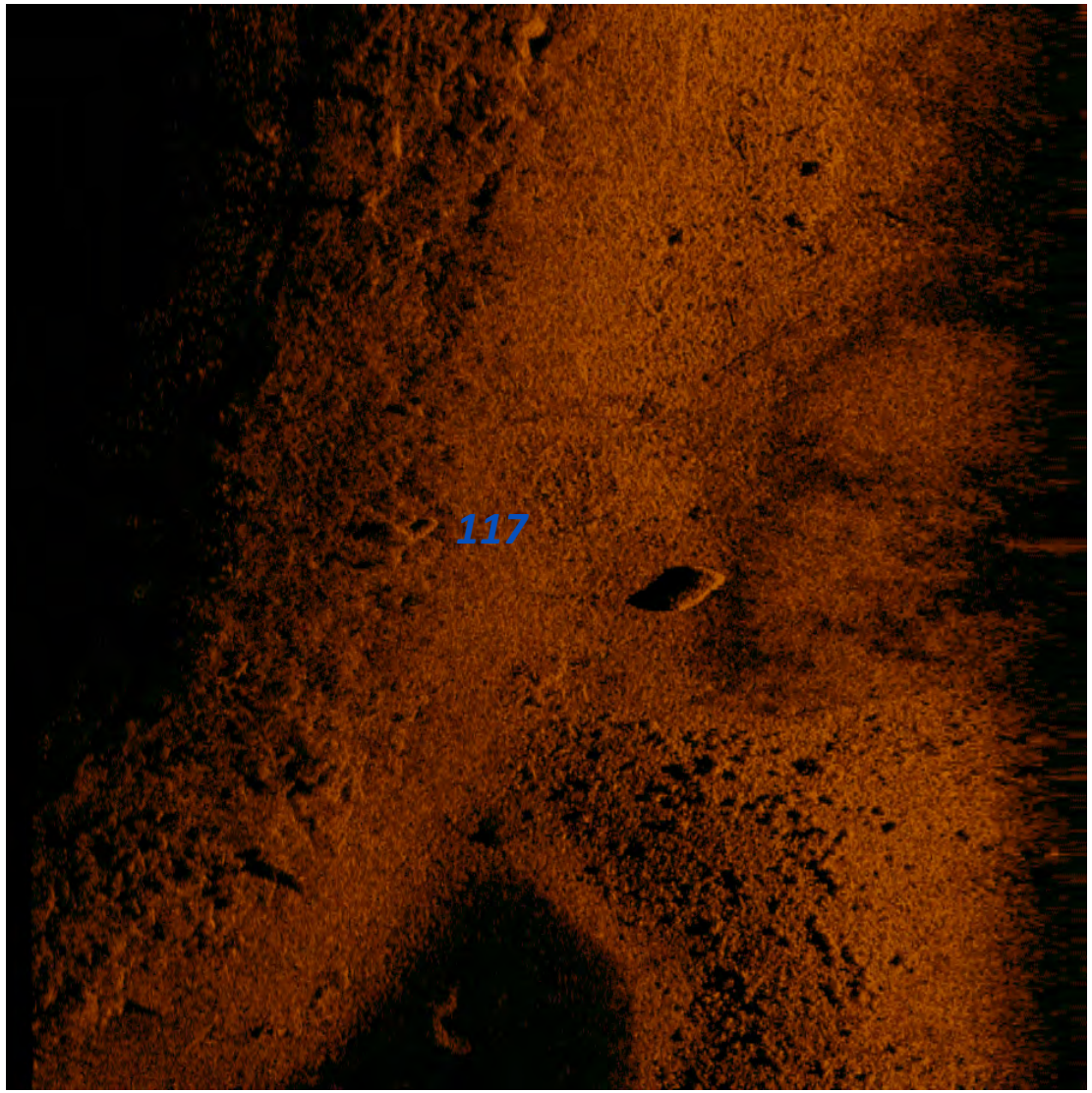


Marine Professionals Since 1919
BRENNAN

Photo ID: 117
Easting (X) 1484223.25
Northing (Y) 632710.14
Description: Potential Boulders

Dimensions and attributes

- Target Length: 3.69 US ft
- Target Width: 1.76 US ft
- Target Height: 1.04 US ft

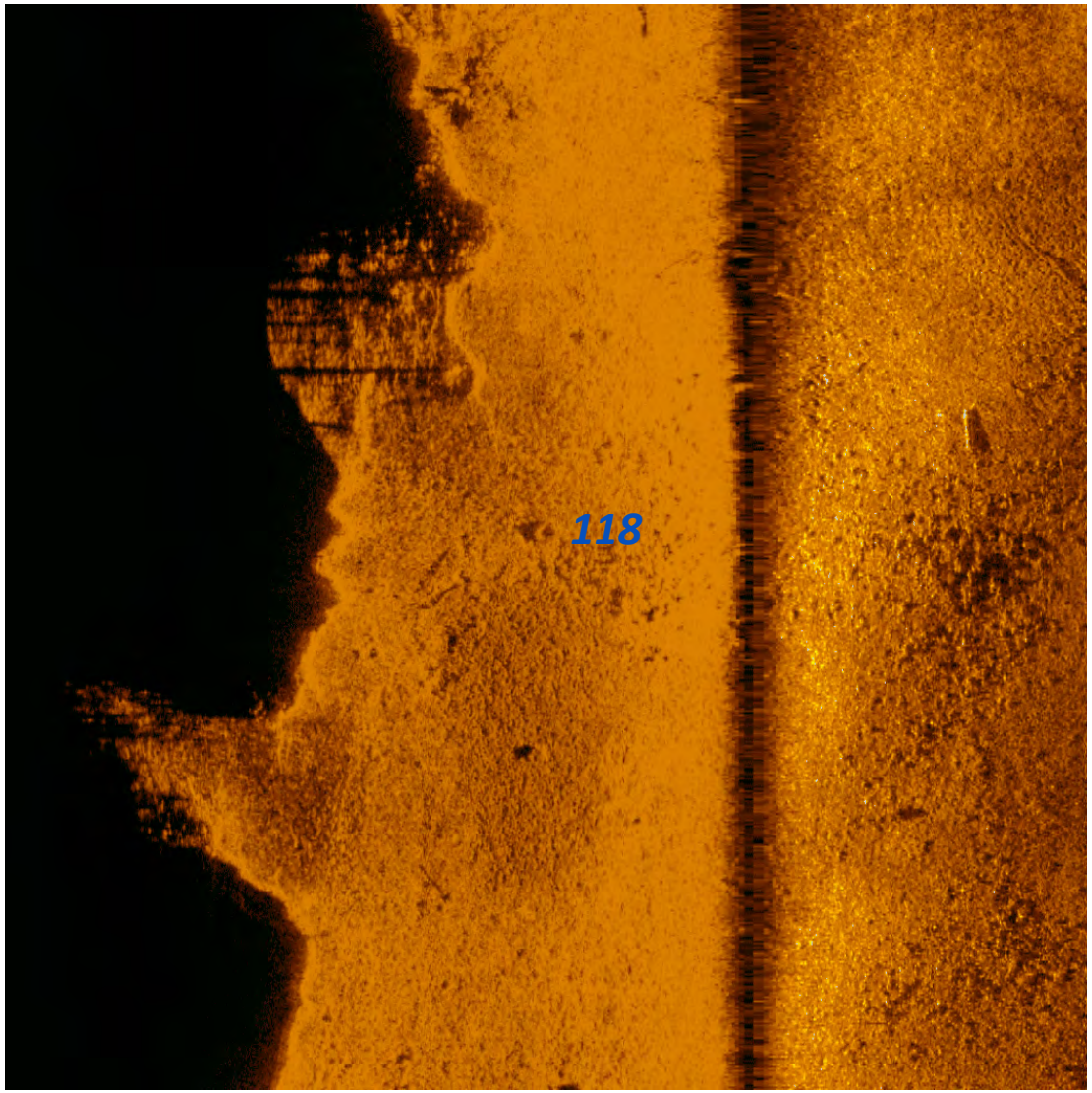


Marine Professionals Since 1919
BRENNAN

Photo ID: 118
Easting (X) 1484011.53
Northing (Y) 632652.13
Description: Potential Tire

Dimensions and attributes

- Target Length: 2.05 US ft
- Target Width: 2.28 US ft
- Target Height: 0.52 US ft

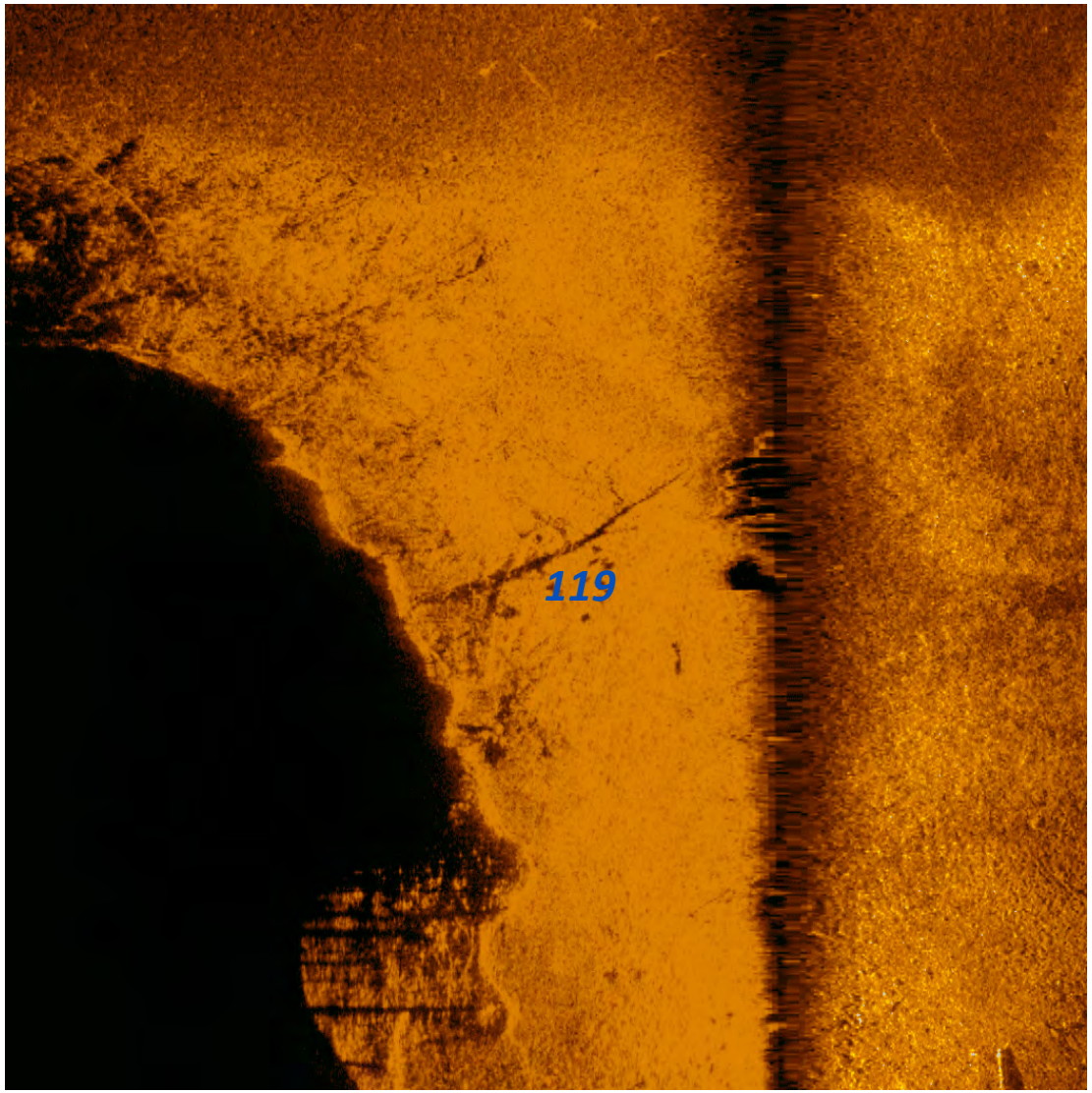


Marine Professionals Since 1919
BRENNAN

Photo ID: 119
Easting (X) 1484052.76
Northing (Y) 632592.71
Description: Potential Log/Standing Tree

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

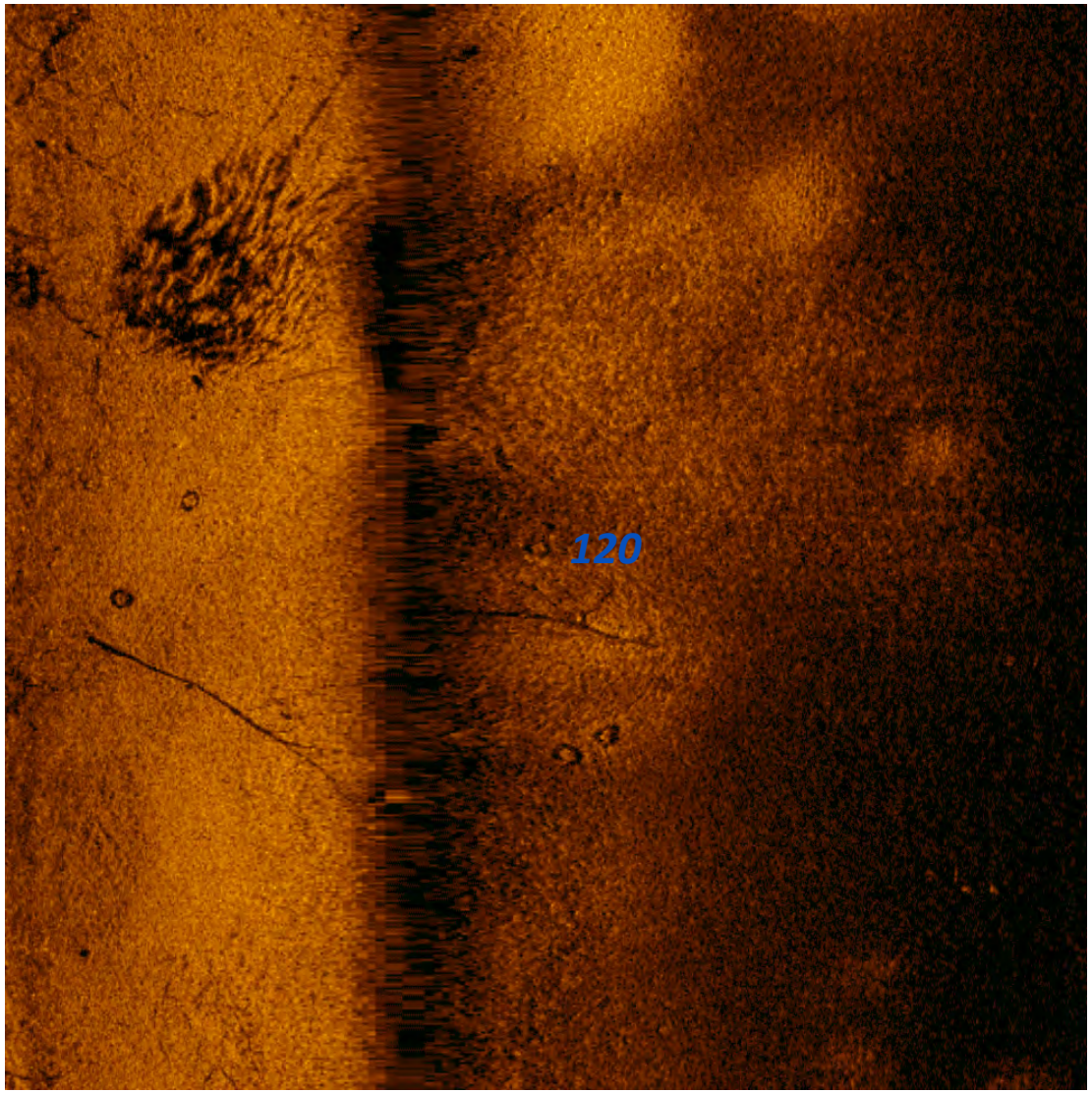


Marine Professionals Since 1919
BRENNAN

Photo ID: 120
Easting (X) 1483712.48
Northing (Y) 632275.26
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.90 US ft
- Target Width: 1.85 US ft
- Target Height: 0.00 US ft

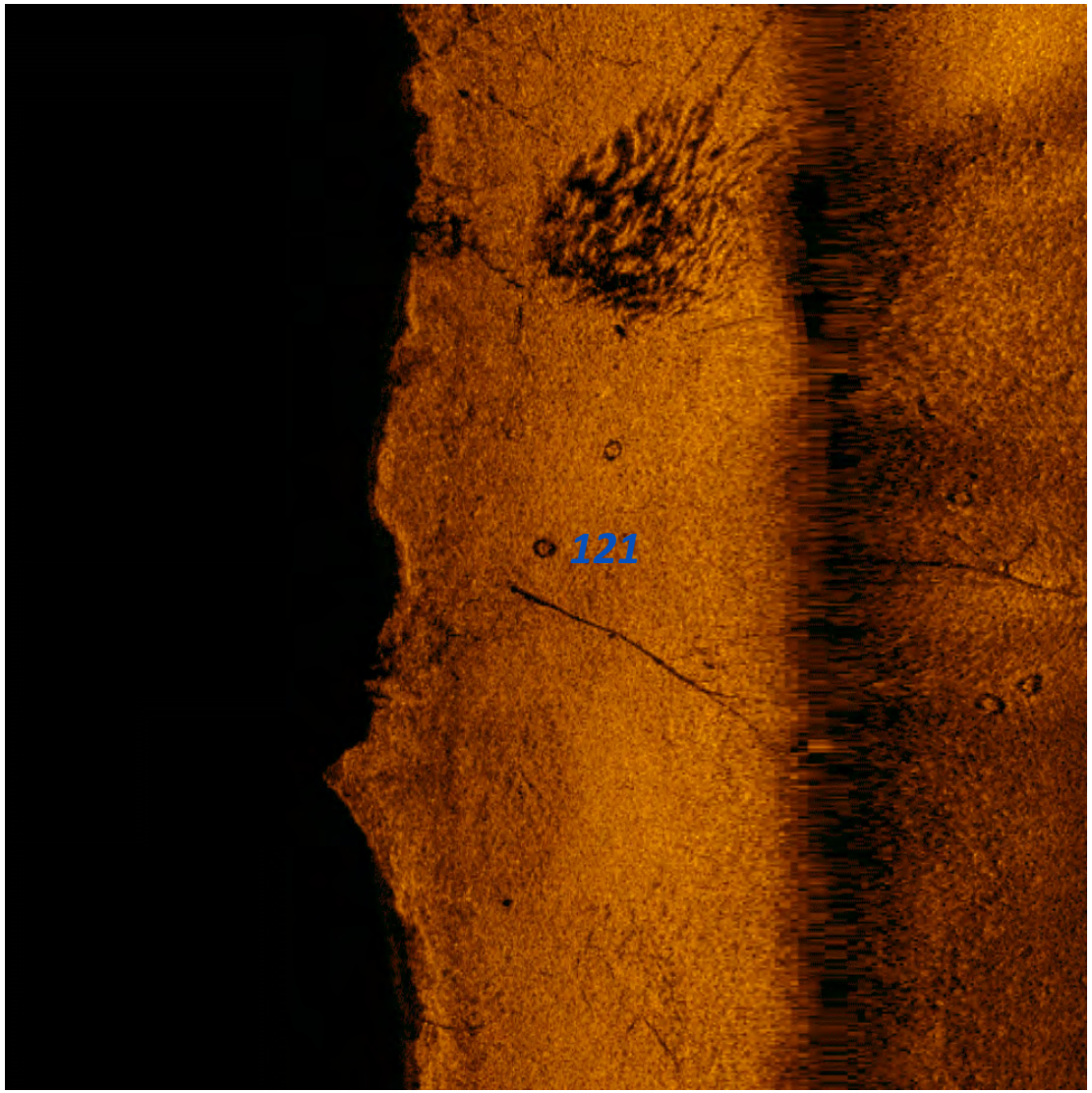


Marine Professionals Since 1919
BRENNAN

Photo ID: 121
Easting (X) 1483688.07
Northing (Y) 632234.59
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.66 US ft
- Target Width: 1.48 US ft
- Target Height: 0.00 US ft

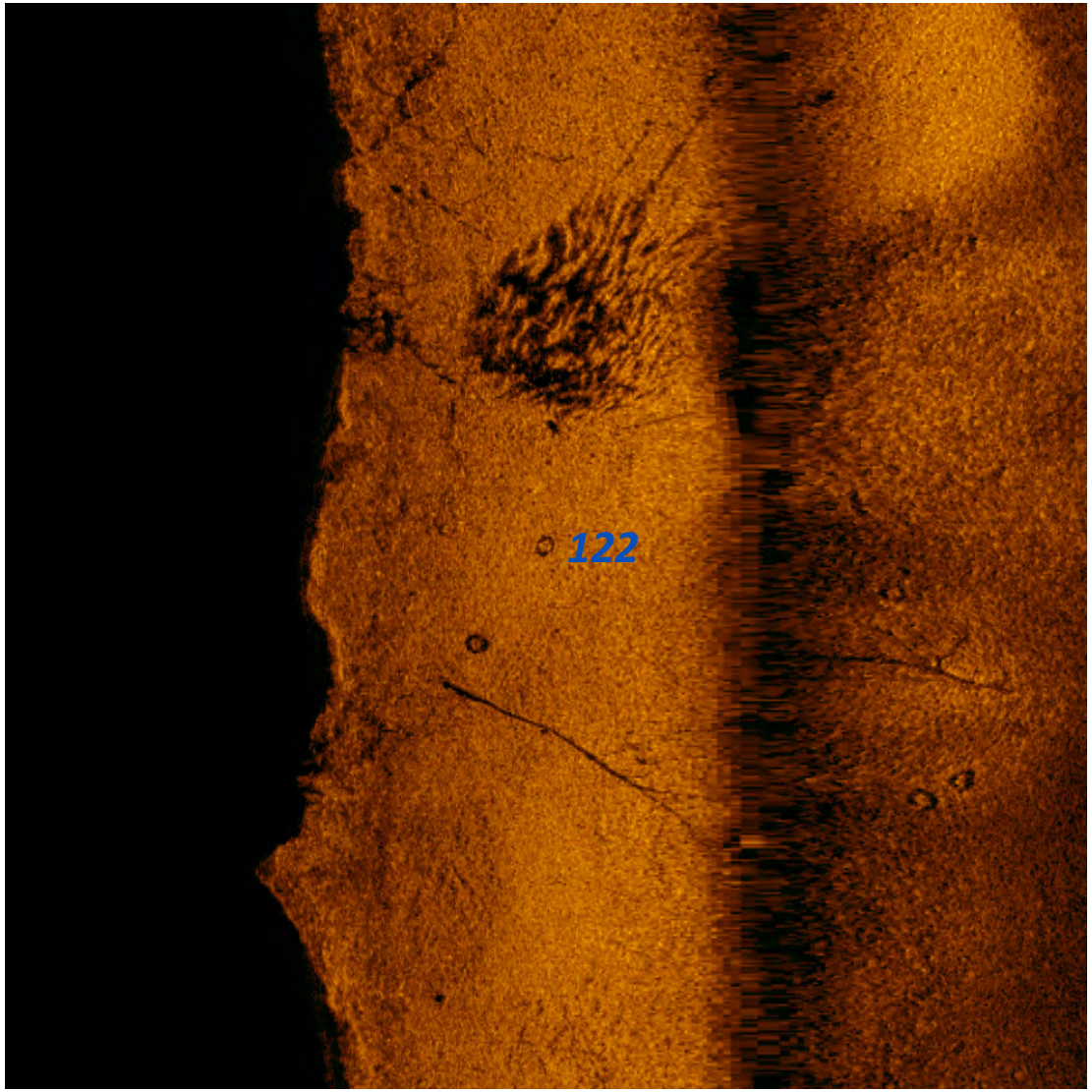


Marine Professionals Since 1919
BRENNAN

Photo ID: 122
Easting (X) 1483701.08
Northing (Y) 632237.03
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.76 US ft
- Target Width: 1.87 US ft
- Target Height: 0.00 US ft

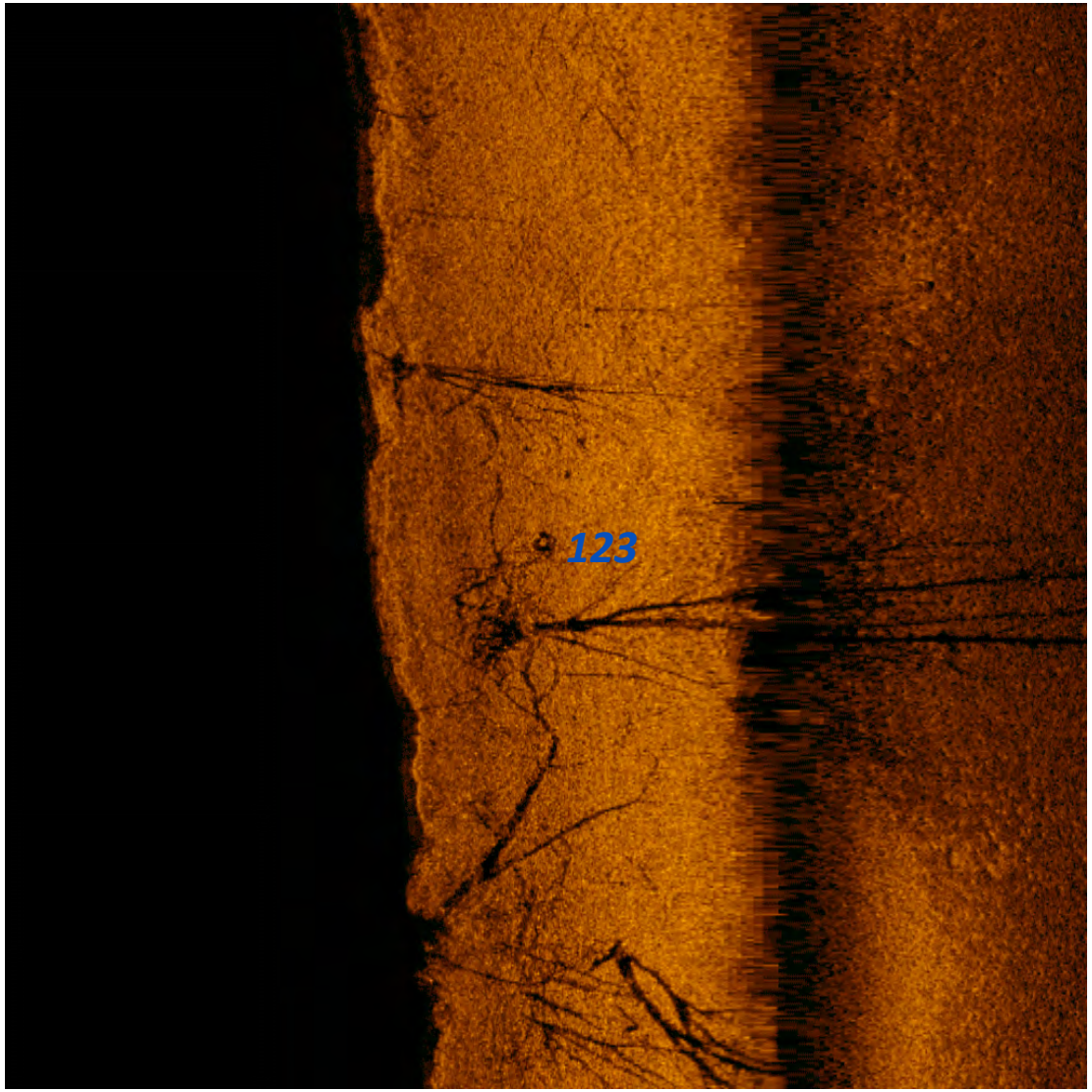


Marine Professionals Since 1919
BRENNAN

Photo ID: 123
Easting (X) 1483596.62
Northing (Y) 632283.61
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.76 US ft
- Target Width: 1.87 US ft
- Target Height: 0.00 US ft

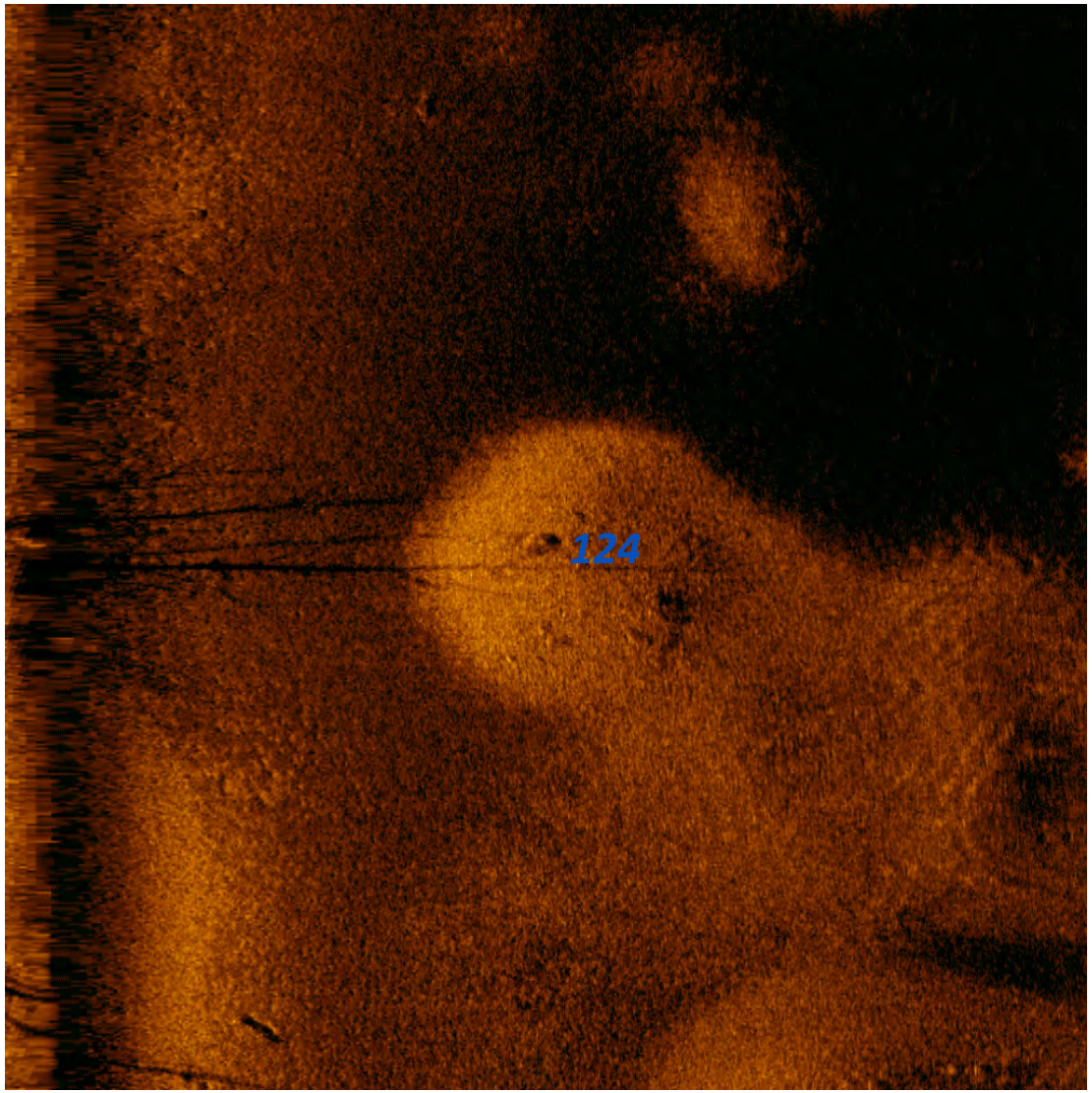


Marine Professionals Since 1919
BRENNAN

Photo ID: 124
Easting (X) 1483630.79
Northing (Y) 632357.48
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.87 US ft
- Target Width: 1.83 US ft
- Target Height: 0.00 US ft

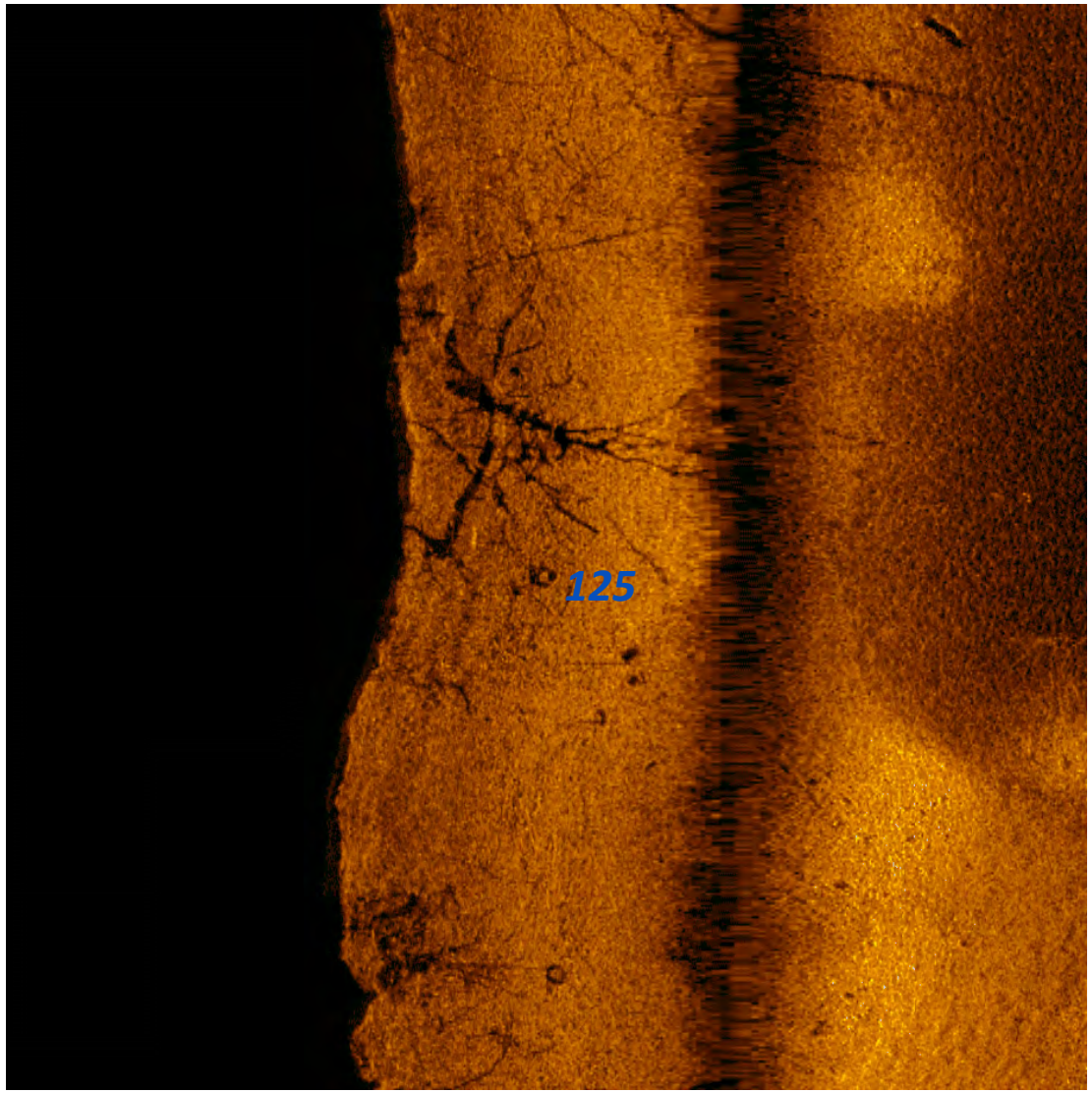


Marine Professionals Since 1919
BRENNAN

Photo ID: 125
Easting (X) 1483502.17
Northing (Y) 632365.71
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.74 US ft
- Target Width: 1.76 US ft
- Target Height: 0.00 US ft

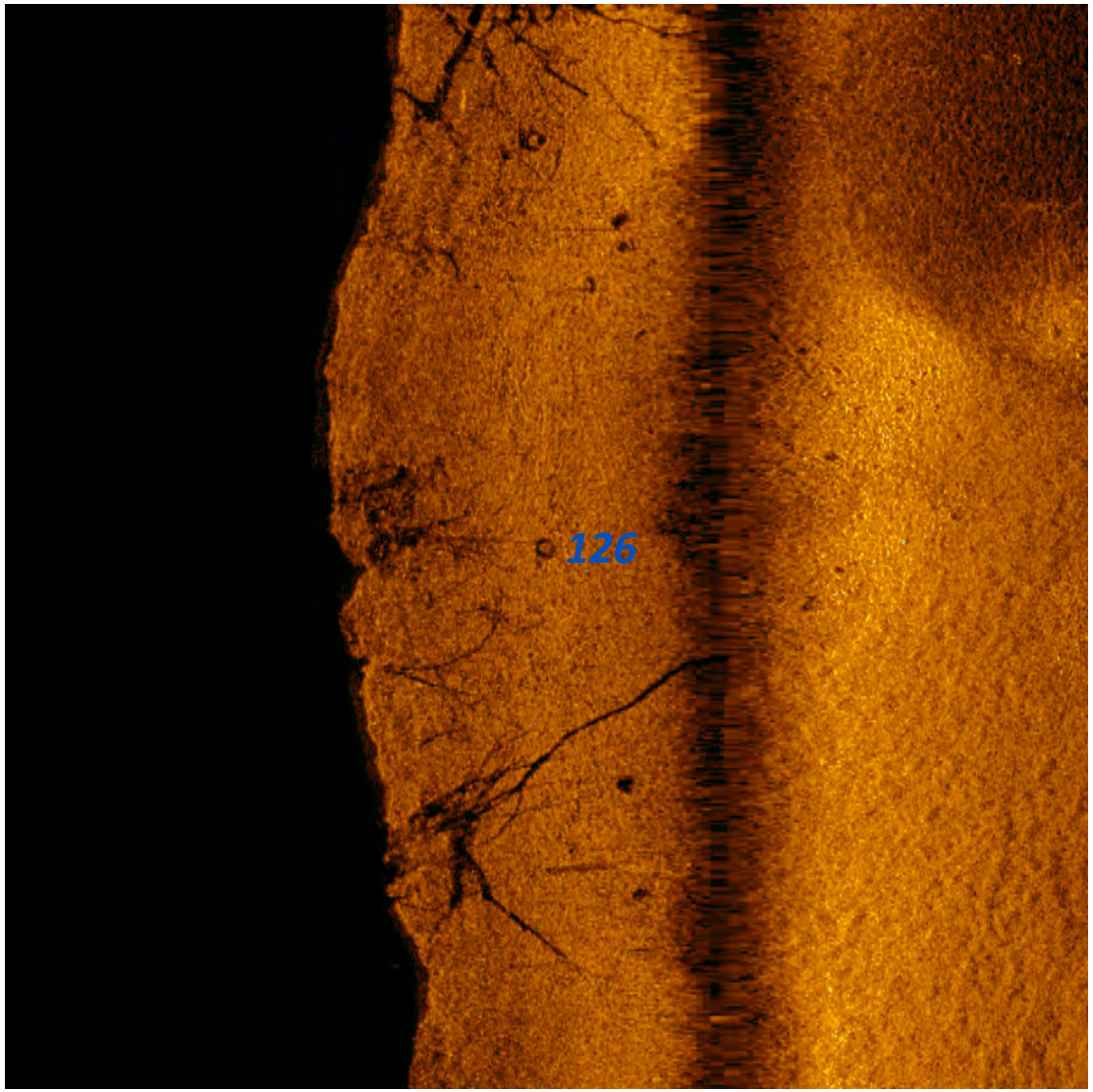


Marine Professionals Since 1919
BRENNAN

Photo ID: 126
Easting (X) 1483469.63
Northing (Y) 632397.03
Description: Potential Tire

Dimensions and attributes

- Target Length: 1.88 US ft
- Target Width: 1.79 US ft
- Target Height: 0.00 US ft

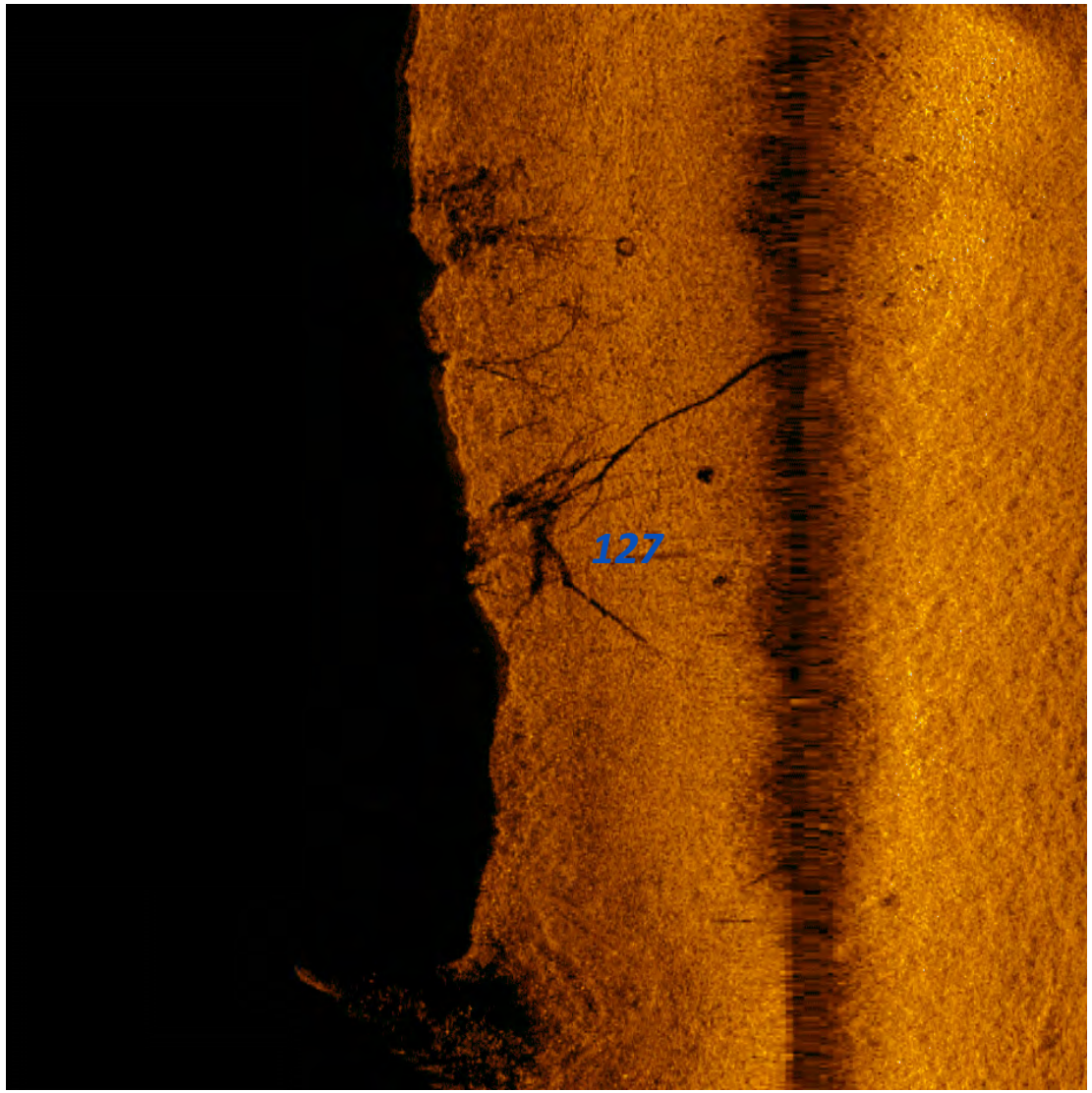


Marine Professionals Since 1919
BRENNAN

Photo ID: 127
Easting (X) 1483438.48
Northing (Y) 632414.14
Description: Potential Log/Standing Tree

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

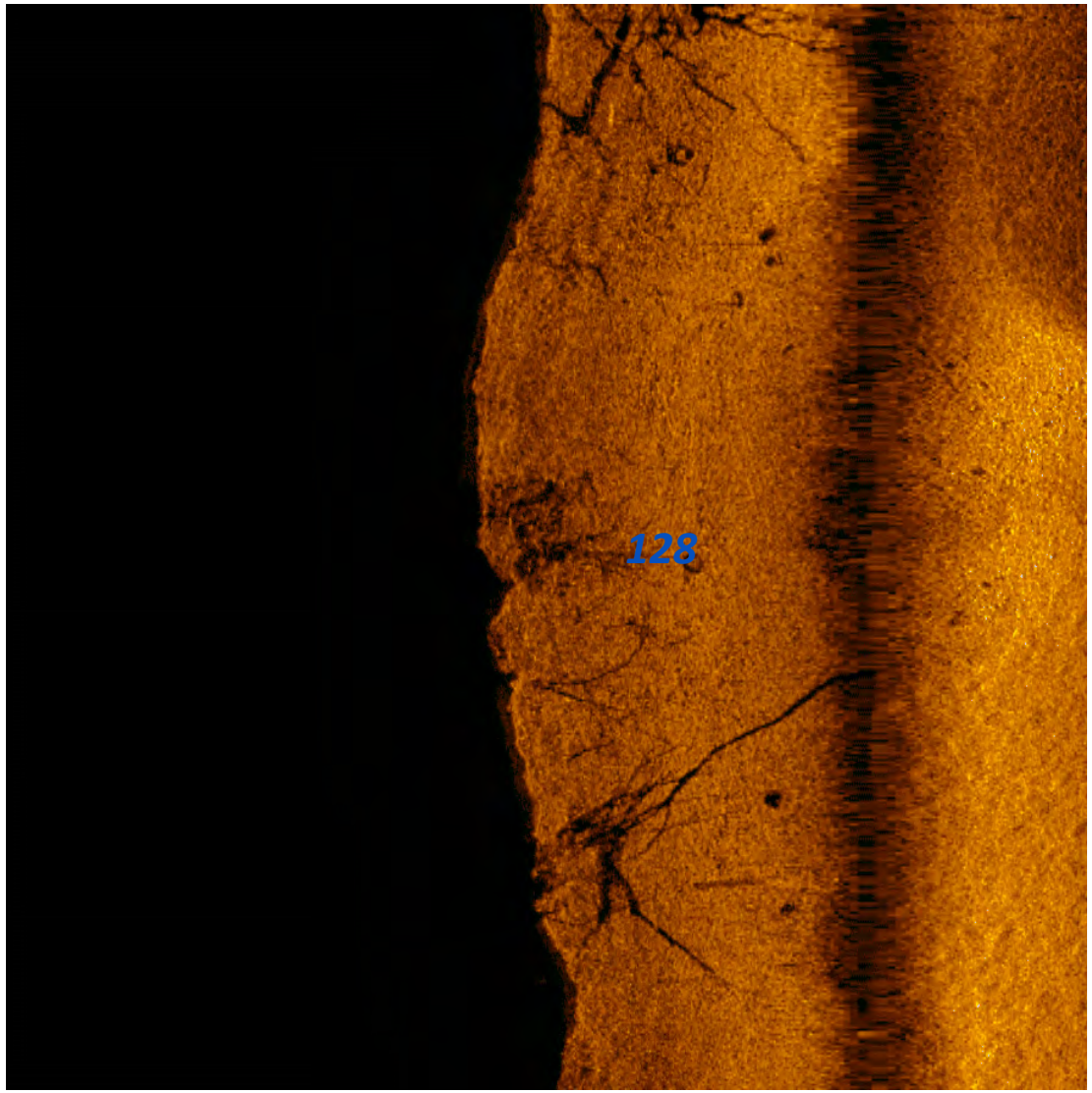


Marine Professionals Since 1919
BRENNAN

Photo ID: 128
Easting (X) 1483459.78
Northing (Y) 632383.73
Description: Potential Log

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

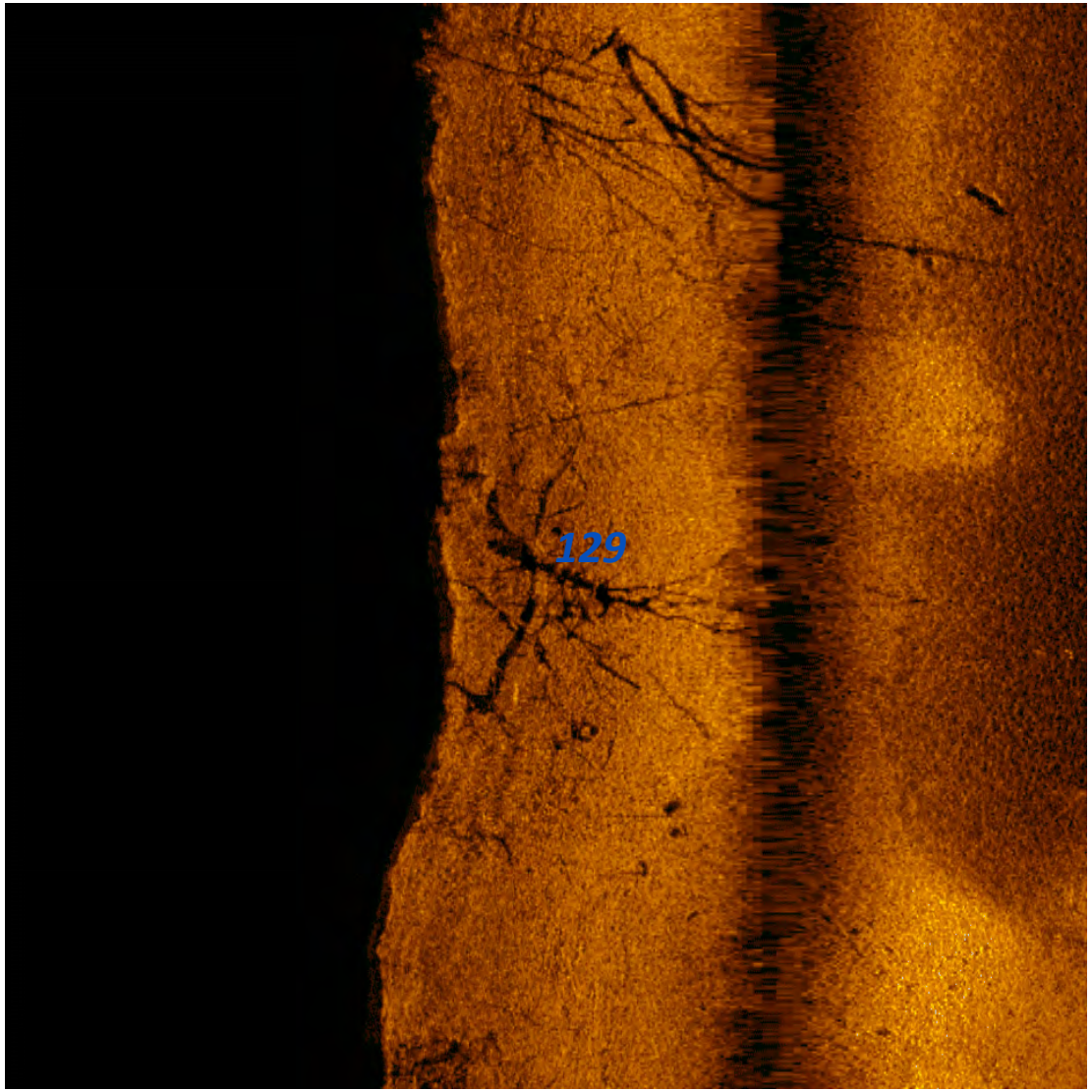


Marine Professionals Since 1919
BRENNAN

Photo ID: 129
Easting (X) 1483511.54
Northing (Y) 632350.12
Description: Potential Log

Dimensions and attributes

- Target Length: 28.40 US ft
- Target Width: 1.90 US ft
- Target Height: 1.03 US ft

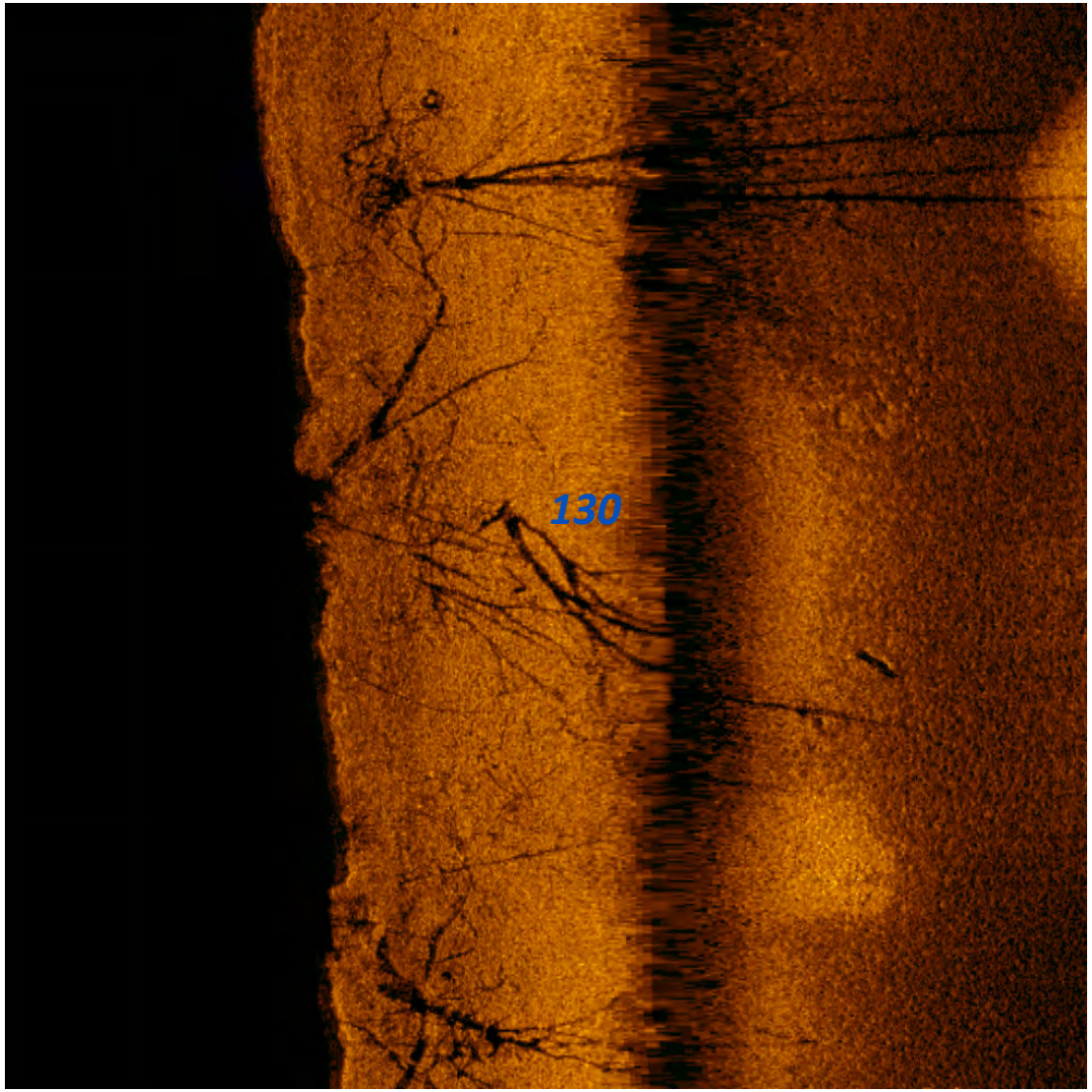


Marine Professionals Since 1919
BRENNAN

Photo ID: 130
Easting (X) 1483559.63
Northing (Y) 632323.55
Description: Potential Log

Dimensions and attributes

- Target Length: 24.01 US ft
- Target Width: 1.28 US ft
- Target Height: 1.72 US ft

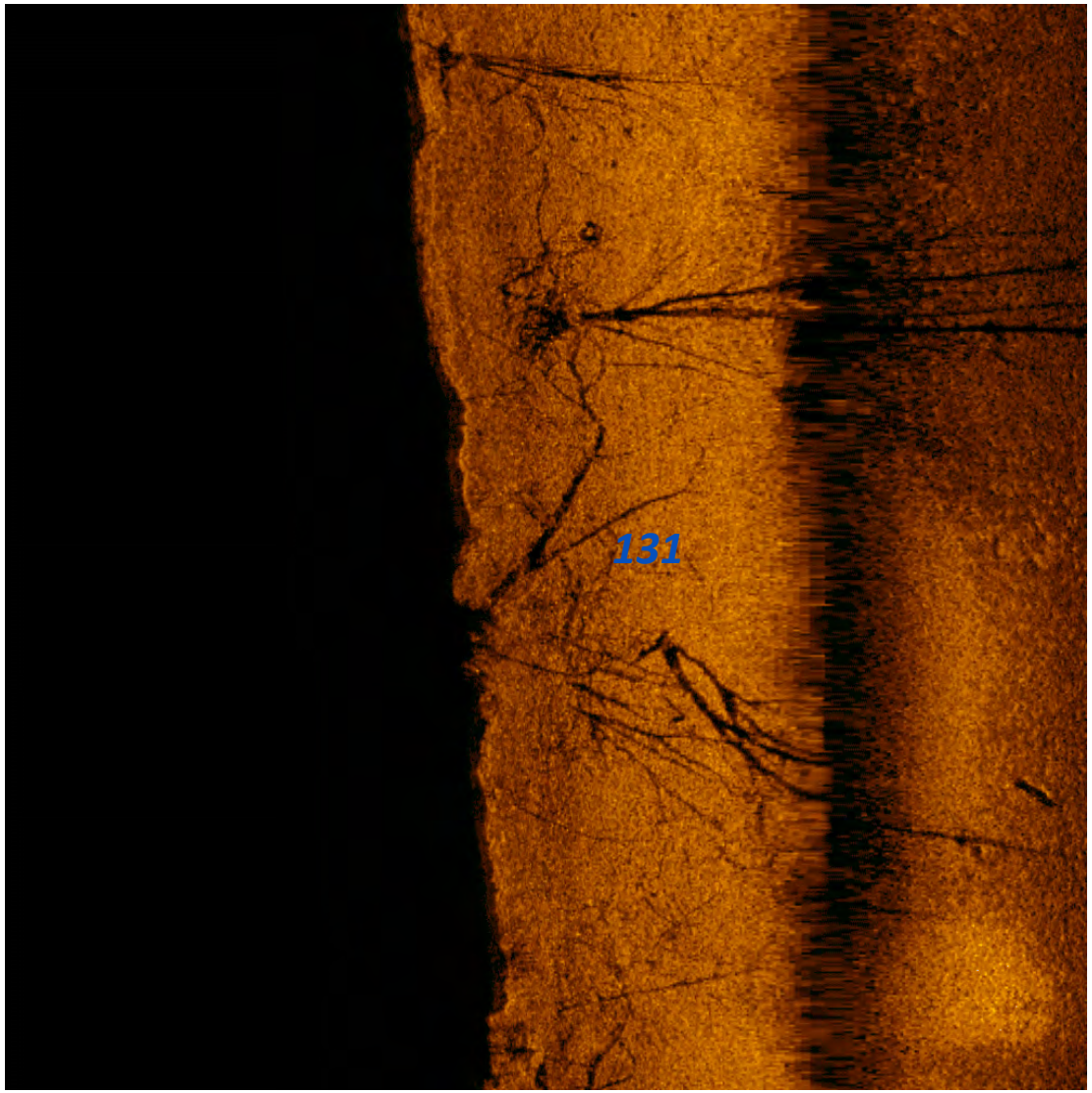


Marine Professionals Since 1919
BRENNAN

Photo ID: 131
Easting (X) 1483561.5
Northing (Y) 632300.01
Description: Potential Log

Dimensions and attributes

- Target Length: 23.30 US ft
- Target Width: 2.65 US ft
- Target Height: 0.72 US ft

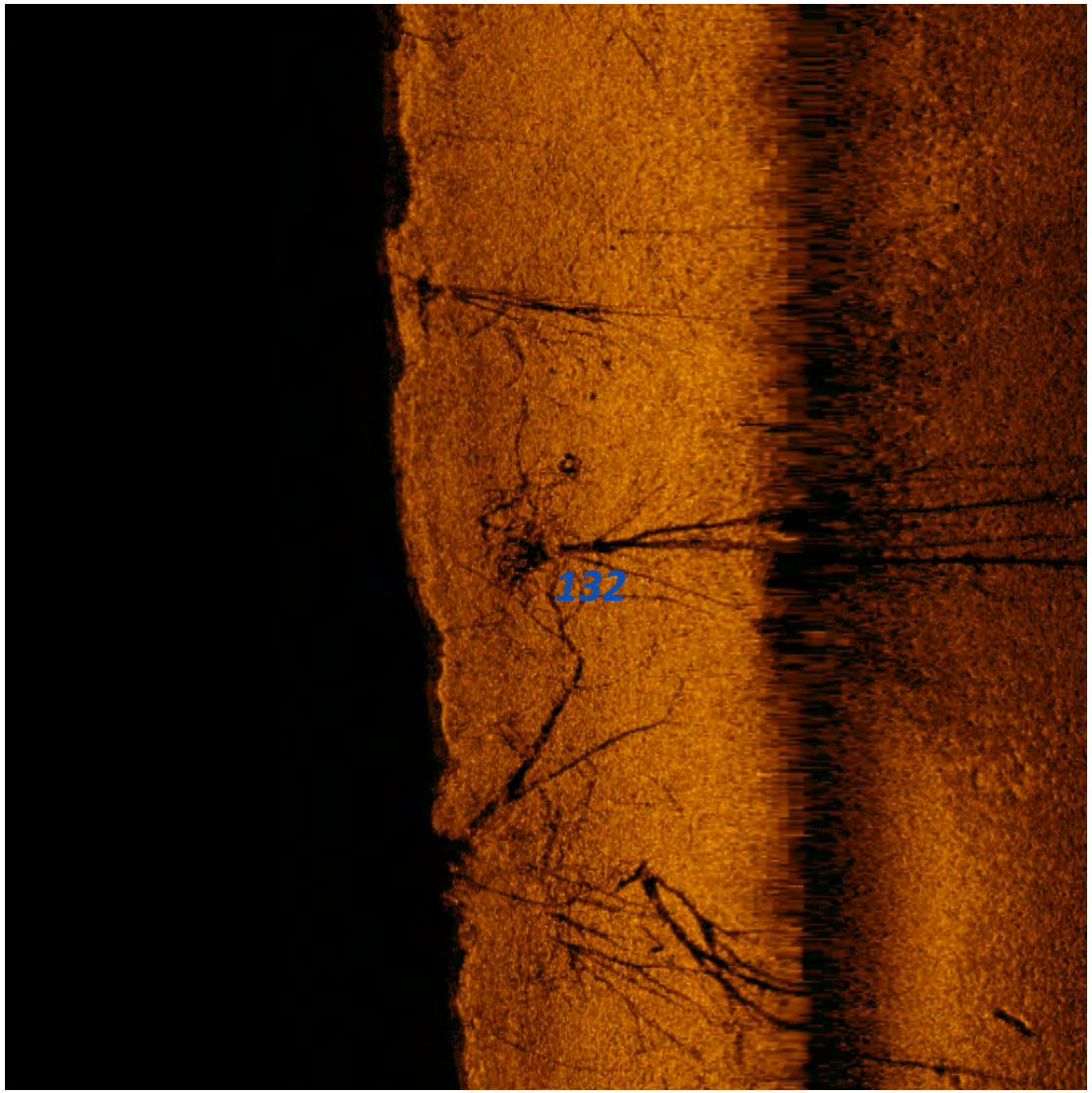


Marine Professionals Since 1919
BRENNAN

Photo ID: 132
Easting (X) 1483586.68
Northing (Y) 632286.17
Description: Potential Log

Dimensions and attributes

- Target Length: 2.40 US ft
- Target Width: 3.21 US ft
- Target Height: 16.31 US ft

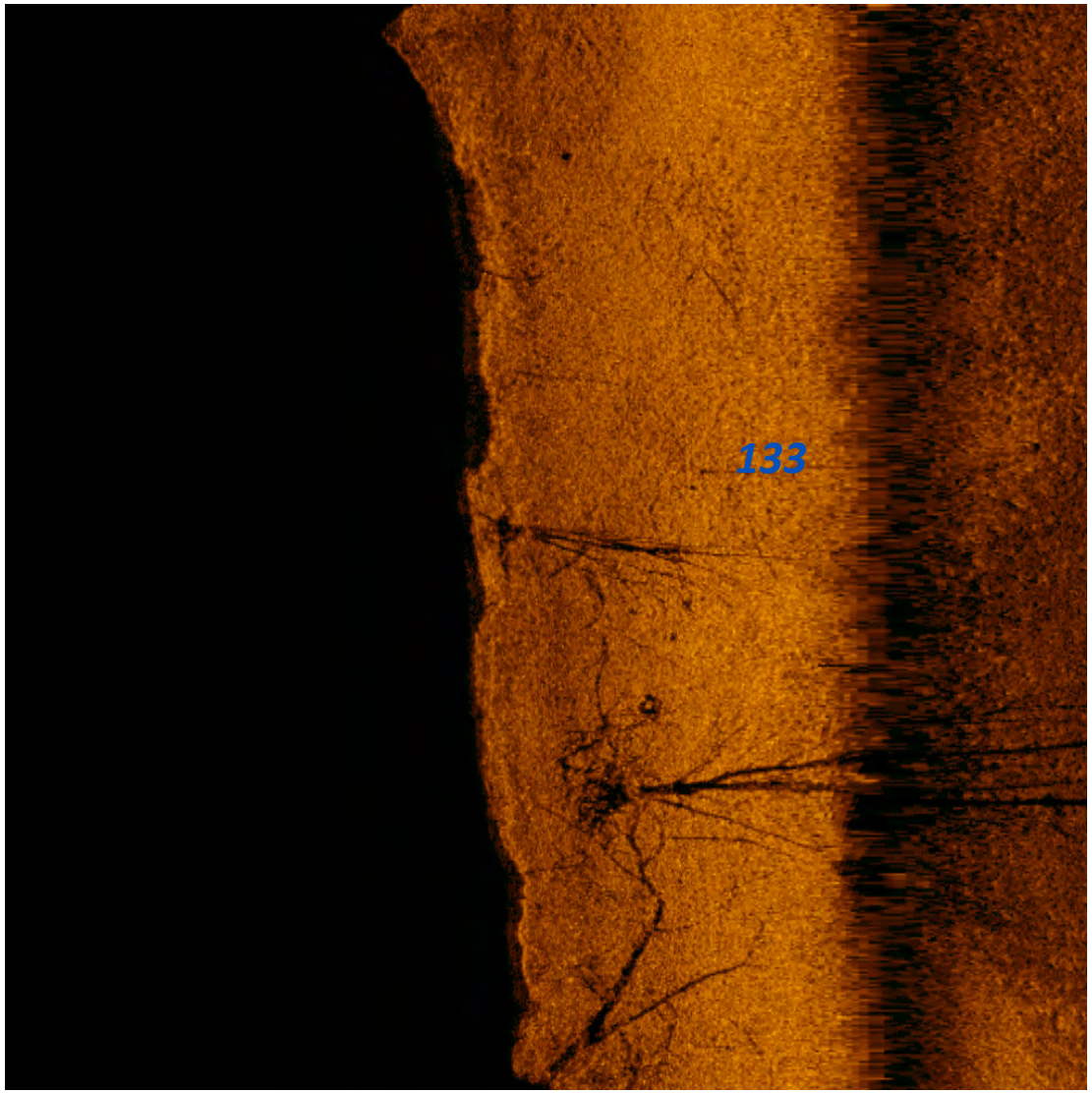


Marine Professionals Since 1919
BRENNAN

Photo ID: 133
Easting (X) 1483608.36
Northing (Y) 632263.98
Description: Potential Log

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

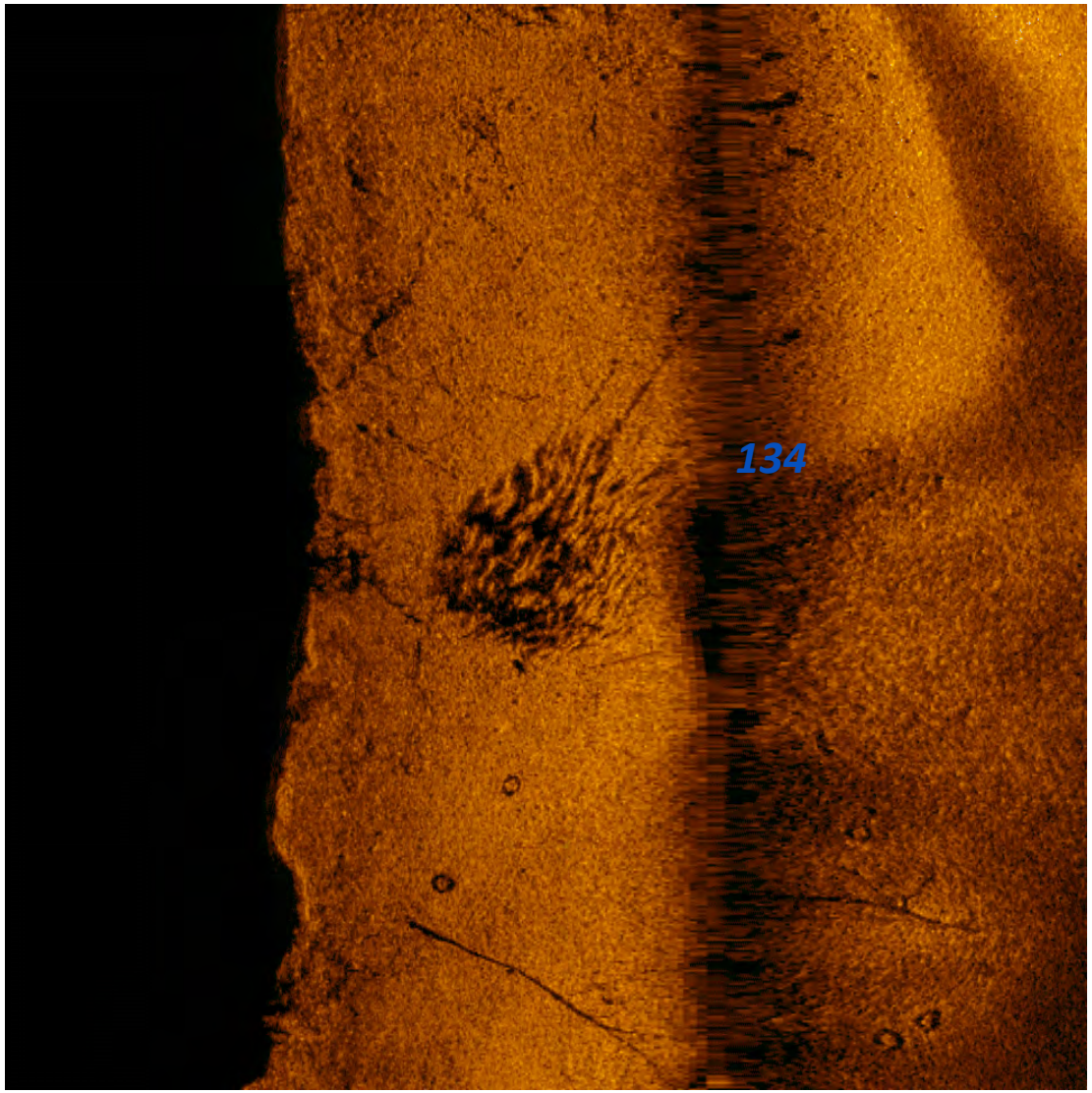


Marine Professionals Since 1919
BRENNAN

Photo ID: 134
Easting (X) 1483727.26
Northing (Y) 632229.78
Description: Potential Logs/ Rubble

Dimensions and attributes

- Target Length: 0.00 US ft
- Target Width: 0.00 US ft
- Target Height: 0.00 US ft

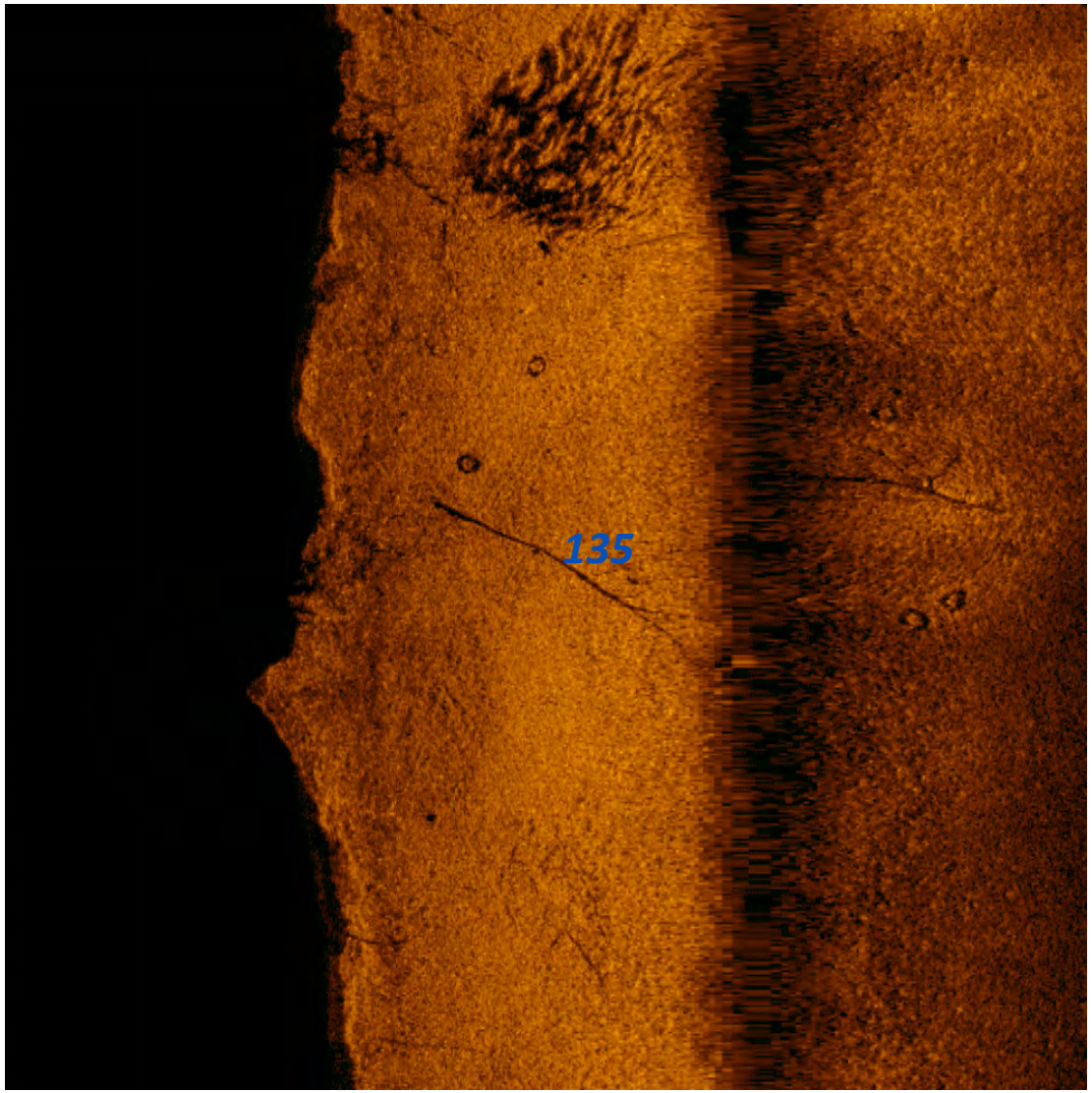


Marine Professionals Since 1919
BRENNAN

Photo ID: 135
Easting (X) 1483682.81
Northing (Y) 632246.25
Description: Potential Log

Dimensions and attributes

- Target Length: 29.58 US ft
- Target Width: 0.88 US ft
- Target Height: 0.57 US ft



Marine Professionals Since 1919
BRENNAN

Appendix D
Analytical Data Validation Reports

Memorandum

February 7, 2019

To:	Julian Hayward	Ref. No.:	038443-340
From:	Angela Bown/cs/48-NF	Tel:	513-942-4750
cc:	Brent Ramdial, Valerie Chan		

Subject: **Analytical Results and Full Validation**
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

1. Introduction

This document details a validation of analytical results for water and sediment samples collected in support of the Quarry Pond Sampling Event at the Moraine, Ohio site during September 2018. Samples were submitted to TestAmerica Laboratories, Inc. (TA) located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2A and Table 2B. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, duplicate data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality (QA/QC) samples. The assessment of analytical and in-house data included checks for data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2, Appendix E – Quality Assurance Project Plan", September 20, 2017

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review", USEPA 540-R-10-011, January 2010

iii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. Most samples were prepared and analyzed within the required holding times. Table 4 presents the sample results that were qualified or rejected (non-detect results greater than two times outside of holding time criteria) due to holding time exceedances.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) and Inductively Coupled Plasma/Mass Spectrometer (ICP/MS)

3.1 Organic Analyses

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

3.2 Inorganic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity, the performance of each ICP/MS instrument used for metals analyses is checked prior to calibration and initiating an analysis sequence through the analysis of a tuning solution.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the method acceptance criteria, indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration - Organic Analyses

4.1 GC/MS

To quantify VOCs and SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

i) All relative response factors (RRFs) must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent (40.0 percent for compounds that exhibit poor response) or a minimum correlation coefficient (R) and minimum coefficient of determination (R^2) of 0.995 and 0.99, respectively, if linear and quadratic equation calibration curves are used

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

4.2 GC

To quantify pesticides, the performance evaluation mixture (PEM) is analyzed at the beginning and end of the initial calibration sequence and throughout the analytical sequence. The results of these analyses are used to evaluate dichlorodiphenyltrichloroethane (DDT)/endrin breakdown, using the method degradation criteria of <15 percent. PEM standards were analyzed at the required frequency throughout sample analysis and all method performance criteria were met.

4.2.1 Internal Standard Calibration – PCBs and Organochlorine Pesticides

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Polychlorinated biphenyls (PCBs) and organochlorine pesticides were calibrated with a dual column analysis using internal standardization. Five peaks, representing five congeners, were used for the analysis of each Aroclor with a separate curve fitted to the calibration data for each congener. A calibration curve consisting of a minimum of five concentration levels was analyzed for all single component compounds of interest. Linearity of the calibration curves are evaluated against the following criteria:

i) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent

ii) A minimum correlation coefficient (R) and minimum coefficient of determination (R^2) of 0.995 and 0.99, respectively, if linear and quadratic equation calibration curves are used

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time, peak resolution, and linearity criteria were satisfied as specified in the method.

4.2.2 External Standard Calibration – Fumigants and Herbicides

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Initially, a calibration curve consisting of a minimum of five concentration levels is analyzed for all single component compounds of interest. Linearity of the calibration curve is acceptable if all RSD values are less than or equal to 20.0 percent or if the coefficient of determination (R^2) is 0.990 or greater for linear regression curves.

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time, peak resolution, and linearity criteria were satisfied as specified in the method.

5. Initial Calibration – Inorganic Analyses

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For ICP/MS analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury atomic absorption (AA) analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve, and resulting correlation coefficients (R) must be 0.995 or greater. For instrumental general chemistry analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve, and resulting correlation coefficients (R) must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

Analytical Method	Parameter	Control Limits
ICP/MS	Metals	90 - 110%
Cold Vapor AA	Mercury	80 - 120%
Instrumental General Chemistry	Methyl Mercury, Cyanide, Anions, Hardness, Total Dissolved Solids, Sulfide, Total Organic Carbon	85 - 115% or laboratory established limits

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that the instrumentation used for metals and general chemistry analyses were properly calibrated prior to sample analysis.

6. Continuing Calibration - Organic Analyses

6.1 GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) All RRF values must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) Percent difference (%D) values must not exceed 25.0 percent (40.0 percent for compounds that exhibit poor response)

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability with the exception of the sample results presented with qualifiers in Table 5.

6.2 GC

To ensure that the calibration of the instrument for organic analyses by GC is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. To evaluate the continued linearity of the calibration, %D values are calculated for each compound. As specified in the methods, all %D values should not exceed 15% (20%D for herbicides and organochlorine pesticides). To ensure that compound retention times do not vary over the analysis period, all retention times for continuing calibration compounds must fall within the established retention time windows.

All continuing calibration standards were analyzed at the required frequency. All %D values and compound retention times met the above criteria indicating acceptable instrument calibration throughout the analysis period with the exception of herbicide and organochlorine pesticide results presented with qualifiers in Table 5.

7. Continuing Calibration - Inorganic Analyses

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

8. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

8.1 Organic Analyses

Most method blank results were non-detect. Table 6 presents the sample results that were qualified as non-detect due to analyte concentrations in the method blanks.

8.2 Inorganic Analyses

Upon review of the ICBs, CCBs, and method blanks, it was noted that metal concentrations were observed above the method detection limit (MDL). Most investigative samples associated with the low-level detections reported either non-detect concentrations or concentrations significantly greater than the associated laboratory blank concentrations for the analytes of interest. These sample results were not impacted by the contamination detected. Associated positive sample results with similar concentrations to the levels reported in the blanks were qualified as non-detect (see Table 6).

9. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for organic determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. Due to dilutions equal to or greater than 5 times that were necessary to successfully analyze the samples, numerous surrogate recoveries in investigative samples analyzed for pesticides, PCBs, and SVOCs were not assessed. Most remaining surrogate recoveries were within the laboratory criteria. Where surrogate recoveries were above the control limits, non-detect sample results were not impacted by the implied high bias and were not qualified. Table 7 presents the sample results that were qualified due to outlying surrogate recoveries.

10. Internal Standards (IS) Analyses

IS data were evaluated for all VOC, SVOC, PCB, Pesticide, and ICP/MS metals sample analyses.

10.1 Organics Analyses

To ensure that changes in the GC/MS and GC sensitivity and response do not affect sample analysis results IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

i) The retention time of the IS must not vary more than ±30 seconds from the associated calibration standard

ii) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard

All organic IS recoveries and retention times met the above criteria.

10.2 Inorganic Analyses

IS elements were added to all samples prior to metals analysis by ICP/MS. Overall instrument stability and performance for metals analyses were monitored using the IS intensity data. IS recoveries were assessed using control limits of 60-125 percent.

All inorganic IS recoveries were within the acceptance limits.

11. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

High LCS/LCSD recoveries and/or RPDs do not affect the associated non-detect sample results.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

11.1 Organic Analyses

The LCS or LCS/LCSD contained all compounds of interest or the compounds specified in the method. All LCS recoveries and RPDs were within the laboratory control limits or did not warrant qualification of the associated sample results.

11.2 Inorganic Analyses

The LCS or LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits demonstrating acceptable analytical accuracy and precision.

12. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD. High MS/MSD recoveries and/or RPDs do not affect the associated non-detect sample results.

Due to dilutions that were necessary to successfully analyze the samples, some MS/MSD recoveries were not assessed.

MS/MSD analyses were performed as specified in Table 1.

12.1 Organic Analyses

The MS/MSD samples were spiked with all compounds of interest or the compounds specified in the method. Most percent recoveries and RPD values, if applicable, were within the laboratory control limits, or did not warrant qualifications, and demonstrated acceptable analytical accuracy and precision. The sample results that were qualified or rejected (less than 10% recovery) due to outlying MS/MSD recoveries and/or RPDs are presented in Table 8.

12.2 Inorganic Analyses

The MS or MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". Most percent recoveries and RPD values, if applicable, were within the laboratory control limits, or did not warrant qualifications, and demonstrated acceptable analytical accuracy and precision. The sample results that were qualified due to outlying MS/MSD recoveries and/or RPDs are presented in Table 8.

13. ICP/MS Serial Dilution

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of 1 per 20 investigative samples or at least 1 per analytical batch must be analyzed at a five-fold dilution. For samples with sufficient analyte concentrations (>50 times the method detection limit), the serial dilution results must agree within 10 percent of the original results.

A serial dilution was performed on each MS/MSD sample. Most results met the criteria above. Table 9 presents the zinc results that were qualified as estimated due to outlying serial dilution results.

14. ICP Interference Check Sample Analysis (ICS)

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning and end of each sample analysis period. The ICSs are evaluated against recovery control limits in the "Guidelines" of 80 to 120 percent.

ICS analysis results were evaluated for all samples using the criteria in the "Guidelines". All ICS recoveries and results were acceptable.

15. Field QA/QC Samples

The field QA/QC consisted of nine trip blank samples, two equipment blank samples, and five field duplicate sample sets.

15.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, nine trip blanks were submitted to the laboratory for VOC analysis. Several target analytes were detected in the trip blank samples. Most associated sample results were non-detect or were significantly greater than the trip blank results and were not impacted. Table 10 presents the sample result that was qualified as non-detect due to analyte concentration in the trip blank sample.

15.2 Equipment Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, two equipment blank samples were submitted for analysis, as identified in Table 1. Target analytes were detected in the equipment blanks. All associated sample results were either non-detect for the analytes of interest or were significantly greater than the equipment blank results. Qualification of the associated sample results was not necessary on this basis.

15.3 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, five field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples and less than 100 percent for sediment samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples and two times the RL value for sediment samples.

Most field duplicate results were within acceptable agreement demonstrating acceptable sampling and analytical precision. Table 11 presents the sample results that were qualified due to variability in the field duplicate results.

16. Total versus Dissolved Results

Most dissolved metals results were less than the total results or were within the normal variability of the method (20%D).

17. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte adjusted for specific sample dilutions and volumes. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Table 2A and Table 2B unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the sample specific MDL in Table 2A and Table 2B.

Sediment samples were reported on dry weight basis. Some sediment percent solids were less than 50 percent. The associated sample results were not qualified, however, it should be noted that the amount of moisture present could introduce analytical variability.

18. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

Pesticide and PCB analyses were performed using dual column analyses. Most results showed good correlation between the two columns (<40 RPD). Table 12 presents the sample results that were qualified as estimated (J) or presumptively identified compound, estimated concentration (NJ) due to differences in dual column results.

19. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2A and Table 2B are acceptable with the specific qualifications and exceptions noted herein.

Table 1

Sample Collection and Analysis Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

							Analysis/Parameters															
Sample Identification	**Location**	**Start Depth (ft bgs)**	**End Depth (ft bgs)**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**VOCs**	**SVOCs**	**Fumigants**	**Pesticides**	**PCBs**	**Herbicides**	**Select Metals**	**Mercury**	**Methyl Mercury**	**Cyanide**	**AVS-SEM**	**Anions**	**Hardness**	**TDS**	**Sulfide**	**TOC**	**Comments**
SW-38443-091818-GL-001	SW-1	22.7	-	Water	09/18/2018	13:46	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091818-GL-002	SW-1	5	-	Water	09/18/2018	14:10	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091818-GL-003	SW-10	5	-	Water	09/18/2018	15:00	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091818-GL-004	SW-10	5	-	Water	09/18/2018	15:15	X	X	X	X	X	X	X	X		X		X	X	X	X		FD(SW-38443-091818-GL-003)
TRIPBLANK-091818-001	-	-	-	Water	09/18/2018	-	X																Trip Blank
TRIPBLANK-091818-002	-	-	-	Water	09/18/2018	-			X														Trip Blank
SW-38443-091918-JPF-005	SW-9	5	-	Water	09/19/2018	08:35	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-006	SW-8	5	-	Water	09/19/2018	09:16	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-007	SW-8	18.7	-	Water	09/19/2018	09:43	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-008	SW-2	5	-	Water	09/19/2018	10:55	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-009	SW-2	28.1	-	Water	09/19/2018	11:30	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-010	SW-6	3.3	-	Water	09/19/2018	12:15	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-38443-091918-JPF-011	SW-5	5	-	Water	09/19/2018	14:10	X	X	X	X	X	X	X	X		X		X	X	X	X		MS/MSD
TRIP BLANK-091918-003	-	-	-	Water	09/19/2018	-	X																Trip Blank
TRIP BLANK-091918-004	-	-	-	Water	09/19/2018	-			X														Trip Blank
SW-38443-091918-JPF-012	SW-4	5	-	Water	09/19/2018	15:30	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-092018-38443-GL-013	SW-3	17.11	-	Water	09/20/2018	09:10	X	X	X	X	X	X	X	X		X		X	X	X	X		MS/MSD
SW-092018-38443-GL-014	SW-3	5	-	Water	09/20/2018	09:12	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-092018-38443-GL-015	SW-3	5	-	Water	09/20/2018	09:30	X	X	X	X	X	X	X	X		X		X	X	X	X		FD(SW-092018-38443-GL-014)
SW-092018-38443-GL-016	SW-7	5	-	Water	09/20/2018	10:30	X	X	X	X	X	X	X	X		X		X	X	X	X		
SW-092018-38443-GL-017	SW-7	12.11	-	Water	09/20/2018	10:35	X	X	X	X	X	X	X	X		X		X	X	X	X		
TRIP BLANK-092018-005	-	-	-	Water	09/20/2018	-	X																Trip Blank
TRIP BLANK-092018-006	-	-	-	Water	09/20/2018	-			X														Trip Blank
SED-092018-38443-JPF-001	SD-05	0	0.5	Sediment	09/20/2018	15:45	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-002	SD-05	0.5	1.5	Sediment	09/21/2018	08:20	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-003	SD-04	0	0.5	Sediment	09/21/2018	08:50	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-004	SD-04	0.5	1.5	Sediment	09/21/2018	09:30	X	X		X	X	X	X	X	X	X	X					X	MS/MSD
SED-092118-38443-JPF-005	SD-03	0	0.5	Sediment	09/21/2018	10:52	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-006	SD-02	0	0.5	Sediment	09/21/2018	11:42	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-007	SD-02	0	0.5	Sediment	09/21/2018	11:50	X	X		X	X	X	X	X	X	X	X					X	FD(SED-092018-38443-JPF-006)
SED-092118-38443-JPF-008	SD-06	0	0.5	Sediment	09/21/2018	12:30	X	X		X	X	X	X	X	X	X	X					X	MS/MSD
SED-092118-38443-JPF-009	SD-17	0	0.5	Sediment	09/21/2018	13:26	X	X		X	X	X	X	X	X	X	X					X	
SED-092118-38443-JPF-010	SD-20	0	0.5	Sediment	09/21/2018	14:50	X	X		X	X	X	X	X	X	X	X					X	
SED-092418-38443-JPF-011	SD-19	0	0.5	Sediment	09/24/2018	12:40	X	X		X	X	X	X	X	X	X	X					X	
SED-092418-38443-JPF-012	SD-19	0.5	1.5	Sediment	09/24/2018	13:45	X	X		X	X	X	X	X	X	X	X					X	

Table 1

Sample Collection and Analysis Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Sample Identification	Location	Start Depth (ft bgs)	End Depth (ft bgs)	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters															Comments
							VOCs	SVOCs	Fumigants	Pesticides	PCBs	Herbicides	Select Metals	Mercury	Methyl Mercury	Cyanide	AVS-SEM	Anions	Hardness	TDS	Sulfide	TOC	
EB-092418-38443-JPF-001	-	-	-	Water	09/24/2018	13:58	X	X		X	X	X	X	X		X							Equipment Blank
SED-092418-38443-JPF-013	SD-18	0	0.5	Sediment	09/24/2018	14:30	X	X		X	X	X	X	X	X	X	X					X	
TRIP BLANK-092418-007	-	-	-	Water	09/24/2018	-	X																Trip Blank
SED-092518-38443-JPF-014	SD-08	0.5	1.5	Sediment	09/25/2018	08:50		X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-015	SD-08	0	0.5	Sediment	09/25/2018	08:55	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-016	SD-10	0	0.5	Sediment	09/25/2018	10:30	X	X		X	X	X	X	X	X	X	X					X	MS/MSD
SED-092518-38443-JPF-017	SD-07	0	0.5	Sediment	09/25/2018	10:52	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-018	SD-06	0.5	1.5	Sediment	09/25/2018	11:50	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-019	SD-11	0	0.5	Sediment	09/25/2018	12:50	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-020	SD-11	0.5	1.5	Sediment	09/25/2018	13:40	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-021	SD-01	0	0.5	Sediment	09/25/2018	14:24	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-022	SD-13	0	0.5	Sediment	09/25/2018	15:00	X	X		X	X	X	X	X	X	X	X					X	
SED-092518-38443-JPF-023	SD-13	0	0.5	Sediment	09/25/2018	15:15	X	X		X	X	X	X	X	X	X	X					X	FD(SED-092518-38443-JPF-022)
SED-092518-38443-JPF-024	SD-13	0.5	1.5	Sediment	09/25/2018	15:48	X	X		X	X	X	X	X	X	X	X					X	
SED-092618-38443-JPF-025	SD-16	0	0.5	Sediment	09/26/2018	08:30	X	X		X	X	X	X	X	X	X	X					X	
SED-092618-38443-JPF-026	SD-14	0	0.5	Sediment	09/26/2018	09:15	X	X		X	X	X	X	X	X	X	X					X	
SED-092618-38443-JPF-027	SD-14	0	0.5	Sediment	09/26/2018	09:30	X	X		X	X	X	X	X	X	X	X					X	FD(SED-092618-38443-JPF-026)
SED-092618-38443-JPF-028	SD-14	0.5	1.5	Sediment	09/26/2018	10:50	X	X		X	X	X	X	X	X	X	X					X	
SED-092618-38443-JPF-029	SD-15	0	0.5	Sediment	09/26/2018	11:38	X	X		X	X	X	X	X	X	X	X					X	
SED-092618-38443-JPF-030	SD-12	0	0.5	Sediment	09/26/2018	12:35	X	X		X	X	X	X	X	X	X	X					X	
TRIP BLANK-092618-009	-	-	-	Water	09/26/2018	-			X														Trip Blank
TRIP BLANK-092618-010	-	-	-	Water	09/26/2018	-	X																Trip Blank
EB-38443-092618-JPF-002	-	-	-	Water	09/26/2018	11:00	X	X	X	X	X	X	X	X	X	X							Equipment Blank

Notes:

-	- Not applicable
DUP	- Laboratory Duplicate
FD	- Field Duplicate sample of sample in parentheses
ft bgs	- Feet below ground surface
MS/MSD	- Matrix Spike/Matrix Spike Duplicate
PCBs	- Polychlorinated Biphenyls
SVOCs	- Semi-volatile Organic Compounds
VOCs	- Volatile Organic Compounds

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 U	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.41 J	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	2.9 J	1.2 U
2-Hexanone	µg/L	0.54 U	1.1 J	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.88 J	0.42 U
Acetone	µg/L	5.4 U	13 U	5.4 U
Benzene	µg/L	0.13 U	0.21 J	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 U	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.21 J	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.17 J	0.34 J	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.58 J	1.2 J	0.29 J
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
o-Xylene	µg/L	0.28 J	0.56 J	0.12 J
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.82 J	2.6	0.35 J
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.21 J	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.86 J	1.8 J	0.41 J
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.55 U	0.54 U	0.55 U
2,4,5-Trichlorophenol	µg/L	2.0 U	1.9 U	2.0 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.8 U	1.8 U
2,4-Dichlorophenol	µg/L	0.26 U	0.26 U	0.26 U
2,4-Dimethylphenol	µg/L	0.51 U	0.51 U	0.52 U
2,4-Dinitrophenol	µg/L	6.1 U	6.1 U	6.2 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.1 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.1 U
2-Chloronaphthalene	µg/L	0.48 U	0.47 U	0.48 U
2-Chlorophenol	µg/L	0.27 U	0.27 U	0.27 U
2-Methylnaphthalene	µg/L	0.11 U	0.12 J	0.11 U
2-Methylphenol	µg/L	0.21 U	0.20 U	0.21 U
2-Nitroaniline	µg/L	0.50 U	0.50 U	0.51 U
2-Nitrophenol	µg/L	0.56 U	0.55 U	0.56 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.2 U
3-Nitroaniline	µg/L	0.56 U	0.55 U	0.57 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.8 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.49 U	0.49 U	0.50 U
4-Chloro-3-methylphenol	µg/L	0.29 U	0.29 U	0.30 U
4-Chloroaniline	µg/L	0.31 U	0.31 U	0.32 U
4-Chlorophenyl phenyl ether	µg/L	0.55 U	0.54 U	0.55 U
4-Nitroaniline	µg/L	0.91 U	0.90 U	0.92 U
4-Nitrophenol	µg/L	2.2 U	2.1 U	2.2 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.13 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Acetophenone	µg/L	0.36 U	0.36 U	0.37 U
Anthracene	µg/L	0.13 U	0.13 U	0.14 U
Atrazine	µg/L	0.94 U	0.93 U	0.95 U
Benzaldehyde	µg/L	0.75 U	0.74 U	0.76 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.17 U	0.18 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.49 U	0.48 U	0.49 U
bis(2-Chloroethoxy)methane	µg/L	0.45 U	0.45 U	0.46 U
bis(2-Chloroethyl)ether	µg/L	0.40 U	0.39 U	0.40 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.2 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.66 U	0.65 U	0.67 U
Caprolactam	µg/L	0.92 U	0.92 U	0.93 U
Carbazole	µg/L	0.49 U	0.48 U	0.49 U
Chrysene	µg/L	0.18 U	0.18 U	0.19 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.81 U	0.80 U	0.82 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.56 U	0.55 U	0.56 U
Diethyl phthalate	µg/L	3.8 U	3.7 U	3.8 U
Dimethyl phthalate	µg/L	0.51 U	0.50 U	0.52 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.16 U
Fluorene	µg/L	0.17 U	0.17 U	0.17 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
Hexachlorobutadiene	µg/L	0.54 U	0.53 U	0.54 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.8 U
Hexachloroethane	µg/L	0.39 U	0.39 U	0.40 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.14 U
Isophorone	µg/L	0.32 U	0.32 U	0.32 U
N-Nitrosodi-n-propylamine	µg/L	0.25 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.43 U	0.44 U
Naphthalene	µg/L	0.11 U	0.17 J	0.11 U
Nitrobenzene	µg/L	0.51 U	0.50 U	0.51 U
Pentachlorophenol	µg/L	3.1 U	3.0 U	3.1 U
Phenanthrene	µg/L	0.17 U	0.16 U	0.17 U
Phenol	µg/L	0.13 U	0.13 U	0.13 U
Pyrene	µg/L	0.17 U	0.17 U	0.18 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Herbicides				
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.056 U	0.58 U	0.054 U
Aroclor-1221 (PCB-1221)	µg/L	0.057 U	0.59 U	0.055 U
Aroclor-1232 (PCB-1232)	µg/L	0.074 U	0.76 U	0.071 U
Aroclor-1242 (PCB-1242)	µg/L	0.076 U	0.78 U	0.073 U
Aroclor-1248 (PCB-1248)	µg/L	0.050 U	0.52 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.040 U	0.41 U	0.074 J
Aroclor-1260 (PCB-1260)	µg/L	0.046 U	0.47 U	0.044 U
Pesticides				
4,4'-DDD	µg/L	0.0053 U	0.27 U	0.0051 U
4,4'-DDE	µg/L	0.0043 U	0.22 U	0.0041 U
4,4'-DDT	µg/L	0.0048 U	0.25 U	0.0046 U
Aldrin	µg/L	0.0024 U	0.0025 U	0.0023 U
alpha-BHC	µg/L	0.0020 U	0.10 U	0.0019 U
alpha-Chlordane	µg/L	0.0032 U	0.0033 U	0.0031 U
beta-BHC	µg/L	0.0046 U	0.24 U	0.0044 U
delta-BHC	µg/L	0.0043 U	0.22 U	0.0041 U
Dieldrin	µg/L	0.0023 U	0.0024 U	0.0022 U
Endosulfan I	µg/L	0.0037 U	0.0038 U	0.0036 U
Endosulfan II	µg/L	0.0023 U	0.12 U	0.0022 U
Endosulfan sulfate	µg/L	0.0037 U	0.19 U	0.0036 U
Endrin	µg/L	0.0025 U	0.0026 U	0.0024 U
Endrin aldehyde	µg/L	0.0046 U	0.24 U	0.0044 U
Endrin ketone	µg/L	0.0040 U	0.21 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0025 U	0.13 U	0.0024 U
gamma-Chlordane	µg/L	0.0050 U	0.0052 U	0.0048 U
Heptachlor	µg/L	0.0033 U	0.0034 U	0.0032 U
Heptachlor epoxide	µg/L	0.0026 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0047 U	0.24 U	0.0045 U
Toxaphene	µg/L	0.058 U	0.060 U	0.056 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Metals				
Mercury	ng/L	0.48 U	2.6	0.44 U
Methyl mercury	ng/L	--	--	--
Aluminum	µg/L	34 U	39 J	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	2.1 J	13	1.8 J
Arsenic (dissolved)	µg/L	1.7 J	10	1.6 J
Barium	µg/L	86	180	78
Barium (dissolved)	µg/L	79	150	77
Beryllium	µg/L	0.31 U	0.67 J	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.57 J	0.31 U
Cadmium	µg/L	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U
Calcium	µg/L	40000	70000	36000
Calcium (dissolved)	µg/L	37000	64000	35000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.60 J	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.41 J	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	4000	47 U
Iron (dissolved)	µg/L	47 U	3200	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	27000	30000	24000
Magnesium (dissolved)	µg/L	25000	29000	24000
Manganese	µg/L	7.4	2000	5.2
Manganese (dissolved)	µg/L	2.1 U	1600	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-1**	**SW-1**	**SW-2**
	Sample Name:	**SW-38443-091818-GL-002**	**SW-38443-091818-GL-001**	**SW-38443-091918-JPF-008**
	Sample Date:	**09/18/2018**	**09/18/2018**	**09/19/2018**
	Depth:	**5 ft BWS**	**22.7 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Metals				
Potassium	µg/L	5900	6300	5400
Potassium (dissolved)	µg/L	5600	6200	5400
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	22000	25000	20000
Sodium (dissolved)	µg/L	21000	24000	20000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	1.0 J	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U
General Chemistry				
Chloride	mg/L	30	34	30
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.15	0.17	0.19
Hardness	mg/L	210	300	190
Hardness, carbonate	mg/L	99	170	89
Hardness, magnesium	mg/L	110	120	100
Sulfate	mg/L	22	8.7	22
Sulfide	mg/L	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	250	360	240
Nitrate (as N)	µg/L	14 U	14 U	14 U
Nitrite (as N)	µg/L	14 U	14 U	14 U
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 U	0.13 U
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.7 J	17 J
Benzene	µg/L	0.36 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 U
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.22 J	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 UJ	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 J	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.40 J	0.27 J	0.23 J
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
o-Xylene	µg/L	0.20 J	0.090 U	0.18 J
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	3.6	0.24 J	0.22 J
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 UJ	0.67 U	0.67 U
Trichloroethene	µg/L	0.29 J	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.60 J	0.27 J	0.41 J
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.53 UJ	0.55 U	0.53 U
2,4,5-Trichlorophenol	µg/L	1.9 U	2.0 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	1.8 U	1.7 U
2,4-Dichlorophenol	µg/L	0.25 U	0.26 U	0.25 U
2,4-Dimethylphenol	µg/L	0.50 U	0.52 U	0.50 U
2,4-Dinitrophenol	µg/L	6.0 U	6.2 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.1 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.0 U
2-Chloronaphthalene	µg/L	0.47 U	0.48 U	0.46 U
2-Chlorophenol	µg/L	0.27 U	0.27 U	0.26 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.21 U	0.20 U
2-Nitroaniline	µg/L	0.50 U	0.51 U	0.49 U
2-Nitrophenol	µg/L	0.55 U	0.56 U	0.54 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.2 U	1.1 U
3-Nitroaniline	µg/L	0.55 U	0.57 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	2.8 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.50 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.29 U	0.30 U	0.28 U
4-Chloroaniline	µg/L	0.31 U	0.32 U	0.30 U
4-Chlorophenyl phenyl ether	µg/L	0.53 U	0.55 U	0.53 U
4-Nitroaniline	µg/L	0.89 U	0.92 U	0.88 U
4-Nitrophenol	µg/L	2.1 U	2.2 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.13 U	0.12 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Semivolatile Organic Compounds				
Acetophenone	µg/L	0.36 U	0.37 U	0.35 U
Anthracene	µg/L	0.13 U	0.14 U	0.13 U
Atrazine	µg/L	0.92 U	0.95 U	0.92 U
Benzaldehyde	µg/L	0.74 U	0.76 U	0.73 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.16 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.18 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.48 U	0.49 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.44 U	0.46 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.39 U	0.40 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.2 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.65 U	0.67 U	0.64 U
Caprolactam	µg/L	0.91 U	0.93 U	0.90 U
Carbazole	µg/L	0.48 U	0.49 U	0.47 U
Chrysene	µg/L	0.18 U	0.19 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	0.80 U	0.82 U	0.79 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.54 U	0.56 U	0.54 U
Diethyl phthalate	µg/L	3.7 U	3.8 U	3.7 U
Dimethyl phthalate	µg/L	0.50 U	0.52 U	0.50 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.15 U
Fluorene	µg/L	0.16 U	0.17 U	0.16 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.15 U
Hexachlorobutadiene	µg/L	0.53 U	0.54 U	0.52 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.8 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.40 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.14 U	0.13 U
Isophorone	µg/L	0.31 U	0.32 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.25 U	0.25 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.43 U	0.44 U	0.42 U
Naphthalene	µg/L	0.11 U	0.11 U	0.10 U
Nitrobenzene	µg/L	0.50 U	0.51 U	0.49 U
Pentachlorophenol	µg/L	3.0 U	3.1 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.17 U	0.16 U
Phenol	µg/L	0.12 U	0.13 U	0.12 U
Pyrene	µg/L	0.17 U	0.18 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Herbicides				
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.055 U	0.058 U	0.057 U
Aroclor-1221 (PCB-1221)	µg/L	0.056 U	0.059 U	0.058 U
Aroclor-1232 (PCB-1232)	µg/L	0.073 U	0.076 U	0.076 U
Aroclor-1242 (PCB-1242)	µg/L	0.075 U	0.078 U	0.078 U
Aroclor-1248 (PCB-1248)	µg/L	0.049 U	0.052 U	0.051 U
Aroclor-1254 (PCB-1254)	µg/L	0.039 U	0.041 U	0.041 U
Aroclor-1260 (PCB-1260)	µg/L	0.045 U	0.047 U	0.047 U
Pesticides				
4,4'-DDD	µg/L	0.26 U	0.0055 U	0.0054 U
4,4'-DDE	µg/L	0.21 U	0.0044 U	0.0044 U
4,4'-DDT	µg/L	0.24 U	0.0049 U	0.0049 U
Aldrin	µg/L	0.12 U	0.0025 U	0.0024 U
alpha-BHC	µg/L	0.098 U	0.0021 U	0.0020 U
alpha-Chlordane	µg/L	0.16 U	0.0033 U	0.0033 U
beta-BHC	µg/L	0.23 U	0.0047 U	0.0047 U
delta-BHC	µg/L	0.21 U	0.0044 U	0.0044 U
Dieldrin	µg/L	0.11 U	0.0024 U	0.0023 U
Endosulfan I	µg/L	0.18 U	0.0038 U	0.0038 U
Endosulfan II	µg/L	0.11 U	0.0024 U	0.0023 U
Endosulfan sulfate	µg/L	0.18 U	0.0038 U	0.0038 U
Endrin	µg/L	0.12 U	0.0026 U	0.0026 U
Endrin aldehyde	µg/L	0.23 U	0.0047 U	0.0047 U
Endrin ketone	µg/L	0.20 U	0.0041 U	0.0041 U
gamma-BHC (lindane)	µg/L	0.12 U	0.0026 U	0.0026 U
gamma-Chlordane	µg/L	0.25 U	0.0052 U	0.0051 U
Heptachlor	µg/L	0.16 U	0.0034 U	0.0034 U
Heptachlor epoxide	µg/L	0.13 U	0.0027 U	0.0027 U
Methoxychlor	µg/L	0.23 U	0.0048 U	0.0048 U
Toxaphene	µg/L	2.8 U	0.060 U	0.059 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Metals				
Mercury	ng/L	2.2	0.21 U	0.28 U
Methyl mercury	ng/L	--	--	--
Aluminum	µg/L	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	14	1.7 J	1.9 J
Arsenic (dissolved)	µg/L	12	1.6 J	1.5 J
Barium	µg/L	250	76	77
Barium (dissolved)	µg/L	200	79	76
Beryllium	µg/L	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U
Calcium	µg/L	80000	36000	36000
Calcium (dissolved)	µg/L	71000	37000	35000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.64 J	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.43 J	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	7400	47 U	47 U
Iron (dissolved)	µg/L	6300	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	32000	24000	24000
Magnesium (dissolved)	µg/L	29000	25000	24000
Manganese	µg/L	1800	4.7 J	4.9 J
Manganese (dissolved)	µg/L	1600	2.1 U	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-2**	**SW-3**	**SW-3**
	Sample Name:	**SW-38443-091918-JPF-009**	**SW-092018-38443-GL-014**	**SW-092018-38443-GL-015**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**
	Depth:	**28.1 ft BWS**	**5 ft BWS**	**5 ft BWS**
				Duplicate
Parameters	**Unit**			
Metals				
Potassium	µg/L	6500	5300	5400
Potassium (dissolved)	µg/L	6100	5500	5300
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	27000	24000	20000
Sodium (dissolved)	µg/L	25000	21000	20000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	1.4 J	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	1.1 J	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U
General Chemistry				
Chloride	mg/L	36	30	30
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.19	0.16	0.16
Hardness	mg/L	330	190	190
Hardness, carbonate	mg/L	200	89	90
Hardness, magnesium	mg/L	130	99	100
Sulfate	mg/L	9.9	22	22
Sulfide	mg/L	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	390	260	250
Nitrate (as N)	µg/L	14 U	14 U	14 U
Nitrite (as N)	µg/L	14 U	14 U	14 U
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 U	0.13 U
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 U
Benzene	µg/L	0.13 U	0.21 U	0.21 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 U
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 UJ	0.61 UJ
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.24 J	0.31 J	0.23 J
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
o-Xylene	µg/L	0.090 U	0.14 J	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.35 J	0.46 J	0.30 J
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 UJ	0.67 UJ
Trichloroethene	µg/L	0.20 J	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.24 J	0.45 J	0.23 J
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.55 U	0.55 UJ	0.55 U
2,4,5-Trichlorophenol	µg/L	2.0 U	2.0 U	2.0 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.8 U	1.8 U
2,4-Dichlorophenol	µg/L	0.26 U	0.26 U	0.26 U
2,4-Dimethylphenol	µg/L	0.52 U	0.52 U	0.52 U
2,4-Dinitrophenol	µg/L	6.2 U	6.2 U	6.2 U
2,4-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.1 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.1 U
2-Chloronaphthalene	µg/L	0.48 U	0.48 U	0.48 U
2-Chlorophenol	µg/L	0.27 U	0.27 U	0.27 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.21 U	0.21 U	0.21 U
2-Nitroaniline	µg/L	0.51 U	0.51 U	0.51 U
2-Nitrophenol	µg/L	0.56 U	0.56 U	0.56 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.2 U	1.2 U	1.2 U
3-Nitroaniline	µg/L	0.57 U	0.57 U	0.57 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.8 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.50 U	0.50 U	0.50 U
4-Chloro-3-methylphenol	µg/L	0.30 U	0.30 U	0.30 U
4-Chloroaniline	µg/L	0.32 U	0.32 U	0.32 U
4-Chlorophenyl phenyl ether	µg/L	0.55 U	0.55 U	0.55 U
4-Nitroaniline	µg/L	0.92 U	0.92 U	0.92 U
4-Nitrophenol	µg/L	2.2 U	2.2 U	2.2 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.13 U	0.13 U	0.13 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Acetophenone	µg/L	0.37 U	0.37 U	0.37 U
Anthracene	µg/L	0.14 U	0.14 U	0.14 U
Atrazine	µg/L	0.95 U	0.95 U	0.95 U
Benzaldehyde	µg/L	0.76 U	0.76 U	0.76 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.18 U	0.18 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.49 U	0.49 U	0.49 U
bis(2-Chloroethoxy)methane	µg/L	0.46 U	0.46 U	0.46 U
bis(2-Chloroethyl)ether	µg/L	0.40 U	0.40 U	0.40 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.2 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.67 U	0.67 U	0.67 U
Caprolactam	µg/L	0.93 U	0.93 U	R
Carbazole	µg/L	0.49 U	0.49 U	0.49 U
Chrysene	µg/L	0.19 U	0.19 U	0.19 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.82 U	0.82 U	0.82 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.56 U	0.56 U	0.56 U
Diethyl phthalate	µg/L	3.8 U	3.8 U	3.8 U
Dimethyl phthalate	µg/L	0.52 U	0.52 U	0.52 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.16 U
Fluorene	µg/L	0.17 U	0.17 U	0.17 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
Hexachlorobutadiene	µg/L	0.54 U	0.54 U	0.54 U
Hexachlorocyclopentadiene	µg/L	1.8 U	1.8 U	1.8 U
Hexachloroethane	µg/L	0.40 U	0.40 U	0.40 U
Indeno(1,2,3-cd)pyrene	µg/L	0.14 U	0.14 U	0.14 U
Isophorone	µg/L	0.32 U	0.32 U	0.32 U
N-Nitrosodi-n-propylamine	µg/L	0.25 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.44 U	0.44 U
Naphthalene	µg/L	0.11 U	0.11 U	0.11 U
Nitrobenzene	µg/L	0.51 U	0.51 U	0.51 U
Pentachlorophenol	µg/L	3.1 U	3.1 U	3.1 U
Phenanthrene	µg/L	0.17 U	0.17 U	0.17 U
Phenol	µg/L	0.13 U	0.13 U	0.13 U
Pyrene	µg/L	0.18 U	0.18 U	0.18 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Herbicides				
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.058 U	0.055 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.059 U	0.056 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.077 U	0.073 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.079 U	0.075 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.052 U	0.050 U	0.049 U
Aroclor-1254 (PCB-1254)	µg/L	0.042 U	0.040 U	0.039 U
Aroclor-1260 (PCB-1260)	µg/L	0.048 U	0.046 U	0.045 U
Pesticides				
4,4'-DDD	µg/L	0.0055 U	0.0054 U	0.0052 U
4,4'-DDE	µg/L	0.0045 U	0.0044 U	0.0042 U
4,4'-DDT	µg/L	0.0050 U	0.0049 U	0.0047 U
Aldrin	µg/L	0.0025 U	0.0024 U	0.0024 U
alpha-BHC	µg/L	0.0021 U	0.0020 U	0.0020 U
alpha-Chlordane	µg/L	0.0033 U	0.0033 U	0.0031 U
beta-BHC	µg/L	0.0048 U	0.0047 U	0.0045 U
delta-BHC	µg/L	0.0045 U	0.0044 U	0.0042 U
Dieldrin	µg/L	0.0024 U	0.0023 U	0.0023 U
Endosulfan I	µg/L	0.0039 U	0.0038 U	0.0036 U
Endosulfan II	µg/L	0.0024 U	0.0023 U	0.0023 U
Endosulfan sulfate	µg/L	0.0039 U	0.0038 U	0.0036 U
Endrin	µg/L	0.0026 U	0.0026 U	0.0025 U
Endrin aldehyde	µg/L	0.0048 U	0.0047 U	0.0045 U
Endrin ketone	µg/L	0.0042 U	0.0041 U	0.0039 U
gamma-BHC (lindane)	µg/L	0.0026 U	0.0026 U	0.0025 U
gamma-Chlordane	µg/L	0.0052 U	0.0051 U	0.0049 U
Heptachlor	µg/L	0.0034 U	0.0034 U	0.0032 U
Heptachlor epoxide	µg/L	0.0027 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0049 U	0.0048 U	0.0046 U
Toxaphene	µg/L	0.061 U	0.059 U	0.057 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Metals				
Mercury	ng/L	0.34 U	0.38 U	0.35 U
Methyl mercury	ng/L	--	--	--
Aluminum	µg/L	110	42 J	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	2.0 J	1.8 J	2.0 J
Arsenic (dissolved)	µg/L	1.6 J	1.8 J	1.9 J
Barium	µg/L	79	81	82
Barium (dissolved)	µg/L	74	80	79
Beryllium	µg/L	0.47 J	0.31 U	0.55 J
Beryllium (dissolved)	µg/L	0.88 J	0.31 U	0.75 J
Cadmium	µg/L	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U
Calcium	µg/L	46000	37000	37000
Calcium (dissolved)	µg/L	45000	37000	36000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	150	60 J	49 J
Iron (dissolved)	µg/L	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	26000	25000	25000
Magnesium (dissolved)	µg/L	26000	25000	24000
Manganese	µg/L	17	7.6	7.4
Manganese (dissolved)	µg/L	2.1 U	2.1 U	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-3**	**SW-4**	**SW-5**
	Sample Name:	**SW-092018-38443-GL-013**	**SW-38443-091918-JPF-012**	**SW-38443-091918-JPF-011**
	Sample Date:	**09/20/2018**	**09/19/2018**	**09/19/2018**
	Depth:	**17.11 ft BWS**	**5 ft BWS**	**5 ft BWS**
Parameters	**Unit**			
Metals				
Potassium	µg/L	5600	5500	5600
Potassium (dissolved)	µg/L	5500	5600	5500
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	21000	21000	21000
Sodium (dissolved)	µg/L	21000	21000	21000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U
General Chemistry				
Chloride	mg/L	31	30	30
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.17	0.17	0.17
Hardness	mg/L	220	200	200
Hardness, carbonate	mg/L	110	92	93
Hardness, magnesium	mg/L	110	100	100
Sulfate	mg/L	25	22	22
Sulfide	mg/L	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	280	240	250
Nitrate (as N)	µg/L	410	14 J	14 U
Nitrite (as N)	µg/L	14 U	14 U	14 U
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 U	0.13 U	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	36	5.4 J	5.4 U
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 U	0.76 U	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.15 J	0.26 J	0.16 J	0.31 J
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
o-Xylene	µg/L	0.090 U	0.12 J	0.090 U	0.10 J
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.20 J	0.31 J	0.29 J	0.40 J
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 J	0.38 J	0.16 J	0.41 J
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.56 U	0.56 U	0.59 U	0.53 U
2,4,5-Trichlorophenol	µg/L	2.0 U	2.0 U	2.1 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.8 U	1.9 U	1.7 U
2,4-Dichlorophenol	µg/L	0.26 U	0.27 U	0.28 U	0.25 U
2,4-Dimethylphenol	µg/L	0.52 U	0.53 U	0.56 U	0.50 U
2,4-Dinitrophenol	µg/L	6.3 U	6.3 U	6.7 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.2 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.2 U	2.3 U	2.0 U
2-Chloronaphthalene	µg/L	0.49 U	0.49 U	0.52 U	0.46 U
2-Chlorophenol	µg/L	0.28 U	0.28 U	0.29 U	0.26 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.12 U	0.14 J
2-Methylphenol	µg/L	0.21 U	0.21 U	0.22 U	0.20 U
2-Nitroaniline	µg/L	0.52 U	0.52 U	0.55 U	0.49 U
2-Nitrophenol	µg/L	0.57 U	0.58 U	0.61 U	0.54 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.21 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.2 U	1.2 U	1.2 U	1.1 U
3-Nitroaniline	µg/L	0.57 U	0.58 U	0.61 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.9 U	3.0 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.50 U	0.51 U	0.54 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.30 U	0.30 U	0.32 U	0.28 U
4-Chloroaniline	µg/L	0.32 U	0.32 U	0.34 U	0.30 U
4-Chlorophenyl phenyl ether	µg/L	0.56 U	0.56 U	0.59 U	0.53 U
4-Nitroaniline	µg/L	0.93 U	0.94 U	0.99 U	0.88 U
4-Nitrophenol	µg/L	2.2 U	2.2 U	2.3 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.18 U	0.18 U	0.17 U
Acenaphthylene	µg/L	0.13 U	0.13 U	0.13 U	0.12 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Acetophenone	µg/L	0.37 U	0.37 U	0.39 U	0.35 U
Anthracene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U
Atrazine	µg/L	0.96 U	0.97 U	1.0 U	0.92 U
Benzaldehyde	µg/L	0.77 U	0.77 U	0.82 U	0.73 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U
Benzo(a)pyrene	µg/L	0.17 U	0.18 U	0.19 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.18 U	0.19 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.50 U	0.50 U	0.53 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.46 U	0.46 U	0.49 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.41 U	0.41 U	0.43 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.3 U	2.4 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.67 U	0.68 U	0.72 U	0.64 U
Caprolactam	µg/L	0.94 U	0.95 U	1.0 U	0.90 U
Carbazole	µg/L	0.49 U	0.50 U	0.53 U	0.47 U
Chrysene	µg/L	0.19 U	0.19 U	0.20 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.9 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	0.83 U	0.84 U	0.88 U	0.79 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.16 U	0.15 U
Dibenzofuran	µg/L	0.57 U	0.57 U	0.60 U	0.54 U
Diethyl phthalate	µg/L	3.9 U	3.9 U	4.1 U	3.7 U
Dimethyl phthalate	µg/L	0.52 U	0.53 U	0.55 U	0.50 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U
Fluorene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U
Hexachlorobutadiene	µg/L	0.55 U	0.55 U	0.58 U	0.52 U
Hexachlorocyclopentadiene	µg/L	1.8 U	1.8 U	1.9 U	1.7 U
Hexachloroethane	µg/L	0.40 U	0.40 U	0.42 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.14 U	0.14 U	0.15 U	0.13 U
Isophorone	µg/L	0.33 U	0.33 U	0.35 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.26 U	0.26 U	0.27 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.45 U	0.47 U	0.42 U
Naphthalene	µg/L	0.11 U	0.11 U	0.12 U	0.17 J
Nitrobenzene	µg/L	0.52 U	0.52 U	0.55 U	0.49 U
Pentachlorophenol	µg/L	3.1 U	3.2 U	3.3 U	3.0 U
Phenanthrene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U
Phenol	µg/L	0.13 U	0.13 U	0.14 U	0.12 U
Pyrene	µg/L	0.18 U	0.18 U	0.19 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Herbicides					
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/L	0.057 U	0.054 U	0.057 U	0.053 U
Aroclor-1221 (PCB-1221)	µg/L	0.058 U	0.055 U	0.058 U	0.054 U
Aroclor-1232 (PCB-1232)	µg/L	0.075 U	0.071 U	0.076 U	0.070 U
Aroclor-1242 (PCB-1242)	µg/L	0.077 U	0.073 U	0.078 U	0.072 U
Aroclor-1248 (PCB-1248)	µg/L	0.051 U	0.048 U	0.051 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.040 U	0.038 U	0.041 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.046 U	0.044 U	0.047 U	0.044 U
Pesticides					
4,4'-DDD	µg/L	0.0054 U	0.0051 U	0.0054 U	0.0050 U
4,4'-DDE	µg/L	0.0043 U	0.0041 U	0.0044 U	0.0041 U
4,4'-DDT	µg/L	0.0048 U	0.0046 U	0.0049 U	0.0046 U
Aldrin	µg/L	0.0024 U	0.0023 U	0.0024 U	0.0023 U
alpha-BHC	µg/L	0.0020 U	0.0019 U	0.0020 U	0.0019 U
alpha-Chlordane	µg/L	0.0032 U	0.0031 U	0.0033 U	0.0030 U
beta-BHC	µg/L	0.0046 U	0.0044 U	0.0047 U	0.0044 U
delta-BHC	µg/L	0.0043 U	0.0041 U	0.0044 U	0.0041 U
Dieldrin	µg/L	0.0023 U	0.0022 U	0.0023 U	0.0022 U
Endosulfan I	µg/L	0.0037 U	0.0036 U	0.0038 U	0.0035 U
Endosulfan II	µg/L	0.0023 U	0.0022 U	0.0023 U	0.0022 U
Endosulfan sulfate	µg/L	0.0037 U	0.0036 U	0.0038 U	0.0035 U
Endrin	µg/L	0.0025 U	0.0024 U	0.0026 U	0.0024 U
Endrin aldehyde	µg/L	0.0046 U	0.0044 U	0.0047 U	0.0044 U
Endrin ketone	µg/L	0.0040 U	0.0038 U	0.0041 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0025 U	0.0024 U	0.0026 U	0.0024 U
gamma-Chlordane	µg/L	0.0051 U	0.0048 U	0.0051 U	0.0048 U
Heptachlor	µg/L	0.0033 U	0.0032 U	0.0034 U	0.0031 U
Heptachlor epoxide	µg/L	0.0026 U	0.0025 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0047 U	0.0045 U	0.0048 U	0.0045 U
Toxaphene	µg/L	0.059 U	0.056 U	0.059 U	0.055 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Metals					
Mercury	ng/L	0.45 U	0.27 U	0.40 U	0.44 U
Methyl mercury	ng/L	--	--	--	--
Aluminum	µg/L	34 U	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	1.9 J	1.8 J	2.0 J	1.9 J
Arsenic (dissolved)	µg/L	1.7 J	1.7 J	1.7 J	1.8 J
Barium	µg/L	82	76	73	79
Barium (dissolved)	µg/L	81	77	69	82
Beryllium	µg/L	0.31 U	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
Calcium	µg/L	38000	35000	36000	36000
Calcium (dissolved)	µg/L	37000	35000	37000	38000
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	47 U	110	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	26000	24000	24000	24000
Magnesium (dissolved)	µg/L	25000	24000	24000	26000
Manganese	µg/L	7.7	5.2	18	4.4 J
Manganese (dissolved)	µg/L	2.1 U	2.1 U	2.1 U	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-6**	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-091918-JPF-010**	**SW-092018-38443-GL-016**	**SW-092018-38443-GL-017**	**SW-38443-091918-JPF-006**
	Sample Date:	**09/19/2018**	**09/20/2018**	**09/20/2018**	**09/19/2018**
	Depth:	**3.3 ft BWS**	**5 ft BWS**	**12.11 ft BWS**	**5 ft BWS**
Parameters	**Unit**				
Metals					
Potassium	µg/L	5600	5300	5200	5500
Potassium (dissolved)	µg/L	5500	5300	5300	5700
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	21000	20000	20000	21000
Sodium (dissolved)	µg/L	21000	20000	20000	22000
Thallium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U
General Chemistry					
Chloride	mg/L	30	30	30	30
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.19	0.16	0.17	0.17
Hardness	mg/L	200	190	190	190
Hardness, carbonate	mg/L	94	89	91	90
Hardness, magnesium	mg/L	110	99	98	100
Sulfate	mg/L	22	22	22	22
Sulfide	mg/L	0.58 U	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	240	250	250	240
Nitrate (as N)	µg/L	14 U	14 U	56 J	15 J
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U
Fumigant					
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-8**	**SW-9**	**SW-10**	**SW-10**
	Sample Name:	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
	Sample Date:	**09/19/2018**	**09/19/2018**	**09/18/2018**	**09/18/2018**
	Depth:	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
					Duplicate
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 UJ	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 U	5.4 U
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 UJ	0.76 UJ	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 J	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.38 J	0.28 J	0.33 J	0.30 J
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Location ID:		SW-8	SW-9	SW-10	SW-10
Sample Name:		SW-38443-091918-JPF-007	SW-38443-091918-JPF-005	SW-38443-091818-GL-003	SW-38443-091818-GL-004
Sample Date:		09/19/2018	09/19/2018	09/18/2018	09/18/2018
Depth:		18.7 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS
					Duplicate
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
o-Xylene	µg/L	0.18 J	0.12 J	0.13 J	0.11 J
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.72 J	0.35 J	0.45 J	0.42 J
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.23 J	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.56 J	0.40 J	0.46 J	0.41 J
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.55 U	0.53 U	0.57 U	0.53 U
2,4,5-Trichlorophenol	µg/L	2.0 U	1.9 U	2.0 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.8 U	1.7 U	1.9 U	1.7 U
2,4-Dichlorophenol	µg/L	0.26 U	0.25 U	0.27 U	0.25 U
2,4-Dimethylphenol	µg/L	0.51 U	0.50 U	0.53 U	0.50 U
2,4-Dinitrophenol	µg/L	6.1 U	6.0 U	6.4 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.1 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.1 U	2.1 U	2.2 U	2.0 U
2-Chloronaphthalene	µg/L	0.48 U	0.47 U	0.50 U	0.46 U
2-Chlorophenol	µg/L	0.27 U	0.27 U	0.28 U	0.26 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.21 U	0.20 U	0.22 U	0.20 U
2-Nitroaniline	µg/L	0.50 U	0.50 U	0.53 U	0.49 U
2-Nitrophenol	µg/L	0.56 U	0.55 U	0.58 U	0.54 U
3&4-Methylphenol	µg/L	0.19 U	0.19 U	0.20 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.2 U	1.1 U
3-Nitroaniline	µg/L	0.56 U	0.55 U	0.58 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	2.7 U	2.9 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.49 U	0.48 U	0.51 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.29 U	0.29 U	0.31 U	0.28 U
4-Chloroaniline	µg/L	0.31 U	0.31 U	0.33 U	0.30 U
4-Chlorophenyl phenyl ether	µg/L	0.55 U	0.53 U	0.57 U	0.53 U
4-Nitroaniline	µg/L	0.91 U	0.89 U	0.95 U	0.88 U
4-Nitrophenol	µg/L	2.2 U	2.1 U	2.2 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.18 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.13 U	0.12 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-8**	**SW-9**	**SW-10**	**SW-10**
	Sample Name:	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
	Sample Date:	**09/19/2018**	**09/19/2018**	**09/18/2018**	**09/18/2018**
	Depth:	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
					Duplicate
Parameters	**Unit**				
Semivolatile Organic Compounds					
Acetophenone	µg/L	0.36 U	0.36 U	0.38 U	0.35 U
Anthracene	µg/L	0.13 U	0.13 U	0.14 U	0.13 U
Atrazine	µg/L	0.94 U	0.92 U	0.98 U	0.92 U
Benzaldehyde	µg/L	0.75 U	0.74 U	0.78 U	0.73 U
Benzo(a)anthracene	µg/L	0.17 U	0.17 U	0.18 U	0.16 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.18 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.16 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.18 U	0.17 U	0.18 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.14 U	0.14 U	0.14 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.49 U	0.48 U	0.51 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.45 U	0.44 U	0.47 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.40 U	0.39 U	0.41 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	2.2 U	2.3 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.66 U	0.65 U	7.9 J	0.64 UJ
Caprolactam	µg/L	0.92 U	0.91 U	0.96 U	0.90 U
Carbazole	µg/L	0.49 U	0.48 U	0.51 U	0.47 U
Chrysene	µg/L	0.18 U	0.18 U	0.19 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.8 U	1.8 U	1.9 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	0.81 U	0.80 U	0.85 U	0.79 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.16 U	0.15 U
Dibenzofuran	µg/L	0.56 U	0.54 U	0.58 U	0.54 U
Diethyl phthalate	µg/L	3.8 U	3.7 U	3.9 U	3.7 U
Dimethyl phthalate	µg/L	0.51 U	0.50 U	0.53 U	0.50 U
Fluoranthene	µg/L	0.16 U	0.16 U	0.16 U	0.15 U
Fluorene	µg/L	0.17 U	0.16 U	0.17 U	0.16 U
Hexachlorobenzene	µg/L	0.16 U	0.16 U	0.17 U	0.15 U
Hexachlorobutadiene	µg/L	0.54 U	0.53 U	0.56 U	0.52 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.8 U	1.7 U
Hexachloroethane	µg/L	0.39 U	0.38 U	0.41 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.14 U	0.13 U
Isophorone	µg/L	0.32 U	0.31 U	0.33 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.25 U	0.25 U	0.26 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.44 U	0.43 U	0.45 U	0.42 U
Naphthalene	µg/L	0.15 J	0.11 U	0.11 U	0.10 U
Nitrobenzene	µg/L	0.51 U	0.50 U	0.53 U	0.49 U
Pentachlorophenol	µg/L	3.1 U	3.0 U	3.2 U	3.0 U
Phenanthrene	µg/L	0.17 U	0.16 U	0.17 U	0.16 U
Phenol	µg/L	0.13 U	0.12 U	0.13 U	0.12 U
Pyrene	µg/L	0.17 U	0.17 U	0.18 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Location ID:		SW-8	SW-9	SW-10	SW-10
Sample Name:		SW-38443-091918-JPF-007	SW-38443-091918-JPF-005	SW-38443-091818-GL-003	SW-38443-091818-GL-004
Sample Date:		09/19/2018	09/19/2018	09/18/2018	09/18/2018
Depth:		18.7 ft BWS	5 ft BWS	5 ft BWS	5 ft BWS
					Duplicate
Parameters	**Unit**				
Herbicides					
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/L	0.055 U	0.057 U	0.057 U	0.054 U
Aroclor-1221 (PCB-1221)	µg/L	0.056 U	0.058 U	0.058 U	0.055 U
Aroclor-1232 (PCB-1232)	µg/L	0.073 U	0.076 U	0.076 U	0.071 U
Aroclor-1242 (PCB-1242)	µg/L	0.075 U	0.078 U	0.078 U	0.073 U
Aroclor-1248 (PCB-1248)	µg/L	0.050 U	0.051 U	0.051 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.040 U	0.041 U	0.041 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.046 U	0.047 U	0.047 U	0.044 U
Pesticides					
4,4'-DDD	µg/L	0.0052 U	0.0054 U	0.0054 U	0.0051 U
4,4'-DDE	µg/L	0.0043 U	0.0044 U	0.0044 U	0.0041 U
4,4'-DDT	µg/L	0.0048 U	0.0049 U	0.0049 U	0.0046 U
Aldrin	µg/L	0.0024 U	0.0024 U	0.0024 U	0.0023 U
alpha-BHC	µg/L	0.0020 U	0.0020 U	0.0020 U	0.0019 U
alpha-Chlordane	µg/L	0.0032 U	0.0033 U	0.0033 U	0.0031 U
beta-BHC	µg/L	0.0046 U	0.0047 U	0.0047 U	0.0044 U
delta-BHC	µg/L	0.0043 U	0.0044 U	0.0044 U	0.0041 U
Dieldrin	µg/L	0.0023 U	0.0023 U	0.0023 U	0.0022 U
Endosulfan I	µg/L	0.0037 U	0.0038 U	0.0038 U	0.0036 U
Endosulfan II	µg/L	0.0023 U	0.0023 U	0.0023 U	0.0022 U
Endosulfan sulfate	µg/L	0.0037 U	0.0038 U	0.0038 U	0.0036 U
Endrin	µg/L	0.0025 U	0.0026 U	0.0026 U	0.0024 U
Endrin aldehyde	µg/L	0.0046 U	0.0047 U	0.0047 U	0.0044 U
Endrin ketone	µg/L	0.0040 U	0.0041 U	0.0041 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0025 U	0.0026 U	0.0026 U	0.0024 U
gamma-Chlordane	µg/L	0.0050 U	0.0051 U	0.0051 U	0.0048 U
Heptachlor	µg/L	0.0033 U	0.0034 U	0.0034 U	0.0032 U
Heptachlor epoxide	µg/L	0.0026 U	0.0027 U	0.0027 U	0.0025 U
Methoxychlor	µg/L	0.0047 U	0.0048 U	0.0048 U	0.0045 U
Toxaphene	µg/L	0.058 U	0.059 U	0.059 U	0.056 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-8**	**SW-9**	**SW-10**	**SW-10**
	Sample Name:	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
	Sample Date:	**09/19/2018**	**09/19/2018**	**09/18/2018**	**09/18/2018**
	Depth:	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
					Duplicate
Parameters	**Unit**				
Metals					
Mercury	ng/L	0.50 U	0.41 U	0.35399999999999998 U	0.35399999999999998 U
Methyl mercury	ng/L	--	--	--	--
Aluminum	µg/L	34 U	34 U	34 U	37 J
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	2.2 J	2.0 J	1.8 J	1.8 J
Arsenic (dissolved)	µg/L	1.8 J	1.9 J	1.9 J	2.0 J
Barium	µg/L	65	81	84	81
Barium (dissolved)	µg/L	62	75	83	82
Beryllium	µg/L	0.31 U	0.67 J	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
Cadmium (dissolved)	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
Calcium	µg/L	47000	37000	38000	37000
Calcium (dissolved)	µg/L	45000	35000	38000	38000
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	80 J	47 U	52 J	52 J
Iron (dissolved)	µg/L	47 U	91 J	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	26000	25000	26000	25000
Magnesium (dissolved)	µg/L	25000	23000	26000	26000
Manganese	µg/L	16	5.5	7.6	7.2
Manganese (dissolved)	µg/L	2.1 U	2.1 U	2.1 U	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U

Table 2A

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SW-8**	**SW-9**	**SW-10**	**SW-10**
	Sample Name:	**SW-38443-091918-JPF-007**	**SW-38443-091918-JPF-005**	**SW-38443-091818-GL-003**	**SW-38443-091818-GL-004**
	Sample Date:	**09/19/2018**	**09/19/2018**	**09/18/2018**	**09/18/2018**
	Depth:	**18.7 ft BWS**	**5 ft BWS**	**5 ft BWS**	**5 ft BWS**
					Duplicate
Parameters	**Unit**				
Metals					
Potassium	µg/L	5700	5600	5800	5600
Potassium (dissolved)	µg/L	5600	5400	5700	5700
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	22000	21000	22000	21000
Sodium (dissolved)	µg/L	21000	20000	22000	22000
Thallium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U
General Chemistry					
Chloride	mg/L	31	30	30	30
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.18	0.17	0.15	0.15
Hardness	mg/L	230	190	200	200
Hardness, carbonate	mg/L	120	92	96	93
Hardness, magnesium	mg/L	110	100	110	100
Sulfate	mg/L	24	22	22	22
Sulfide	mg/L	0.58 U	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	290	240	240	240
Nitrate (as N)	µg/L	340	15 J	17 J	16 J
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U
Fumigant					
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-01**	**SD-02**	**SD-02**	**SD-03**
	Sample Name:	**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**
	Sample Date:	**09/25/2018**	**09/21/2018**	**09/21/2018**	**09/21/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	3.4 U	1.1 U	1.0 U	6.9 U
1,1,2,2-Tetrachloroethane	µg/kg	6.0 U	1.9 U	1.8 U	12 U
1,1,2-Trichloroethane	µg/kg	4.8 U	1.5 U	1.4 U	9.5 U
1,1-Dichloroethane	µg/kg	2.9 U	0.92 U	0.86 U	5.8 U
1,1-Dichloroethene	µg/kg	3.8 U	1.2 U	1.1 U	7.6 U
1,2,4-Trichlorobenzene	µg/kg	2.4 U	0.76 U	0.71 U	4.8 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	15 U	4.8 U	4.4 U	30 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	3.2 U	1.0 U	0.95 U	6.5 U
1,2-Dichlorobenzene	µg/kg	4.7 U	1.5 U	1.4 U	9.3 U
1,2-Dichloroethane	µg/kg	3.2 U	1.0 U	0.95 U	6.5 U
1,2-Dichloropropane	µg/kg	3.6 U	1.1 U	1.1 U	7.1 U
1,3-Dichlorobenzene	µg/kg	3.4 U	1.1 U	1.0 U	6.8 U
1,4-Dichlorobenzene	µg/kg	3.7 U	1.2 U	1.1 U	7.4 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	39 J	4.7 U	4.4 U	65 J
2-Hexanone	µg/kg	17 U	5.4 U	5.0 U	34 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	16 U	4.9 U	4.6 U	31 U
Acetone	µg/kg	88 U	28 U	26 U	180 U
Benzene	µg/kg	3.9 J	0.93 U	0.86 U	5.9 U
Bromodichloromethane	µg/kg	2.9 U	0.90 U	0.84 U	5.7 U
Bromoform	µg/kg	10 U	3.2 U	3.0 U	20 U
Bromomethane (Methyl bromide)	µg/kg	4.2 U	1.3 UJ	1.2 UJ	8.3 UJ
Carbon disulfide	µg/kg	4.9 U	1.5 U	1.4 U	9.8 U
Carbon tetrachloride	µg/kg	14 U	4.3 U	4.0 U	27 U
Chlorobenzene	µg/kg	3.9 U	1.2 U	1.1 U	7.7 U
Chloroethane	µg/kg	5.1 U	1.6 U	1.5 U	10 U
Chloroform (Trichloromethane)	µg/kg	3.3 U	1.0 U	0.97 U	6.6 U
Chloromethane (Methyl chloride)	µg/kg	4.4 U	1.4 U	1.3 U	8.7 U
cis-1,2-Dichloroethene	µg/kg	2.7 U	0.87 U	0.80 U	5.5 U
cis-1,3-Dichloropropene	µg/kg	6.0 U	1.9 U	1.8 U	12 U
Cyclohexane	µg/kg	5.8 U	1.8 U	1.7 U	12 U
Dibromochloromethane	µg/kg	12 U	3.7 U	3.4 U	23 U
Dichlorodifluoromethane (CFC-12)	µg/kg	4.0 U	1.3 U	1.2 U	7.9 U
Ethylbenzene	µg/kg	4.4 U	1.4 U	1.3 U	8.8 U
Isopropyl benzene	µg/kg	3.5 U	1.1 U	1.0 U	7.0 U
Methyl acetate	µg/kg	14 U	4.5 U	4.2 U	29 U
Methyl cyclohexane	µg/kg	5.2 U	1.6 U	1.5 U	10 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	SD-01	SD-02	SD-02	SD-03
	Sample Name:	SED-092518-38443-JPF-021	SED-092118-38443-JPF-006	SED-092118-38443-JPF-007	SED-092118-38443-JPF-005
	Sample Date:	09/25/2018	09/21/2018	09/21/2018	09/21/2018
	Depth:	0-0.5 ft BGS	0-0.5 ft BGS	0-0.5 ft BGS	0-0.5 ft BGS
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	3.4 U	1.1 U	1.0 U	6.9 U
Methylene chloride	µg/kg	50 U	16 U	15 U	100 U
Styrene	µg/kg	4.9 U	1.5 U	1.4 U	9.7 U
Tetrachloroethene	µg/kg	3.1 U	0.97 U	0.90 U	6.1 U
Toluene	µg/kg	5.8 J	1.0 U	0.95 U	6.5 U
trans-1,2-Dichloroethene	µg/kg	2.0 U	0.62 U	0.57 U	3.9 U
trans-1,3-Dichloropropene	µg/kg	4.3 U	1.4 U	1.3 U	8.7 U
Trichloroethene	µg/kg	2.7 U	0.84 U	0.78 U	5.3 U
Trichlorofluoromethane (CFC-11)	µg/kg	4.5 U	1.4 U	1.3 U	9.0 U
Trifluorotrichloroethane (CFC-113)	µg/kg	5.4 U	1.7 U	1.6 U	11 U
Vinyl chloride	µg/kg	3.5 U	1.1 U	1.0 U	7.0 U
Xylenes (total)	µg/kg	6.7 U	2.1 U	2.0 U	13 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	27 U	14 U	14 U	57 U
2,4,5-Trichlorophenol	µg/kg	190 U	94 U	95 U	400 U
2,4,6-Trichlorophenol	µg/kg	170 U	87 U	88 U	370 U
2,4-Dichlorophenol	µg/kg	120 U	60 U	61 U	250 U
2,4-Dimethylphenol	µg/kg	110 U	54 U	55 U	230 U
2,4-Dinitrophenol	µg/kg	390 U	190 U	200 U	810 U
2,4-Dinitrotoluene	µg/kg	170 U	84 U	85 U	360 U
2,6-Dinitrotoluene	µg/kg	150 U	76 U	77 U	320 U
2-Chloronaphthalene	µg/kg	38 U	19 U	19 U	80 U
2-Chlorophenol	µg/kg	27 U	14 U	14 U	57 U
2-Methylnaphthalene	µg/kg	65	15 J	2.7 U	11 U
2-Methylphenol	µg/kg	84 U	42 U	43 U	180 U
2-Nitroaniline	µg/kg	110 U	54 U	55 U	230 U
2-Nitrophenol	µg/kg	35 U	18 U	18 U	74 U
3&4-Methylphenol	µg/kg	79 U	40 U	40 U	170 U
3,3'-Dichlorobenzidine	µg/kg	120 U	59 U	59 U	250 U
3-Nitroaniline	µg/kg	130 U	67 U	67 U	280 U
4,6-Dinitro-2-methylphenol	µg/kg	220 U	110 U	110 U	460 U
4-Bromophenyl phenyl ether	µg/kg	38 U	19 U	19 U	80 U
4-Chloro-3-methylphenol	µg/kg	120 U	61 U	62 U	260 U
4-Chloroaniline	µg/kg	81 U	41 U	41 U	170 U
4-Chlorophenyl phenyl ether	µg/kg	38 U	19 U	19 U	80 U
4-Nitroaniline	µg/kg	160 U	82 U	83 U	340 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-01**	**SD-02**	**SD-02**	**SD-03**
	Sample Name:	**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**
	Sample Date:	**09/25/2018**	**09/21/2018**	**09/21/2018**	**09/21/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	260 U	130 U	130 U	540 U
Acenaphthene	µg/kg	7.8 U	4.8 J	3.9 U	16 U
Acenaphthylene	µg/kg	11 U	5.5 U	5.5 U	23 U
Acetophenone	µg/kg	30 U	15 U	15 U	63 U
Anthracene	µg/kg	24 J	6.5 J	5.7 J	28 J
Atrazine	µg/kg	98 U	49 U	50 U	210 U
Benzaldehyde	µg/kg	62 U	31 U	32 U	130 U
Benzo(a)anthracene	µg/kg	150	41	33	180
Benzo(a)pyrene	µg/kg	160	44	43	230
Benzo(b)fluoranthene	µg/kg	220	79	51	290
Benzo(g,h,i)perylene	µg/kg	95	36	29	140
Benzo(k)fluoranthene	µg/kg	98	14 J	19 J	100
Biphenyl (1,1-Biphenyl)	µg/kg	46 U	23 U	23 U	97 U
bis(2-Chloroethoxy)methane	µg/kg	33 U	16 U	17 U	69 U
bis(2-Chloroethyl)ether	µg/kg	33 U	16 U	17 U	69 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	140 U	120	140	560
Butyl benzylphthalate (BBP)	µg/kg	60 U	30 U	30 U	130 U
Caprolactam	µg/kg	200 U	100 U	100 U	430 U
Carbazole	µg/kg	52 U	26 U	26 U	110 U
Chrysene	µg/kg	160	54	39	220
Di-n-butylphthalate (DBP)	µg/kg	60 U	30 U	30 U	130 U
Di-n-octyl phthalate (DnOP)	µg/kg	76 U	38 U	39 U	160 U
Dibenz(a,h)anthracene	µg/kg	25 J	9.4 U	9.5 U	40 U
Dibenzofuran	µg/kg	35 U	18 U	18 U	74 U
Diethyl phthalate	µg/kg	84 U	42 U	43 U	180 U
Dimethyl phthalate	µg/kg	38 U	19 U	19 U	80 U
Fluoranthene	µg/kg	300	92	67	380
Fluorene	µg/kg	7.4 U	5.1 J	3.8 U	16 U
Hexachlorobenzene	µg/kg	7.7 U	3.9 U	3.9 U	16 U
Hexachlorobutadiene	µg/kg	33 U	16 U	17 U	69 U
Hexachlorocyclopentadiene	µg/kg	170 U	84 U	85 U	360 U
Hexachloroethane	µg/kg	24 U	12 U	12 U	52 U
Indeno(1,2,3-cd)pyrene	µg/kg	79	31	24	140
Isophorone	µg/kg	33 U	16 U	17 U	69 U
N-Nitrosodi-n-propylamine	µg/kg	30 U	15 U	15 U	63 U
N-Nitrosodiphenylamine	µg/kg	33 U	16 U	17 U	69 U
Naphthalene	µg/kg	49	7.1 J	3.3 U	14 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	SD-01	SD-02	SD-02	SD-03
	Sample Name:	SED-092518-38443-JPF-021	SED-092118-38443-JPF-006	SED-092118-38443-JPF-007	SED-092118-38443-JPF-005
	Sample Date:	09/25/2018	09/21/2018	09/21/2018	09/21/2018
	Depth:	0-0.5 ft BGS	0-0.5 ft BGS	0-0.5 ft BGS	0-0.5 ft BGS
				Duplicate	
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	35 U	18 U	18 U	74 U
Pentachlorophenol	µg/kg	160 U	79 U	80 U	330 U
Phenanthrene	µg/kg	110	48	25	120
Phenol	µg/kg	22 U	11 U	11 U	46 U
Pyrene	µg/kg	240	76	58	330
Herbicides					
2,4,5-T	µg/kg	34 U	17 UJ	17 UJ	74 UJ
2,4,5-TP (Silvex)	µg/kg	37 U	19 U	19 U	80 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	130 U	66 U	65 U	280 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	57 U	30 U	30 U	120 U
Aroclor-1221 (PCB-1221)	µg/kg	62 U	33 U	32 U	130 U
Aroclor-1232 (PCB-1232)	µg/kg	60 U	32 U	31 U	130 U
Aroclor-1242 (PCB-1242)	µg/kg	49 U	26 U	26 U	100 U
Aroclor-1248 (PCB-1248)	µg/kg	62 U	33 U	32 U	130 U
Aroclor-1254 (PCB-1254)	µg/kg	60 U	32 U	31 U	130 U
Aroclor-1260 (PCB-1260)	µg/kg	57 U	30 U	30 U	120 U
Pesticides					
4,4'-DDD	µg/kg	3.8 U	2.0 U	2.1 U	8.6 U
4,4'-DDE	µg/kg	3.9 U	2.0 U	2.2 U	8.8 U
4,4'-DDT	µg/kg	2.9 U	1.5 U	1.6 U	6.6 U
Aldrin	µg/kg	2.0 U	1.0 U	1.1 U	4.5 U
alpha-BHC	µg/kg	2.4 U	1.2 U	1.3 U	5.3 U
alpha-Chlordane	µg/kg	3.9 U	2.0 U	2.1 U	8.7 U
beta-BHC	µg/kg	4.5 U	2.3 U	2.5 U	10 U
delta-BHC	µg/kg	240 UJ	120 UJ	120 UJ	970 UJ
Dieldrin	µg/kg	2.9 U	1.5 U	1.6 U	6.4 U
Endosulfan I	µg/kg	3.1 U	1.6 U	1.7 U	7.0 U
Endosulfan II	µg/kg	3.8 U	2.0 U	2.1 U	8.6 U
Endosulfan sulfate	µg/kg	170 U	1.7 U	1.8 U	7.4 U
Endrin	µg/kg	4.9 U	2.6 U	2.7 U	11 U
Endrin aldehyde	µg/kg	170 U	89 U	94 U	760 U
Endrin ketone	µg/kg	2.3 U	1.2 U	1.3 U	5.2 U
gamma-BHC (lindane)	µg/kg	4.6 U	2.4 U	2.6 U	10 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-01**	**SD-02**	**SD-02**	**SD-03**
	Sample Name:	**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**
	Sample Date:	**09/25/2018**	**09/21/2018**	**09/21/2018**	**09/21/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	3.2 U	1.7 U	1.8 U	7.2 U
Heptachlor	µg/kg	4.1 U	2.1 U	2.3 U	9.2 U
Heptachlor epoxide	µg/kg	3.7 U	1.9 U	2.1 U	8.4 U
Methoxychlor	µg/kg	17 U	8.9 UJ	9.4 UJ	38 UJ
Toxaphene	µg/kg	65 U	34 U	36 U	150 U
Metals					
Aluminum	mg/kg	6300	2100	1900	6800
Antimony	mg/kg	0.45 J	0.14 J	0.16 U	0.66 U
Arsenic	mg/kg	8.7	3.1	3.0	11
Barium	mg/kg	140	33	30	290
Beryllium	mg/kg	0.37 J	0.12 J	0.12 J	0.41 J
Cadmium	mg/kg	0.35 J	0.11 J	0.12 J	0.36 J
Calcium	mg/kg	110000	90000	95000	200000
Chromium	mg/kg	16	5.6	6.0	13
Cobalt	mg/kg	5.2	2.4	2.6	5.0
Copper	mg/kg	23	3.8	5.5	23
Iron	mg/kg	13000	5600	5900	14000
Lead	mg/kg	140	8.6	7.5	25
Magnesium	mg/kg	22000	26000	36000	19000
Manganese	mg/kg	380	240	260	340
Mercury	mg/kg	0.051 J	0.023 U	0.023 U	0.10 U
Nickel	mg/kg	14	4.7	6.0	15
Potassium	mg/kg	960	340	280	1200
Selenium	mg/kg	0.89 J	0.14 J	0.16 U	1.8 J
Silver	mg/kg	0.080 J	0.025 U	0.029 U	0.12 U
Sodium	mg/kg	170 J	120 J	130 J	380 J
Thallium	mg/kg	0.24 J	0.077 J	0.073 J	0.32 J
Vanadium	mg/kg	17	7.9	6.8	17
Zinc	mg/kg	76	27	29	86
Methyl mercury	µg/kg	0.65	0.097 U	0.098 U	0.42 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-01**	**SD-02**	**SD-02**	**SD-03**
	Sample Name:	**SED-092518-38443-JPF-021**	**SED-092118-38443-JPF-006**	**SED-092118-38443-JPF-007**	**SED-092118-38443-JPF-005**
	Sample Date:	**09/25/2018**	**09/21/2018**	**09/21/2018**	**09/21/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.0027	0.00096 J	0.00092 J	0.0027 J
Copper	umol/g	0.23	0.069	0.069	0.19
Lead	umol/g	0.16	0.040	0.036	0.11
Mercury	umol/g	0.000020 U	0.000012 U	0.000012 U	0.000031 U
Nickel	umol/g	0.16	0.057	0.054	0.17
Zinc	umol/g	0.85	0.37	0.35	0.95
Sulfide	umol/g	32	4.1 J	4.2 J	22 J
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.044	0.13	0.12	0.064
General Chemistry					
Cyanide (total)	mg/kg	0.46 U	0.25 U	0.24 U	1.1 U
Soot carbon	mg/kg	6600	9200	6000	8400
Total organic carbon (TOC)	mg/kg	28000	3800	3100	56000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	1.9 U	3.5 U	3.7 U	1.2 U
1,1,2,2-Tetrachloroethane	µg/kg	3.4 U	6.1 U	6.5 U	2.1 U
1,1,2-Trichloroethane	µg/kg	2.7 U	4.8 U	5.1 U	1.6 U
1,1-Dichloroethane	µg/kg	1.6 U	3.0 U	3.1 U	1.0 U
1,1-Dichloroethene	µg/kg	2.1 U	3.9 U	4.1 U	1.3 U
1,2,4-Trichlorobenzene	µg/kg	1.4 U	2.4 U	2.6 U	0.82 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	8.5 U	15 U	16 U	5.2 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	1.8 U	3.3 U	3.5 U	1.1 U
1,2-Dichlorobenzene	µg/kg	2.6 U	4.8 U	5.0 U	1.6 U
1,2-Dichloroethane	µg/kg	1.8 U	3.3 U	3.5 U	1.1 U
1,2-Dichloropropane	µg/kg	2.0 U	3.6 U	3.8 U	1.2 U
1,3-Dichlorobenzene	µg/kg	1.9 U	3.5 U	3.7 U	1.2 U
1,4-Dichlorobenzene	µg/kg	2.1 U	3.8 U	4.0 U	1.3 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	8.4 U	21 J	21 J	5.2 J
2-Hexanone	µg/kg	9.7 U	17 U	18 U	5.9 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	8.8 U	16 U	17 U	5.3 U
Acetone	µg/kg	50 U	90 U	95 U	30 U
Benzene	µg/kg	1.7 U	3.0 U	4.3 J	1.0 U
Bromodichloromethane	µg/kg	1.6 U	2.9 U	3.1 U	0.98 U
Bromoform	µg/kg	5.7 U	10 U	11 U	3.4 U
Bromomethane (Methyl bromide)	µg/kg	2.3 UJ	4.2 UJ	4.5 UJ	1.4 UJ
Carbon disulfide	µg/kg	2.8 U	5.0 U	5.2 U	1.7 U
Carbon tetrachloride	µg/kg	7.7 U	14 U	15 U	4.7 U
Chlorobenzene	µg/kg	2.2 U	3.9 U	4.1 U	1.3 U
Chloroethane	µg/kg	2.9 U	5.2 U	5.5 U	1.8 U
Chloroform (Trichloromethane)	µg/kg	1.9 U	3.4 U	3.6 U	1.1 U
Chloromethane (Methyl chloride)	µg/kg	2.5 U	4.5 U	4.7 U	1.5 U
cis-1,2-Dichloroethene	µg/kg	1.5 U	2.8 U	2.9 U	0.94 U
cis-1,3-Dichloropropene	µg/kg	3.4 U	6.1 U	6.5 U	2.1 U
Cyclohexane	µg/kg	3.3 U	5.9 U	6.2 U	2.0 U
Dibromochloromethane	µg/kg	6.6 U	12 U	13 U	4.0 U
Dichlorodifluoromethane (CFC-12)	µg/kg	2.2 U	4.0 U	4.3 U	1.4 U
Ethylbenzene	µg/kg	2.5 U	4.5 U	4.7 U	1.5 U
Isopropyl benzene	µg/kg	2.0 U	3.6 U	3.8 U	1.2 U
Methyl acetate	µg/kg	8.0 U	15 U	15 U	4.9 U
Methyl cyclohexane	µg/kg	2.9 U	5.2 U	5.5 U	1.8 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	1.9 U	3.5 U	3.7 U	1.2 U
Methylene chloride	µg/kg	28 U	51 U	54 U	17 U
Styrene	µg/kg	2.7 U	5.0 U	5.2 U	1.7 U
Tetrachloroethene	µg/kg	1.7 U	3.1 U	3.3 U	1.0 U
Toluene	µg/kg	1.8 U	3.3 U	3.5 U	1.1 U
trans-1,2-Dichloroethene	µg/kg	1.1 U	2.0 U	2.1 U	0.67 U
trans-1,3-Dichloropropene	µg/kg	2.4 U	4.4 U	4.7 U	1.5 U
Trichloroethene	µg/kg	1.5 U	2.7 U	2.9 U	0.91 U
Trichlorofluoromethane (CFC-11)	µg/kg	2.6 U	4.6 U	4.9 U	1.5 U
Trifluorotrichloroethane (CFC-113)	µg/kg	3.0 U	5.5 U	5.8 U	1.8 U
Vinyl chloride	µg/kg	2.0 U	3.6 U	3.8 U	1.2 U
Xylenes (total)	µg/kg	3.8 U	6.8 U	7.1 U	2.3 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	39 U	27 U	27 U	38 U
2,4,5-Trichlorophenol	µg/kg	270 U	190 U	190 U	260 U
2,4,6-Trichlorophenol	µg/kg	250 U	170 U	180 U	240 U
2,4-Dichlorophenol	µg/kg	170 U	120 U	120 U	170 U
2,4-Dimethylphenol	µg/kg	160 U	110 U	110 U	150 U
2,4-Dinitrophenol	µg/kg	550 U	380 U	390 U	540 U
2,4-Dinitrotoluene	µg/kg	240 U	170 U	170 U	240 U
2,6-Dinitrotoluene	µg/kg	220 U	150 U	150 U	210 U
2-Chloronaphthalene	µg/kg	54 U	38 U	38 U	53 U
2-Chlorophenol	µg/kg	39 U	27 U	27 U	38 U
2-Methylnaphthalene	µg/kg	21 J	5.3 U	5.4 U	36 J
2-Methylphenol	µg/kg	120 U	83 U	85 U	120 U
2-Nitroaniline	µg/kg	160 U	110 U	110 U	150 U
2-Nitrophenol	µg/kg	50 U	35 U	36 U	49 U
3&4-Methylphenol	µg/kg	110 U	78 U	80 U	110 U
3,3'-Dichlorobenzidine	µg/kg	170 U	120 U	120 U	160 U
3-Nitroaniline	µg/kg	190 U	130 U	130 U	190 U
4,6-Dinitro-2-methylphenol	µg/kg	310 U	210 U	220 U	300 U
4-Bromophenyl phenyl ether	µg/kg	54 U	38 U	38 U	53 U
4-Chloro-3-methylphenol	µg/kg	170 U	120 U	120 U	170 U
4-Chloroaniline	µg/kg	120 U	81 U	82 U	110 U
4-Chlorophenyl phenyl ether	µg/kg	54 U	38 U	38 U	53 U
4-Nitroaniline	µg/kg	230 U	160 U	160 U	230 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	370 U	250 U	260 U	360 U
Acenaphthene	µg/kg	80	15 J	13 J	160
Acenaphthylene	µg/kg	88	17 J	20 J	120
Acetophenone	µg/kg	43 U	30 U	30 U	42 U
Anthracene	µg/kg	290	49	46	390
Atrazine	µg/kg	140 U	97 U	99 U	140 U
Benzaldehyde	µg/kg	89 U	62 U	63 U	87 U
Benzo(a)anthracene	µg/kg	1200	310	300	1800
Benzo(a)pyrene	µg/kg	1200	360	310	1700
Benzo(b)fluoranthene	µg/kg	1700	490	450	2400
Benzo(g,h,i)perylene	µg/kg	730	220	180	1100
Benzo(k)fluoranthene	µg/kg	470	180	140	950
Biphenyl (1,1-Biphenyl)	µg/kg	66 U	46 U	47 U	65 U
bis(2-Chloroethoxy)methane	µg/kg	47 U	32 U	33 U	46 U
bis(2-Chloroethyl)ether	µg/kg	47 U	32 U	33 U	46 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	255 U	330	140 U	190 U
Butyl benzylphthalate (BBP)	µg/kg	85 U	59 U	60 U	84 U
Caprolactam	µg/kg	290 U	200 U	210 U	290 U
Carbazole	µg/kg	100 J	51 U	52 U	150 J
Chrysene	µg/kg	1300	370	330	1800
Di-n-butylphthalate (DBP)	µg/kg	85 U	59 U	60 U	84 U
Di-n-octyl phthalate (DnOP)	µg/kg	110 U	75 U	77 U	110 U
Dibenz(a,h)anthracene	µg/kg	220	52	42	260
Dibenzofuran	µg/kg	50 J	35 U	36 U	65 J
Diethyl phthalate	µg/kg	120 U	83 U	85 U	120 U
Dimethyl phthalate	µg/kg	54 U	38 U	38 U	53 U
Fluoranthene	µg/kg	2900	610	570	4600
Fluorene	µg/kg	99	19 J	16 J	220
Hexachlorobenzene	µg/kg	11 U	7.7 U	7.8 U	11 U
Hexachlorobutadiene	µg/kg	47 U	32 U	33 U	46 U
Hexachlorocyclopentadiene	µg/kg	240 U	170 U	170 U	240 U
Hexachloroethane	µg/kg	35 U	24 U	25 U	34 U
Indeno(1,2,3-cd)pyrene	µg/kg	650	220	170	910
Isophorone	µg/kg	47 U	32 U	33 U	46 U
N-Nitrosodi-n-propylamine	µg/kg	43 U	30 U	30 U	42 U
N-Nitrosodiphenylamine	µg/kg	47 U	32 U	33 U	46 U
Naphthalene	µg/kg	32 J	6.5 U	6.6 U	48 J

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	50 U	35 U	36 U	49 U
Pentachlorophenol	µg/kg	230 U	160 U	160 U	220 U
Phenanthrene	µg/kg	1100	200	180	1800
Phenol	µg/kg	31 U	21 U	22 U	30 U
Pyrene	µg/kg	2100	540	500	3400
Herbicides					
2,4,5-T	µg/kg	25 UJ	35 UJ	35 UJ	20 UJ
2,4,5-TP (Silvex)	µg/kg	27 UJ	38 U	37 U	22 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	95 UJ	130 U	130 U	76 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	41 U	59 U	60 U	33 U
Aroclor-1221 (PCB-1221)	µg/kg	45 U	64 U	65 U	36 U
Aroclor-1232 (PCB-1232)	µg/kg	43 U	61 U	63 U	35 U
Aroclor-1242 (PCB-1242)	µg/kg	36 U	51 U	52 U	29 U
Aroclor-1248 (PCB-1248)	µg/kg	45 U	64 U	65 U	36 U
Aroclor-1254 (PCB-1254)	µg/kg	43 U	61 U	63 U	75 J
Aroclor-1260 (PCB-1260)	µg/kg	41 U	59 U	60 U	33 U
Pesticides					
4,4'-DDD	µg/kg	2.9 U	3.8 U	4.1 U	2.2 U
4,4'-DDE	µg/kg	2.9 U	3.9 U	4.2 U	2.3 U
4,4'-DDT	µg/kg	2.2 U	2.9 U	3.1 U	1.7 U
Aldrin	µg/kg	1.5 U	2.0 U	2.1 U	1.2 U
alpha-BHC	µg/kg	1.8 U	2.4 U	2.5 U	1.4 U
alpha-Chlordane	µg/kg	2.9 U	3.9 U	4.1 U	5.5 J
beta-BHC	µg/kg	3.4 U	4.5 U	4.8 U	2.6 U
delta-BHC	µg/kg	68 UJ	93 UJ	R	53 UJ
Dieldrin	µg/kg	2.1 U	2.9 U	3.0 U	1.6 U
Endosulfan I	µg/kg	2.3 U	3.1 U	3.3 U	1.8 U
Endosulfan II	µg/kg	2.9 U	3.8 U	4.1 U	2.2 U
Endosulfan sulfate	µg/kg	2.5 U	3.3 U	3.5 U	1.9 U
Endrin	µg/kg	3.7 U	4.9 U	5.2 U	2.8 U
Endrin aldehyde	µg/kg	130 U	170 U	72 U	39 U
Endrin ketone	µg/kg	1.7 U	2.3 U	2.5 U	1.3 U
gamma-BHC (lindane)	µg/kg	3.5 U	4.6 U	4.9 U	2.7 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	2.4 U	3.2 U	3.4 U	4.7 J
Heptachlor	µg/kg	3.1 U	4.1 U	4.4 U	2.4 U
Heptachlor epoxide	µg/kg	2.8 U	3.7 U	4.0 U	2.2 U
Methoxychlor	µg/kg	13 UJ	17 UJ	18 UJ	9.8 UJ
Toxaphene	µg/kg	49 U	65 U	69 U	37 U
Metals					
Aluminum	mg/kg	8200	6800	5400	6300
Antimony	mg/kg	0.39 J	0.29 J	0.31 U	0.76
Arsenic	mg/kg	11	11	8.4	7.9
Barium	mg/kg	130	130	94	78
Beryllium	mg/kg	0.50	0.40 J	0.30 J	0.43
Cadmium	mg/kg	0.49	0.26 J	0.21 J	0.46
Calcium	mg/kg	110000	110000	130000	90000
Chromium	mg/kg	14	11	10	11
Cobalt	mg/kg	6.4	5.3	5.1	5.6
Copper	mg/kg	26	17	12	20
Iron	mg/kg	16000	14000	11000	12000
Lead	mg/kg	65	18	16	52
Magnesium	mg/kg	28000	24000	37000	34000
Manganese	mg/kg	550	630	590	430
Mercury	mg/kg	0.17 J	0.059 J	0.057 J	0.097 J
Nickel	mg/kg	17	14	12	13
Potassium	mg/kg	1400	1300	1100	910
Selenium	mg/kg	0.77 J	0.61 J	0.40 J	0.47 J
Silver	mg/kg	0.086 J	0.049 J	0.054 U	0.061 J
Sodium	mg/kg	160 J	180 J	210 J	170 J
Thallium	mg/kg	0.31	0.27 J	0.21 J	0.22
Vanadium	mg/kg	20	17	14	17
Zinc	mg/kg	110	65	52	71
Methyl mercury	µg/kg	0.14 J	0.26 J	0.26 J	0.31

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-04**	**SD-04**	**SD-05**	**SD-05**
	Sample Name:	**SED-092118-38443-JPF-004**	**SED-092118-38443-JPF-003**	**SED-092018-38443-JPF-001**	**SED-092118-38443-JPF-002**
	Sample Date:	**09/21/2018**	**09/21/2018**	**09/20/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.0043	0.0024 J	0.0020 J	0.0037
Copper	umol/g	0.21	0.21	0.18	0.15
Lead	umol/g	0.32	0.089	0.067	0.22
Mercury	umol/g	0.000018 U	0.000023 U	0.000025 U	0.000013 U
Nickel	umol/g	0.20	0.15	0.13	0.12
Zinc	umol/g	1.4	0.71	0.61	0.68
Sulfide	umol/g	4.5 J	9.7 J	15 J	3.3 J
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.47	0.12	0.067	0.36
General Chemistry					
Cyanide (total)	mg/kg	0.34 U	0.50 U	0.53 U	0.26 U
Soot carbon	mg/kg	12000	14000	9300	6500
Total organic carbon (TOC)	mg/kg	15000	21000	15000	9900

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	4.6 U	2.3 U	1.5 U	2.4 U
1,1,2,2-Tetrachloroethane	µg/kg	8.0 U	3.9 U	2.6 U	4.3 U
1,1,2-Trichloroethane	µg/kg	6.3 U	3.1 U	2.0 U	3.4 U
1,1-Dichloroethane	µg/kg	3.9 U	1.9 U	1.2 U	2.1 U
1,1-Dichloroethene	µg/kg	5.0 U	2.5 U	1.6 U	2.7 U
1,2,4-Trichlorobenzene	µg/kg	3.2 U	1.6 U	1.0 U	1.7 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	20 U	9.9 U	6.5 U	11 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	4.3 U	2.1 U	1.4 U	2.3 U
1,2-Dichlorobenzene	µg/kg	6.2 U	3.1 U	2.0 U	3.3 U
1,2-Dichloroethane	µg/kg	4.3 U	2.1 U	1.4 U	2.3 U
1,2-Dichloropropane	µg/kg	4.7 U	2.3 U	1.5 U	2.5 U
1,3-Dichlorobenzene	µg/kg	4.5 U	2.3 U	1.5 U	2.4 U
1,4-Dichlorobenzene	µg/kg	4.9 U	2.4 U	1.6 U	2.6 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	39 J	15 J	6.4 U	12 J
2-Hexanone	µg/kg	23 U	11 U	7.3 U	12 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	21 U	10 U	6.7 U	11 U
Acetone	µg/kg	120 U	58 U	38 U	63 U
Benzene	µg/kg	3.9 U	1.9 U	1.3 U	2.1 U
Bromodichloromethane	µg/kg	3.8 U	1.9 U	1.2 U	2.0 U
Bromoform	µg/kg	13 U	6.6 U	4.3 U	7.2 U
Bromomethane (Methyl bromide)	µg/kg	5.5 UJ	2.7 U	1.8 U	2.9 U
Carbon disulfide	µg/kg	6.5 U	3.2 U	2.1 U	3.5 U
Carbon tetrachloride	µg/kg	18 U	9.0 U	5.8 U	9.7 U
Chlorobenzene	µg/kg	5.1 U	2.5 U	1.6 U	2.7 U
Chloroethane	µg/kg	6.8 U	3.4 U	2.2 U	3.6 U
Chloroform (Trichloromethane)	µg/kg	4.4 U	2.2 U	1.4 U	2.3 U
Chloromethane (Methyl chloride)	µg/kg	5.8 U	2.9 U	1.9 U	3.1 U
cis-1,2-Dichloroethene	µg/kg	3.6 U	1.8 U	1.2 U	1.9 U
cis-1,3-Dichloropropene	µg/kg	8.0 U	4.0 U	2.6 U	4.3 U
Cyclohexane	µg/kg	7.7 U	3.8 U	2.5 U	4.1 U
Dibromochloromethane	µg/kg	16 U	7.7 U	5.0 U	8.3 U
Dichlorodifluoromethane (CFC-12)	µg/kg	5.3 U	2.6 U	1.7 U	2.8 U
Ethylbenzene	µg/kg	5.8 U	2.9 U	1.9 U	3.1 U
Isopropyl benzene	µg/kg	4.6 U	2.3 U	1.5 U	2.5 U
Methyl acetate	µg/kg	19 U	9.4 U	6.1 U	10 U
Methyl cyclohexane	µg/kg	6.8 U	3.4 U	2.2 U	3.7 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	4.6 U	2.3 U	1.5 U	2.4 U
Methylene chloride	µg/kg	67 U	33 U	22 U	36 U
Styrene	µg/kg	6.5 U	3.2 U	2.1 U	3.5 U
Tetrachloroethene	µg/kg	4.1 U	2.0 U	1.3 U	2.2 U
Toluene	µg/kg	4.3 U	2.1 U	1.4 U	2.3 U
trans-1,2-Dichloroethene	µg/kg	2.6 U	1.3 U	0.83 U	1.4 U
trans-1,3-Dichloropropene	µg/kg	5.8 U	2.9 U	4.7 J	3.1 U
Trichloroethene	µg/kg	3.5 U	1.7 U	1.1 U	1.9 U
Trichlorofluoromethane (CFC-11)	µg/kg	6.0 U	3.0 U	1.9 U	3.2 U
Trifluorotrichloroethane (CFC-113)	µg/kg	7.1 U	3.5 U	2.3 U	3.8 U
Vinyl chloride	µg/kg	4.7 U	2.3 U	1.5 U	2.5 U
Xylenes (total)	µg/kg	8.8 U	4.4 U	2.8 U	4.7 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	37 U	19 U	19 U	19 U
2,4,5-Trichlorophenol	µg/kg	260 U	130 U	130 U	130 U
2,4,6-Trichlorophenol	µg/kg	240 U	120 U	120 U	120 U
2,4-Dichlorophenol	µg/kg	160 U	85 U	84 U	85 U
2,4-Dimethylphenol	µg/kg	150 U	77 U	76 U	77 U
2,4-Dinitrophenol	µg/kg	530 U	270 U	270 U	270 U
2,4-Dinitrotoluene	µg/kg	230 U	120 U	120 U	120 U
2,6-Dinitrotoluene	µg/kg	210 U	110 U	110 U	110 U
2-Chloronaphthalene	µg/kg	52 U	27 U	27 U	27 U
2-Chlorophenol	µg/kg	37 U	19 U	19 U	19 U
2-Methylnaphthalene	µg/kg	7.3 U	8.3 J	3.7 U	7.4 J
2-Methylphenol	µg/kg	120 U	60 U	59 U	60 U
2-Nitroaniline	µg/kg	150 U	77 U	76 U	77 U
2-Nitrophenol	µg/kg	48 U	25 U	25 U	25 U
3&4-Methylphenol	µg/kg	110 U	56 U	55 U	56 U
3,3'-Dichlorobenzidine	µg/kg	160 U	83 U	82 U	83 U
3-Nitroaniline	µg/kg	180 U	95 U	94 U	95 U
4,6-Dinitro-2-methylphenol	µg/kg	300 U	150 U	150 U	150 U
4-Bromophenyl phenyl ether	µg/kg	52 U	27 U	27 U	27 U
4-Chloro-3-methylphenol	µg/kg	170 U	87 U	86 U	87 U
4-Chloroaniline	µg/kg	110 U	58 U	57 U	58 U
4-Chlorophenyl phenyl ether	µg/kg	52 U	27 U	27 U	27 U
4-Nitroaniline	µg/kg	220 U	120 U	110 U	120 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	350 U	180 U	180 U	180 U
Acenaphthene	µg/kg	11 U	9.7 J	5.5 U	14 J
Acenaphthylene	µg/kg	15 U	11 J	7.7 U	14 J
Acetophenone	µg/kg	41 U	21 U	21 U	21 U
Anthracene	µg/kg	13 J	22 J	7.0 J	31
Atrazine	µg/kg	130 U	70 U	69 U	69 U
Benzaldehyde	µg/kg	86 U	45 U	44 U	44 U
Benzo(a)anthracene	µg/kg	77	110	52	170
Benzo(a)pyrene	µg/kg	97	140	68	200
Benzo(b)fluoranthene	µg/kg	130	160	99	290
Benzo(g,h,i)perylene	µg/kg	83	85	42	80
Benzo(k)fluoranthene	µg/kg	48 J	69	36	98
Biphenyl (1,1-Biphenyl)	µg/kg	63 U	33 U	32 U	33 U
bis(2-Chloroethoxy)methane	µg/kg	45 U	23 U	23 U	23 U
bis(2-Chloroethyl)ether	µg/kg	45 U	23 U	23 U	23 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	330	98 U	97 U	98 U
Butyl benzylphthalate (BBP)	µg/kg	82 U	42 U	42 U	42 U
Caprolactam	µg/kg	280 U	140 U	140 U	140 U
Carbazole	µg/kg	71 U	37 U	36 U	37 U
Chrysene	µg/kg	94	130	68	190
Di-n-butylphthalate (DBP)	µg/kg	82 U	42 U	42 U	42 U
Di-n-octyl phthalate (DnOP)	µg/kg	100 U	54 U	54 U	54 U
Dibenz(a,h)anthracene	µg/kg	26 U	20 J	13 U	24 J
Dibenzofuran	µg/kg	48 U	25 U	25 U	25 U
Diethyl phthalate	µg/kg	120 U	60 U	59 U	60 U
Dimethyl phthalate	µg/kg	52 U	27 U	27 U	27 U
Fluoranthene	µg/kg	160	280	110	380
Fluorene	µg/kg	10 U	11 J	5.2 U	15 J
Hexachlorobenzene	µg/kg	11 U	5.5 U	5.4 U	5.5 U
Hexachlorobutadiene	µg/kg	45 U	23 U	23 U	23 U
Hexachlorocyclopentadiene	µg/kg	R	120 U	120 U	120 U
Hexachloroethane	µg/kg	33 U	17 U	17 U	17 U
Indeno(1,2,3-cd)pyrene	µg/kg	66	76	32	76
Isophorone	µg/kg	45 U	23 U	23 U	23 U
N-Nitrosodi-n-propylamine	µg/kg	41 U	21 U	21 U	21 U
N-Nitrosodiphenylamine	µg/kg	45 U	23 U	23 U	23 U
Naphthalene	µg/kg	9.0 U	10 J	4.6 U	8.3 J

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	48 U	25 U	25 U	25 U
Pentachlorophenol	µg/kg	220 U	110 U	110 U	110 U
Phenanthrene	µg/kg	53 J	110	38	110
Phenol	µg/kg	30 U	15 U	15 U	15 U
Pyrene	µg/kg	150	210	96	320
Herbicides					
2,4,5-T	µg/kg	47 UJ	24 U	25 U	24 U
2,4,5-TP (Silvex)	µg/kg	50 U	26 U	26 U	26 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	180 U	92 U	93 U	92 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	79 U	43 U	41 U	42 U
Aroclor-1221 (PCB-1221)	µg/kg	86 U	46 U	45 U	46 U
Aroclor-1232 (PCB-1232)	µg/kg	83 U	44 U	43 U	44 U
Aroclor-1242 (PCB-1242)	µg/kg	68 U	88 J	43 J	37 U
Aroclor-1248 (PCB-1248)	µg/kg	86 U	46 U	45 U	46 U
Aroclor-1254 (PCB-1254)	µg/kg	83 U	69 J	43 U	44 U
Aroclor-1260 (PCB-1260)	µg/kg	79 U	43 U	41 U	42 U
Pesticides					
4,4'-DDD	µg/kg	27 U	2.9 U	2.8 U	2.9 U
4,4'-DDE	µg/kg	28 U	2.9 U	2.8 U	2.9 U
4,4'-DDT	µg/kg	21 U	2.2 U	2.1 U	2.2 U
Aldrin	µg/kg	14 U	1.5 U	1.4 U	1.5 U
alpha-BHC	µg/kg	17 U	1.8 U	1.7 U	1.8 U
alpha-Chlordane	µg/kg	28 U	2.9 U	2.8 U	2.9 U
beta-BHC	µg/kg	32 U	3.3 U	3.2 U	3.3 U
delta-BHC	µg/kg	320 UJ	160 UJ	160 UJ	160 UJ
Dieldrin	µg/kg	20 U	2.1 U	2.1 U	2.1 U
Endosulfan I	µg/kg	22 U	2.3 U	2.2 U	2.3 U
Endosulfan II	µg/kg	27 U	2.9 U	2.8 U	2.9 U
Endosulfan sulfate	µg/kg	23 U	120 U	120 U	120 U
Endrin	µg/kg	35 U	3.7 U	3.5 U	3.7 U
Endrin aldehyde	µg/kg	240 U	130 U	120 U	130 U
Endrin ketone	µg/kg	16 U	1.7 U	1.7 U	1.7 U
gamma-BHC (lindane)	µg/kg	33 U	3.5 U	3.3 U	3.4 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	23 U	3.5 J	2.3 U	2.4 U
Heptachlor	µg/kg	29 U	3.1 U	2.9 U	3.0 U
Heptachlor epoxide	µg/kg	26 U	2.8 U	2.7 U	2.8 U
Methoxychlor	µg/kg	120 UJ	13 U	12 U	13 U
Toxaphene	µg/kg	460 U	48 U	47 U	48 U
Metals					
Aluminum	mg/kg	11000 J	8600	2900	8800
Antimony	mg/kg	0.63 J	0.72	0.24 U	0.27 J
Arsenic	mg/kg	20	13	7.6	12
Barium	mg/kg	190	140	96	120
Beryllium	mg/kg	0.66 J	0.59	0.22 J	0.70
Cadmium	mg/kg	0.52 J	0.86	0.13 J	0.43
Calcium	mg/kg	110000	91000	130000	72000
Chromium	mg/kg	19	20	9.5	17
Cobalt	mg/kg	7.8	8.3	3.5	8.8
Copper	mg/kg	29	39	7.6	28
Iron	mg/kg	21000	19000	10000	20000
Lead	mg/kg	41	94	7.2	38
Magnesium	mg/kg	20000	24000	29000	25000
Manganese	mg/kg	640	520	430	620
Mercury	mg/kg	0.089 J	0.10 J	0.034 U	0.072 J
Nickel	mg/kg	21	20	8.1	20
Potassium	mg/kg	1900	1400	620	1200
Selenium	mg/kg	1.2 J	1.1 J	0.31 J	0.73 J
Silver	mg/kg	0.12 J	0.10 J	0.35 J	0.079 J
Sodium	mg/kg	300 J	150 J	140 J	130 J
Thallium	mg/kg	0.47 J	0.34	0.15 J	0.33 J
Vanadium	mg/kg	25	22	9.0	24
Zinc	mg/kg	150	390	28	96
Methyl mercury	µg/kg	0.27 J	0.24	0.14 U	0.14 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-06**	**SD-06**	**SD-07**	**SD-08**
	Sample Name:	**SED-092118-38443-JPF-008**	**SED-092518-38443-JPF-018**	**SED-092518-38443-JPF-017**	**SED-092518-38443-JPF-014**
	Sample Date:	**09/21/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.0050	0.0067	0.0011 J	0.0032
Copper	umol/g	0.34 J	0.46	0.15	0.34
Lead	umol/g	0.21	0.35	0.030	0.16
Mercury	umol/g	0.000030 U	0.000016 U	0.000018 U	0.000017 U
Nickel	umol/g	0.25	0.25	0.11	0.23
Zinc	umol/g	2.0 J	4.2	0.39	0.95
Sulfide	umol/g	23 J	31	11	22
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.13	0.17	0.059	0.077
General Chemistry					
Cyanide (total)	mg/kg	1.4 J	0.32 U	0.33 U	0.37 U
Soot carbon	mg/kg	7200	11000	11000	10000
Total organic carbon (TOC)	mg/kg	26000	16000	16000	15000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	4.1 U	5.9 U	2.5 U	3.4 U
1,1,2,2-Tetrachloroethane	µg/kg	7.2 U	10 U	4.4 U	5.9 U
1,1,2-Trichloroethane	µg/kg	5.7 U	8.1 U	3.4 U	4.7 U
1,1-Dichloroethane	µg/kg	3.5 U	5.0 U	2.1 U	2.9 U
1,1-Dichloroethene	µg/kg	4.5 U	6.5 U	2.7 U	3.7 U
1,2,4-Trichlorobenzene	µg/kg	2.9 U	4.1 U	1.7 U	2.4 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	18 U	26 U	11 U	15 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	3.9 U	5.5 U	2.3 U	3.2 U
1,2-Dichlorobenzene	µg/kg	5.6 U	8.0 U	3.4 U	4.6 U
1,2-Dichloroethane	µg/kg	3.9 U	5.5 U	2.3 U	3.2 U
1,2-Dichloropropane	µg/kg	4.3 U	6.1 U	2.6 U	3.5 U
1,3-Dichlorobenzene	µg/kg	4.1 U	5.8 U	2.5 U	3.4 U
1,4-Dichlorobenzene	µg/kg	4.4 U	6.3 U	2.7 U	3.6 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	18 J	42 J	11 U	20 J
2-Hexanone	µg/kg	21 U	29 U	12 U	17 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	19 U	27 U	11 U	15 U
Acetone	µg/kg	110 U	150 U	64 U	87 U
Benzene	µg/kg	3.5 U	5.0 U	2.1 U	2.9 U
Bromodichloromethane	µg/kg	3.4 U	4.9 U	2.1 U	2.8 U
Bromoform	µg/kg	12 U	17 U	7.3 U	9.9 U
Bromomethane (Methyl bromide)	µg/kg	5.0 U	7.1 U	3.0 U	4.1 U
Carbon disulfide	µg/kg	5.8 U	8.3 U	3.5 U	4.8 U
Carbon tetrachloride	µg/kg	16 U	23 U	9.9 U	13 U
Chlorobenzene	µg/kg	4.6 U	6.6 U	2.8 U	3.8 U
Chloroethane	µg/kg	6.1 U	8.7 U	3.7 U	5.0 U
Chloroform (Trichloromethane)	µg/kg	4.0 U	5.6 U	2.4 U	3.3 U
Chloromethane (Methyl chloride)	µg/kg	5.2 U	7.5 U	3.2 U	4.3 U
cis-1,2-Dichloroethene	µg/kg	3.3 U	4.7 U	2.0 U	2.7 U
cis-1,3-Dichloropropene	µg/kg	7.2 U	10 U	4.4 U	5.9 U
Cyclohexane	µg/kg	6.9 U	9.8 U	4.2 U	5.7 U
Dibromochloromethane	µg/kg	14 U	20 U	8.5 U	11 U
Dichlorodifluoromethane (CFC-12)	µg/kg	4.7 U	6.7 U	2.9 U	3.9 U
Ethylbenzene	µg/kg	5.3 U	7.5 U	3.2 U	4.3 U
Isopropyl benzene	µg/kg	4.2 U	5.9 U	2.5 U	3.4 U
Methyl acetate	µg/kg	17 U	24 U	10 U	14 U
Methyl cyclohexane	µg/kg	6.2 U	8.8 U	3.7 U	5.1 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	4.1 U	5.9 U	2.5 U	3.4 U
Methylene chloride	µg/kg	60 U	86 U	36 U	50 U
Styrene	µg/kg	5.8 U	8.3 U	3.5 U	4.8 U
Tetrachloroethene	µg/kg	3.7 U	5.2 U	2.2 U	3.0 U
Toluene	µg/kg	3.9 U	5.5 U	2.3 U	3.2 U
trans-1,2-Dichloroethene	µg/kg	2.3 U	3.3 U	1.4 U	1.9 U
trans-1,3-Dichloropropene	µg/kg	5.2 U	7.4 U	3.1 U	4.3 U
Trichloroethene	µg/kg	3.2 U	4.5 U	1.9 U	2.6 U
Trichlorofluoromethane (CFC-11)	µg/kg	5.4 U	7.7 U	3.3 U	4.4 U
Trifluorotrichloroethane (CFC-113)	µg/kg	6.4 U	9.2 U	3.9 U	5.3 U
Vinyl chloride	µg/kg	4.2 U	6.0 U	2.5 U	3.5 U
Xylenes (total)	µg/kg	8.0 U	11 U	4.8 U	6.5 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	31 U	40 U	23 U	28 U
2,4,5-Trichlorophenol	µg/kg	220 U	280 U	160 U	190 U
2,4,6-Trichlorophenol	µg/kg	200 U	260 U	150 U	180 U
2,4-Dichlorophenol	µg/kg	140 U	180 U	100 U	120 U
2,4-Dimethylphenol	µg/kg	120 U	160 U	91 U	110 U
2,4-Dinitrophenol	µg/kg	440 U	570 U	320 U	400 U
2,4-Dinitrotoluene	µg/kg	190 U	250 U	140 U	180 U
2,6-Dinitrotoluene	µg/kg	170 U	230 U	130 U	160 U
2-Chloronaphthalene	µg/kg	44 U	56 U	32 U	40 U
2-Chlorophenol	µg/kg	31 U	40 U	23 U	28 U
2-Methylnaphthalene	µg/kg	6.1 U	7.9 U	4.5 U	5.5 U
2-Methylphenol	µg/kg	97 U	130 U	71 U	88 U
2-Nitroaniline	µg/kg	120 U	160 U	91 U	110 U
2-Nitrophenol	µg/kg	41 U	52 U	30 U	37 U
3&4-Methylphenol	µg/kg	91 U	120 U	66 U	82 U
3,3'-Dichlorobenzidine	µg/kg	130 U	170 U	98 U	120 U
3-Nitroaniline	µg/kg	150 U	200 U	110 U	140 U
4,6-Dinitro-2-methylphenol	µg/kg	250 U	320 U	180 U	230 U
4-Bromophenyl phenyl ether	µg/kg	44 U	56 U	32 U	40 U
4-Chloro-3-methylphenol	µg/kg	140 U	180 U	100 U	130 U
4-Chloroaniline	µg/kg	94 U	120 U	69 U	85 U
4-Chlorophenyl phenyl ether	µg/kg	44 U	56 U	32 U	40 U
4-Nitroaniline	µg/kg	190 U	240 U	140 U	170 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	290 U	380 U	210 U	270 U
Acenaphthene	µg/kg	14 J	12 U	6.5 U	8.1 U
Acenaphthylene	µg/kg	13 U	16 U	9.2 U	11 U
Acetophenone	µg/kg	34 U	44 U	25 U	31 U
Anthracene	µg/kg	35 J	15 J	5.5 U	12 J
Atrazine	µg/kg	110 U	150 U	82 U	100 U
Benzaldehyde	µg/kg	72 U	93 U	52 U	65 U
Benzo(a)anthracene	µg/kg	180	79	31 J	76
Benzo(a)pyrene	µg/kg	220	110	38	99
Benzo(b)fluoranthene	µg/kg	310	170	50	150
Benzo(g,h,i)perylene	µg/kg	100	76	20 J	67
Benzo(k)fluoranthene	µg/kg	120	66	23 J	50
Biphenyl (1,1-Biphenyl)	µg/kg	53 U	69 U	39 U	48 U
bis(2-Chloroethoxy)methane	µg/kg	37 U	48 U	27 U	34 U
bis(2-Chloroethyl)ether	µg/kg	37 U	48 U	27 U	34 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	160 U	220 J	120 U	140 U
Butyl benzylphthalate (BBP)	µg/kg	69 U	89 U	50 U	62 U
Caprolactam	µg/kg	230 U	300 U	170 U	210 U
Carbazole	µg/kg	59 U	77 U	43 U	54 U
Chrysene	µg/kg	210	100	38	93
Di-n-butylphthalate (DBP)	µg/kg	69 U	89 U	50 U	62 U
Di-n-octyl phthalate (DnOP)	µg/kg	87 U	110 U	64 U	79 U
Dibenz(a,h)anthracene	µg/kg	29 J	28 U	16 U	20 U
Dibenzofuran	µg/kg	41 U	52 U	30 U	37 U
Diethyl phthalate	µg/kg	97 U	130 U	71 U	88 U
Dimethyl phthalate	µg/kg	44 U	56 U	32 U	40 U
Fluoranthene	µg/kg	420	210	78	170
Fluorene	µg/kg	15 J	11 U	6.3 U	7.7 U
Hexachlorobenzene	µg/kg	8.9 U	11 U	6.5 U	8.0 U
Hexachlorobutadiene	µg/kg	37 U	48 U	27 U	34 U
Hexachlorocyclopentadiene	µg/kg	190 U	R	140 U	180 U
Hexachloroethane	µg/kg	28 U	36 U	21 U	25 U
Indeno(1,2,3-cd)pyrene	µg/kg	95	73	20 J	59
Isophorone	µg/kg	37 U	48 U	27 U	34 U
N-Nitrosodi-n-propylamine	µg/kg	34 U	44 U	25 U	31 U
N-Nitrosodiphenylamine	µg/kg	37 U	48 U	27 U	34 U
Naphthalene	µg/kg	12 J	9.7 U	5.5 U	6.8 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	41 U	52 U	30 U	37 U
Pentachlorophenol	µg/kg	180 U	230 U	130 U	160 U
Phenanthrene	µg/kg	160	71	27 J	57
Phenol	µg/kg	25 U	32 U	18 U	23 U
Pyrene	µg/kg	330	170	57	130
Herbicides					
2,4,5-T	µg/kg	40 U	51 U	29 U	36 U
2,4,5-TP (Silvex)	µg/kg	43 U	55 U	32 U	39 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	150 U	190 U	110 U	140 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	69 U	88 U	50 U	63 U
Aroclor-1221 (PCB-1221)	µg/kg	76 U	96 U	55 U	68 U
Aroclor-1232 (PCB-1232)	µg/kg	72 U	92 U	52 U	65 U
Aroclor-1242 (PCB-1242)	µg/kg	60 NJ	76 U	83 J	61 J
Aroclor-1248 (PCB-1248)	µg/kg	76 U	96 U	55 U	68 U
Aroclor-1254 (PCB-1254)	µg/kg	72 U	92 U	52 U	65 U
Aroclor-1260 (PCB-1260)	µg/kg	69 U	88 U	50 U	63 U
Pesticides					
4,4'-DDD	µg/kg	4.7 U	5.9 U	3.4 U	4.2 U
4,4'-DDE	µg/kg	4.8 U	6.1 U	3.4 U	4.3 U
4,4'-DDT	µg/kg	3.6 U	230 U	2.6 U	3.2 U
Aldrin	µg/kg	2.4 U	3.1 U	1.7 U	2.2 U
alpha-BHC	µg/kg	2.9 U	3.7 U	2.1 U	2.6 U
alpha-Chlordane	µg/kg	4.7 U	6.0 U	3.4 U	4.3 U
beta-BHC	µg/kg	5.4 U	6.9 U	3.9 U	4.9 U
delta-BHC	µg/kg	270 UJ	340 UJ	200 UJ	250 UJ
Dieldrin	µg/kg	3.5 U	4.4 U	2.5 U	3.1 U
Endosulfan I	µg/kg	3.8 U	4.8 U	2.7 U	3.4 U
Endosulfan II	µg/kg	4.7 U	5.9 U	3.4 U	4.2 U
Endosulfan sulfate	µg/kg	200 U	260 U	150 U	180 U
Endrin	µg/kg	6.0 U	7.6 U	4.3 U	5.4 U
Endrin aldehyde	µg/kg	210 U	260 U	150 U	190 U
Endrin ketone	µg/kg	2.8 U	180 U	2.0 U	2.5 U
gamma-BHC (lindane)	µg/kg	5.6 U	7.2 U	4.1 U	5.1 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	3.9 U	4.9 U	2.8 U	3.5 U
Heptachlor	µg/kg	5.0 U	6.3 U	3.6 U	4.5 U
Heptachlor epoxide	µg/kg	4.5 U	5.8 U	3.3 U	4.1 U
Methoxychlor	µg/kg	21 U	1300 U	15 U	19 U
Toxaphene	µg/kg	79 U	100 U	57 U	71 U
Metals					
Aluminum	mg/kg	8200	12000 J	10000	8300
Antimony	mg/kg	0.42 J	0.63 J	0.53 J	0.36 J
Arsenic	mg/kg	14	24	23	14
Barium	mg/kg	170	230	150	140
Beryllium	mg/kg	0.55	0.89	0.61	0.46
Cadmium	mg/kg	0.45 J	0.61 J	0.54	0.38 J
Calcium	mg/kg	90000	120000	120000	110000
Chromium	mg/kg	15	20	19	13
Cobalt	mg/kg	6.7	10	11	7.2
Copper	mg/kg	29	34	37	24
Iron	mg/kg	18000	25000	24000	18000
Lead	mg/kg	36	40	37	21
Magnesium	mg/kg	20000	23000	32000	26000
Manganese	mg/kg	660	730	1000	790
Mercury	mg/kg	0.081 J	0.063 U	0.10 J	0.056 U
Nickel	mg/kg	18	25	26	18
Potassium	mg/kg	1400	2000 J	1900	1600
Selenium	mg/kg	0.95 J	1.6 J	1.0 J	0.76 J
Silver	mg/kg	0.11 J	0.12 J	0.11 J	0.071 J
Sodium	mg/kg	170 J	250 J	180 J	170 J
Thallium	mg/kg	0.35 J	0.55 J	0.50	0.39 J
Vanadium	mg/kg	21	29	26	21
Zinc	mg/kg	100	160	130	89
Methyl mercury	µg/kg	0.21 U	0.33 J	0.16 U	0.20 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-08**	**SD-10**	**SD-11**	**SD-11**
	Sample Name:	**SED-092518-38443-JPF-015**	**SED-092518-38443-JPF-016**	**SED-092518-38443-JPF-020**	**SED-092518-38443-JPF-019**
	Sample Date:	**09/25/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.0038	0.0049	0.0047	0.0034
Copper	umol/g	0.45	0.42	0.43	0.38
Lead	umol/g	0.17	0.17	0.16	0.11
Mercury	umol/g	0.000026 U	0.000034 U	0.000019 U	0.000024 U
Nickel	umol/g	0.25	0.33	0.33	0.26
Zinc	umol/g	1.3	2.7 J	1.4	1.1
Sulfide	umol/g	28	160	35	40
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.078	0.022	0.067	0.047
General Chemistry					
Cyanide (total)	mg/kg	0.52 U	2.4	0.49 U	0.47 U
Soot carbon	mg/kg	12000	6700	20000	12000
Total organic carbon (TOC)	mg/kg	29000	34000	15000	24000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	3.0 U	1.9 U	4.3 U	4.4 U
1,1,2,2-Tetrachloroethane	µg/kg	5.3 U	3.4 U	7.6 U	7.7 U
1,1,2-Trichloroethane	µg/kg	4.2 U	2.7 U	6.0 U	6.1 U
1,1-Dichloroethane	µg/kg	2.6 U	1.6 U	3.7 U	3.7 U
1,1-Dichloroethene	µg/kg	3.3 U	2.1 U	4.8 U	4.9 U
1,2,4-Trichlorobenzene	µg/kg	2.1 U	1.3 U	3.0 U	3.1 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	13 U	8.5 U	19 U	19 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	2.8 U	1.8 U	4.1 U	4.2 U
1,2-Dichlorobenzene	µg/kg	4.1 U	2.6 U	5.9 U	6.0 U
1,2-Dichloroethane	µg/kg	2.9 U	1.8 U	4.1 U	4.2 U
1,2-Dichloropropane	µg/kg	3.1 U	2.0 U	4.5 U	4.6 U
1,3-Dichlorobenzene	µg/kg	3.0 U	1.9 U	4.3 U	4.4 U
1,4-Dichlorobenzene	µg/kg	3.3 U	2.1 U	4.7 U	4.8 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	17 J	21 J	22 J	31 J
2-Hexanone	µg/kg	15 U	9.6 U	22 U	22 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	14 U	8.8 U	20 U	20 U
Acetone	µg/kg	78 U	65	110 U	110 U
Benzene	µg/kg	2.6 U	1.6 U	3.7 U	3.8 U
Bromodichloromethane	µg/kg	2.5 U	1.6 U	3.6 U	3.7 U
Bromoform	µg/kg	8.9 U	5.7 U	13 U	13 U
Bromomethane (Methyl bromide)	µg/kg	3.7 U	2.3 U	5.2 U	5.3 U
Carbon disulfide	µg/kg	4.3 U	2.7 U	6.2 U	6.3 U
Carbon tetrachloride	µg/kg	12 U	7.7 U	17 U	18 U
Chlorobenzene	µg/kg	3.4 U	2.2 U	4.8 U	4.9 U
Chloroethane	µg/kg	4.5 U	2.9 U	6.5 U	6.6 U
Chloroform (Trichloromethane)	µg/kg	2.9 U	1.9 U	4.2 U	4.3 U
Chloromethane (Methyl chloride)	µg/kg	3.9 U	2.5 U	5.5 U	5.6 U
cis-1,2-Dichloroethene	µg/kg	2.4 U	1.5 U	3.4 U	3.5 U
cis-1,3-Dichloropropene	µg/kg	5.3 U	3.4 U	7.6 U	7.8 U
Cyclohexane	µg/kg	5.1 U	3.2 U	7.3 U	7.4 U
Dibromochloromethane	µg/kg	10 U	6.6 U	15 U	15 U
Dichlorodifluoromethane (CFC-12)	µg/kg	3.5 U	2.2 U	5.0 U	5.1 U
Ethylbenzene	µg/kg	3.9 U	2.5 U	5.5 U	5.7 U
Isopropyl benzene	µg/kg	3.1 U	2.0 U	4.4 U	4.5 U
Methyl acetate	µg/kg	13 U	8.0 U	18 U	18 U
Methyl cyclohexane	µg/kg	4.5 U	2.9 U	6.5 U	6.6 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	3.0 U	1.9 U	4.3 U	4.4 U
Methylene chloride	µg/kg	44 U	28 U	63 U	65 U
Styrene	µg/kg	4.3 U	2.7 U	6.1 U	6.3 U
Tetrachloroethene	µg/kg	2.7 U	1.7 U	3.9 U	3.9 U
Toluene	µg/kg	2.9 U	1.8 U	4.1 U	4.2 U
trans-1,2-Dichloroethene	µg/kg	1.7 U	1.1 U	2.5 U	2.5 U
trans-1,3-Dichloropropene	µg/kg	3.8 U	2.4 U	5.5 U	5.6 U
Trichloroethene	µg/kg	2.3 U	1.5 U	3.3 U	3.4 U
Trichlorofluoromethane (CFC-11)	µg/kg	4.0 U	2.5 U	5.7 U	5.8 U
Trifluorotrichloroethane (CFC-113)	µg/kg	4.7 U	3.0 U	6.8 U	6.9 U
Vinyl chloride	µg/kg	3.1 U	2.0 U	4.4 U	4.5 U
Xylenes (total)	µg/kg	5.9 U	3.7 U	8.4 U	8.6 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	29 U	16 U	32 U	33 U
2,4,5-Trichlorophenol	µg/kg	200 U	110 U	220 U	230 U
2,4,6-Trichlorophenol	µg/kg	180 U	100 U	200 U	210 U
2,4-Dichlorophenol	µg/kg	130 U	69 U	140 U	140 U
2,4-Dimethylphenol	µg/kg	110 U	63 U	130 U	130 U
2,4-Dinitrophenol	µg/kg	400 U	220 U	450 U	460 U
2,4-Dinitrotoluene	µg/kg	180 U	97 U	200 U	200 U
2,6-Dinitrotoluene	µg/kg	160 U	88 U	180 U	180 U
2-Chloronaphthalene	µg/kg	40 U	22 U	44 U	46 U
2-Chlorophenol	µg/kg	29 U	16 U	32 U	33 U
2-Methylnaphthalene	µg/kg	5.6 U	22 J	6.2 U	6.4 U
2-Methylphenol	µg/kg	88 U	49 U	98 U	100 U
2-Nitroaniline	µg/kg	110 U	63 U	130 U	130 U
2-Nitrophenol	µg/kg	37 U	20 U	41 U	42 U
3&4-Methylphenol	µg/kg	83 U	46 U	92 U	95 U
3,3'-Dichlorobenzidine	µg/kg	120 U	68 U	140 U	140 U
3-Nitroaniline	µg/kg	140 U	77 U	160 U	160 U
4,6-Dinitro-2-methylphenol	µg/kg	230 U	130 U	250 U	260 U
4-Bromophenyl phenyl ether	µg/kg	40 U	22 U	44 U	46 U
4-Chloro-3-methylphenol	µg/kg	130 U	71 U	140 U	150 U
4-Chloroaniline	µg/kg	86 U	47 U	95 U	98 U
4-Chlorophenyl phenyl ether	µg/kg	40 U	22 U	44 U	46 U
4-Nitroaniline	µg/kg	170 U	94 U	190 U	200 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	270 U	150 U	300 U	310 U
Acenaphthene	µg/kg	8.2 U	31	31 J	36 J
Acenaphthylene	µg/kg	11 U	12 J	13 U	13 U
Acetophenone	µg/kg	31 U	17 U	35 U	36 U
Anthracene	µg/kg	13 J	64	74	86
Atrazine	µg/kg	100 U	57 U	110 U	120 U
Benzaldehyde	µg/kg	65 U	36 U	73 U	75 U
Benzo(a)anthracene	µg/kg	72	250	390	450
Benzo(a)pyrene	µg/kg	89	280	410	530
Benzo(b)fluoranthene	µg/kg	110	390	680	750
Benzo(g,h,i)perylene	µg/kg	59	150	140	180
Benzo(k)fluoranthene	µg/kg	42 J	150	210	230
Biphenyl (1,1-Biphenyl)	µg/kg	48 U	27 U	54 U	56 U
bis(2-Chloroethoxy)methane	µg/kg	34 U	19 U	38 U	39 U
bis(2-Chloroethyl)ether	µg/kg	34 U	19 U	38 U	39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	150 U	80 U	160 U	170 U
Butyl benzylphthalate (BBP)	µg/kg	63 U	35 U	70 U	72 U
Caprolactam	µg/kg	210 U	120 U	240 U	250 U
Carbazole	µg/kg	54 U	35 J	60 U	62 U
Chrysene	µg/kg	82	290	430	550
Di-n-butylphthalate (DBP)	µg/kg	63 U	35 U	70 U	72 U
Di-n-octyl phthalate (DnOP)	µg/kg	80 U	44 U	89 U	91 U
Dibenz(a,h)anthracene	µg/kg	20 U	42	52	71
Dibenzofuran	µg/kg	37 U	22 J	41 U	42 U
Diethyl phthalate	µg/kg	88 U	49 U	98 U	100 U
Dimethyl phthalate	µg/kg	40 U	22 U	44 U	46 U
Fluoranthene	µg/kg	150	610	830	980
Fluorene	µg/kg	7.8 U	35	30 J	37 J
Hexachlorobenzene	µg/kg	8.1 U	4.5 U	9.1 U	9.3 U
Hexachlorobutadiene	µg/kg	34 U	19 U	38 U	39 U
Hexachlorocyclopentadiene	µg/kg	180 U	97 U	200 U	200 U
Hexachloroethane	µg/kg	26 U	14 U	29 U	29 U
Indeno(1,2,3-cd)pyrene	µg/kg	47	130	140	200
Isophorone	µg/kg	34 U	19 U	38 U	39 U
N-Nitrosodi-n-propylamine	µg/kg	31 U	17 U	35 U	36 U
N-Nitrosodiphenylamine	µg/kg	34 U	19 U	38 U	39 U
Naphthalene	µg/kg	6.9 U	20 J	11 J	12 J

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	37 U	20 U	41 U	42 U
Pentachlorophenol	µg/kg	170 U	91 U	180 U	190 U
Phenanthrene	µg/kg	58	270	340	400
Phenol	µg/kg	23 U	13 U	25 U	26 U
Pyrene	µg/kg	130	470	670	800
Herbicides					
2,4,5-T	µg/kg	36 UJ	20 U	41 U	41 U
2,4,5-TP (Silvex)	µg/kg	39 U	21 U	44 U	45 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	140 U	75 U	160 U	160 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	62 U	34 U	70 U	72 U
Aroclor-1221 (PCB-1221)	µg/kg	68 U	37 U	77 U	78 U
Aroclor-1232 (PCB-1232)	µg/kg	65 U	36 U	74 U	75 U
Aroclor-1242 (PCB-1242)	µg/kg	54 U	71 J	88 J	130 J
Aroclor-1248 (PCB-1248)	µg/kg	68 U	37 U	77 U	78 U
Aroclor-1254 (PCB-1254)	µg/kg	65 U	36 U	74 U	75 U
Aroclor-1260 (PCB-1260)	µg/kg	62 U	34 U	70 U	72 U
Pesticides					
4,4'-DDD	µg/kg	420 U	2.3 U	4.7 U	4.8 U
4,4'-DDE	µg/kg	4.3 U	2.3 U	4.8 U	4.9 U
4,4'-DDT	µg/kg	320 U	1.8 U	3.6 U	3.7 U
Aldrin	µg/kg	2.2 U	1.2 U	2.5 U	2.5 U
alpha-BHC	µg/kg	260 U	1.4 U	2.9 U	3.0 U
alpha-Chlordane	µg/kg	4.2 U	2.3 U	4.8 U	4.9 U
beta-BHC	µg/kg	4.9 U	2.7 U	5.5 U	5.7 U
delta-BHC	µg/kg	480 U	140 UJ	280 UJ	280 UJ
Dieldrin	µg/kg	3.1 U	1.7 U	3.5 U	3.6 U
Endosulfan I	µg/kg	3.4 U	1.9 U	3.8 U	3.9 U
Endosulfan II	µg/kg	4.2 U	2.3 U	4.7 U	4.8 U
Endosulfan sulfate	µg/kg	360 U	99 U	200 U	210 U
Endrin	µg/kg	5.4 U	2.9 U	6.1 U	6.2 U
Endrin aldehyde	µg/kg	370 U	100 U	210 U	210 U
Endrin ketone	µg/kg	2.5 U	1.4 U	2.8 U	2.9 U
gamma-BHC (lindane)	µg/kg	510 U	2.8 U	5.7 U	5.8 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	3.5 U	2.3 J	3.9 U	4.0 U
Heptachlor	µg/kg	4.5 U	2.4 U	5.1 U	5.2 U
Heptachlor epoxide	µg/kg	4.1 U	2.2 U	4.6 U	4.7 U
Methoxychlor	µg/kg	19 U	10 U	21 U	21 U
Toxaphene	µg/kg	71 U	39 U	80 U	82 U
Metals					
Aluminum	mg/kg	4600	8000	9400	9900
Antimony	mg/kg	0.41 J	0.33 J	0.48 J	0.58 J
Arsenic	mg/kg	6.8	11	15	15
Barium	mg/kg	190	120	190	200
Beryllium	mg/kg	0.13 U	0.50	0.59	0.66
Cadmium	mg/kg	0.24 J	0.50	0.58	0.58 J
Calcium	mg/kg	150000	64000	96000	98000
Chromium	mg/kg	8.3	15	16	17
Cobalt	mg/kg	4.3	7.2	7.6	7.6
Copper	mg/kg	14	31	34	34
Iron	mg/kg	9300	16000	20000	21000
Lead	mg/kg	15	49	48	48
Magnesium	mg/kg	19000	19000	22000	23000
Manganese	mg/kg	520	460	640	660
Mercury	mg/kg	0.061 J	0.092 J	0.10 J	0.11 J
Nickel	mg/kg	11	19	20	21
Potassium	mg/kg	940	1200	1500	1600
Selenium	mg/kg	0.73 J	0.71 J	1.1 J	1.1 J
Silver	mg/kg	0.055 U	0.078 J	0.10 J	0.11 J
Sodium	mg/kg	180 J	120 J	170 J	180 J
Thallium	mg/kg	0.27 J	0.28 J	0.34 J	0.35 J
Vanadium	mg/kg	13	20	24	25
Zinc	mg/kg	54	120	140	150
Methyl mercury	µg/kg	0.20 U	0.46	0.22 U	0.23 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-12**	**SD-13**	**SD-13**	**SD-13**
	Sample Name:	**SED-092618-38443-JPF-030**	**SED-092518-38443-JPF-024**	**SED-092518-38443-JPF-022**	**SED-092518-38443-JPF-023**
	Sample Date:	**09/26/2018**	**09/25/2018**	**09/25/2018**	**09/25/2018**
	Depth:	**0-0.5 ft BGS**	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS Duplicate**
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.00094 J	0.0083	0.0045	0.0047
Copper	umol/g	0.18	0.70	0.46	0.47
Lead	umol/g	0.078	0.47	0.22	0.22
Mercury	umol/g	0.000025 U	0.000014 U	0.000026 U	0.000026 U
Nickel	umol/g	0.13	0.22	0.27	0.29
Zinc	umol/g	0.72	2.4	1.7	1.7
Sulfide	umol/g	46 J	11	52	51
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.024	0.34	0.050	0.052
General Chemistry					
Cyanide (total)	mg/kg	0.50 U	0.31 U	0.53 U	0.54 U
Soot carbon	mg/kg	9500	7700	9300	15000
Total organic carbon (TOC)	mg/kg	25000	16000	36000	33000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/kg	3.3 U	5.1 U	4.5 U	3.6 U
1,1,2,2-Tetrachloroethane	µg/kg	5.8 U	8.8 U	7.8 U	6.3 U
1,1,2-Trichloroethane	µg/kg	4.6 U	7.0 U	6.2 U	5.0 U
1,1-Dichloroethane	µg/kg	2.8 U	4.3 U	3.8 U	3.0 U
1,1-Dichloroethene	µg/kg	3.7 U	5.6 U	4.9 U	4.0 U
1,2,4-Trichlorobenzene	µg/kg	2.3 U	3.5 U	3.1 U	2.5 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	15 U	22 U	20 U	16 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	3.1 U	4.8 U	4.2 U	3.4 U
1,2-Dichlorobenzene	µg/kg	4.5 U	6.9 U	6.1 U	4.9 U
1,2-Dichloroethane	µg/kg	3.1 U	4.8 U	4.2 U	3.4 U
1,2-Dichloropropane	µg/kg	3.4 U	5.3 U	4.6 U	3.7 U
1,3-Dichlorobenzene	µg/kg	3.3 U	5.0 U	4.4 U	3.6 U
1,4-Dichlorobenzene	µg/kg	3.6 U	5.5 U	4.8 U	3.9 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	34 J	41 J	49 J	39 J
2-Hexanone	µg/kg	17 U	25 U	22 U	18 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	15 U	23 U	20 U	16 U
Acetone	µg/kg	85 U	130 U	110 J	150
Benzene	µg/kg	2.8 U	4.3 U	3.8 U	3.1 U
Bromodichloromethane	µg/kg	2.8 U	4.2 U	3.7 U	3.0 U
Bromoform	µg/kg	9.7 U	15 U	13 U	11 U
Bromomethane (Methyl bromide)	µg/kg	4.0 U	6.1 U	5.4 U	4.3 U
Carbon disulfide	µg/kg	4.7 U	7.2 U	6.3 U	5.1 U
Carbon tetrachloride	µg/kg	13 U	20 U	18 U	14 U
Chlorobenzene	µg/kg	3.7 U	5.7 U	5.0 U	4.0 U
Chloroethane	µg/kg	4.9 U	7.5 U	6.6 U	5.4 U
Chloroform (Trichloromethane)	µg/kg	3.2 U	4.9 U	4.3 U	3.5 U
Chloromethane (Methyl chloride)	µg/kg	4.2 U	6.4 U	5.7 U	4.6 U
cis-1,2-Dichloroethene	µg/kg	2.6 U	4.0 U	3.5 U	2.9 U
cis-1,3-Dichloropropene	µg/kg	5.8 U	8.9 U	7.8 U	6.3 U
Cyclohexane	µg/kg	5.6 U	8.5 U	7.5 U	6.0 U
Dibromochloromethane	µg/kg	11 U	17 U	15 U	12 U
Dichlorodifluoromethane (CFC-12)	µg/kg	3.8 U	5.8 U	5.1 U	4.1 U
Ethylbenzene	µg/kg	4.2 U	6.5 U	5.7 U	4.6 U
Isopropyl benzene	µg/kg	3.4 U	5.1 U	4.5 U	3.7 U
Methyl acetate	µg/kg	14 U	21 U	19 U	15 U
Methyl cyclohexane	µg/kg	5.0 U	7.6 U	6.7 U	5.4 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
Methyl tert butyl ether (MTBE)	µg/kg	3.3 U	5.1 U	4.5 U	3.6 U
Methylene chloride	µg/kg	49 U	74 U	65 U	53 U
Styrene	µg/kg	4.7 U	7.2 U	6.3 U	5.1 U
Tetrachloroethene	µg/kg	3.0 U	4.5 U	4.0 U	3.2 U
Toluene	µg/kg	3.1 U	4.8 U	4.2 U	3.4 U
trans-1,2-Dichloroethene	µg/kg	1.9 U	2.9 U	2.5 U	2.0 U
trans-1,3-Dichloropropene	µg/kg	4.2 U	6.4 U	5.6 U	4.5 U
Trichloroethene	µg/kg	2.6 U	3.9 U	3.4 U	2.8 U
Trichlorofluoromethane (CFC-11)	µg/kg	4.4 U	6.7 U	5.9 U	4.7 U
Trifluorotrichloroethane (CFC-113)	µg/kg	5.2 U	7.9 U	7.0 U	5.6 U
Vinyl chloride	µg/kg	3.4 U	5.2 U	4.6 U	3.7 U
Xylenes (total)	µg/kg	6.4 U	9.8 U	8.6 U	7.0 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	25 U	37 U	36 U	32 U
2,4,5-Trichlorophenol	µg/kg	170 U	260 U	250 U	220 U
2,4,6-Trichlorophenol	µg/kg	160 U	240 U	230 U	210 U
2,4-Dichlorophenol	µg/kg	110 U	160 U	160 U	140 U
2,4-Dimethylphenol	µg/kg	99 U	150 U	140 U	130 U
2,4-Dinitrophenol	µg/kg	350 U	530 U	510 U	460 U
2,4-Dinitrotoluene	µg/kg	150 U	230 U	220 U	200 U
2,6-Dinitrotoluene	µg/kg	140 U	210 U	200 U	180 U
2-Chloronaphthalene	µg/kg	35 U	52 U	50 U	45 U
2-Chlorophenol	µg/kg	25 U	37 U	36 U	32 U
2-Methylnaphthalene	µg/kg	9.6 J	7.3 U	7.0 U	6.3 U
2-Methylphenol	µg/kg	77 U	110 U	110 U	100 U
2-Nitroaniline	µg/kg	99 U	150 U	140 U	130 U
2-Nitrophenol	µg/kg	32 U	48 U	46 U	42 U
3&4-Methylphenol	µg/kg	72 U	110 U	100 U	94 U
3,3'-Dichlorobenzidine	µg/kg	110 U	160 U	150 U	140 U
3-Nitroaniline	µg/kg	120 U	180 U	170 U	160 U
4,6-Dinitro-2-methylphenol	µg/kg	200 U	300 U	290 U	260 U
4-Bromophenyl phenyl ether	µg/kg	35 U	52 U	50 U	45 U
4-Chloro-3-methylphenol	µg/kg	110 U	170 U	160 U	150 U
4-Chloroaniline	µg/kg	75 U	110 U	110 U	97 U
4-Chlorophenyl phenyl ether	µg/kg	35 U	52 U	50 U	45 U
4-Nitroaniline	µg/kg	150 U	220 U	210 U	190 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitrophenol	µg/kg	230 U	350 U	340 U	300 U
Acenaphthene	µg/kg	19 J	11 U	10 U	9.2 U
Acenaphthylene	µg/kg	13 J	15 U	14 U	13 U
Acetophenone	µg/kg	27 U	41 U	39 U	36 U
Anthracene	µg/kg	39	13 J	8.6 U	17 J
Atrazine	µg/kg	89 U	130 U	130 U	120 U
Benzaldehyde	µg/kg	57 U	85 U	82 U	74 U
Benzo(a)anthracene	µg/kg	190	78	91	110
Benzo(a)pyrene	µg/kg	190	100	110	120
Benzo(b)fluoranthene	µg/kg	310	150	180	160
Benzo(g,h,i)perylene	µg/kg	150	41 J	39 J	110
Benzo(k)fluoranthene	µg/kg	100	64	59	87
Biphenyl (1,1-Biphenyl)	µg/kg	42 U	63 U	61 U	55 U
bis(2-Chloroethoxy)methane	µg/kg	30 U	44 U	43 U	39 U
bis(2-Chloroethyl)ether	µg/kg	30 U	44 U	43 U	39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	130 U	190 U	180 U	160 U
Butyl benzylphthalate (BBP)	µg/kg	55 U	81 U	79 U	71 U
Caprolactam	µg/kg	190 U	280 U	270 U	240 U
Carbazole	µg/kg	47 U	70 U	68 U	61 U
Chrysene	µg/kg	230	97	110	140
Di-n-butylphthalate (DBP)	µg/kg	55 U	81 U	79 U	71 U
Di-n-octyl phthalate (DnOP)	µg/kg	70 U	100 U	100 U	91 U
Dibenz(a,h)anthracene	µg/kg	38	26 U	25 U	22 U
Dibenzofuran	µg/kg	32 U	48 U	46 U	42 U
Diethyl phthalate	µg/kg	77 U	110 U	110 U	100 U
Dimethyl phthalate	µg/kg	35 U	52 U	50 U	45 U
Fluoranthene	µg/kg	450	170	190	220
Fluorene	µg/kg	23 J	10 U	9.8 U	11 J
Hexachlorobenzene	µg/kg	7.1 U	11 U	10 U	9.2 U
Hexachlorobutadiene	µg/kg	30 U	44 U	43 U	39 U
Hexachlorocyclopentadiene	µg/kg	150 U	230 U	220 U	200 U
Hexachloroethane	µg/kg	22 U	33 U	32 U	29 U
Indeno(1,2,3-cd)pyrene	µg/kg	130	42 J	45 J	88
Isophorone	µg/kg	30 U	44 U	43 U	39 U
N-Nitrosodi-n-propylamine	µg/kg	27 U	41 U	39 U	36 U
N-Nitrosodiphenylamine	µg/kg	30 U	44 U	43 U	39 U
Naphthalene	µg/kg	6.0 U	8.9 U	8.6 U	7.8 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Semivolatile Organic Compounds					
Nitrobenzene	µg/kg	32 U	48 U	46 U	42 U
Pentachlorophenol	µg/kg	140 U	210 U	210 U	190 U
Phenanthrene	µg/kg	240	67	66	79
Phenol	µg/kg	20 U	30 U	29 U	26 U
Pyrene	µg/kg	360	140	160	200
Herbicides					
2,4,5-T	µg/kg	32 UJ	47 UJ	45 UJ	41 UJ
2,4,5-TP (Silvex)	µg/kg	34 U	51 U	48 U	44 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	120 U	180 U	170 U	160 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/kg	53 U	80 U	77 U	71 U
Aroclor-1221 (PCB-1221)	µg/kg	58 U	88 U	84 U	77 U
Aroclor-1232 (PCB-1232)	µg/kg	55 U	84 U	81 U	74 U
Aroclor-1242 (PCB-1242)	µg/kg	46 U	69 U	67 U	61 U
Aroclor-1248 (PCB-1248)	µg/kg	58 U	88 U	84 U	77 U
Aroclor-1254 (PCB-1254)	µg/kg	78 J	84 U	81 U	74 U
Aroclor-1260 (PCB-1260)	µg/kg	53 U	80 U	77 U	71 U
Pesticides					
4,4'-DDD	µg/kg	360 U	540 U	520 U	470 U
4,4'-DDE	µg/kg	3.6 U	5.5 U	5.3 U	4.8 U
4,4'-DDT	µg/kg	270 U	410 U	400 U	360 U
Aldrin	µg/kg	1.9 U	2.8 U	2.7 U	2.5 U
alpha-BHC	µg/kg	220 U	330 U	320 U	290 U
alpha-Chlordane	µg/kg	3.6 U	5.5 U	5.3 U	4.8 U
beta-BHC	µg/kg	4.2 U	6.3 U	6.1 U	5.5 U
delta-BHC	µg/kg	410 U	620 U	590 U	540 U
Dieldrin	µg/kg	2.6 U	4.0 U	3.9 U	3.5 U
Endosulfan I	µg/kg	2.9 U	4.4 U	4.2 U	3.8 U
Endosulfan II	µg/kg	3.6 U	5.4 U	5.2 U	4.7 U
Endosulfan sulfate	µg/kg	310 U	470 U	450 U	410 U
Endrin	µg/kg	4.6 U	6.9 U	6.7 U	6.1 U
Endrin aldehyde	µg/kg	310 U	480 U	460 U	420 U
Endrin ketone	µg/kg	2.1 U	3.2 U	3.1 U	2.9 U
gamma-BHC (lindane)	µg/kg	430 U	650 U	630 U	570 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Pesticides					
gamma-Chlordane	µg/kg	3.0 U	12 J	12 NJ	4.5 NJ
Heptachlor	µg/kg	3.8 U	5.8 U	5.5 U	5.1 U
Heptachlor epoxide	µg/kg	3.5 U	5.3 U	5.0 U	4.6 U
Methoxychlor	µg/kg	16 U	24 U	23 U	21 U
Toxaphene	µg/kg	60 U	91 U	88 U	80 U
Metals					
Aluminum	mg/kg	8500	7600	7400	7400
Antimony	mg/kg	0.71 J	0.63 J	0.59 J	0.53 J
Arsenic	mg/kg	12	12	12	13
Barium	mg/kg	160	180	180	140
Beryllium	mg/kg	0.46 U	0.47 U	0.44 U	0.21 U
Cadmium	mg/kg	0.64	0.50 J	0.50 J	0.34 J
Calcium	mg/kg	94000	110000	97000	210000
Chromium	mg/kg	19	14	13	12
Cobalt	mg/kg	7.1	5.8	5.6	7.8
Copper	mg/kg	30	24	24	19
Iron	mg/kg	16000	15000	14000	15000
Lead	mg/kg	37	25	25	20
Magnesium	mg/kg	20000	17000	16000	33000
Manganese	mg/kg	460	390	380	570
Mercury	mg/kg	0.11 J	0.098 J	0.10 J	0.070 J
Nickel	mg/kg	19	17	17	16
Potassium	mg/kg	1400	1400	1300	1500
Selenium	mg/kg	1.2 J	1.1 J	1.2 J	0.82 J
Silver	mg/kg	0.22 J	0.13 J	0.13 J	0.068 J
Sodium	mg/kg	160 J	200 J	190 J	240 J
Thallium	mg/kg	0.38 J	0.32 J	0.32 J	0.32 J
Vanadium	mg/kg	22	20	19	20
Zinc	mg/kg	110	90	87	77
Methyl mercury	µg/kg	0.51	0.69	0.64	0.55

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-14**	**SD-14**	**SD-14**	**SD-15**
	Sample Name:	**SED-092618-38443-JPF-028**	**SED-092618-38443-JPF-026**	**SED-092618-38443-JPF-027**	**SED-092618-38443-JPF-029**
	Sample Date:	**09/26/2018**	**09/26/2018**	**09/26/2018**	**09/26/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
				Duplicate	
Parameters	**Unit**				
Metals, SEM					
Cadmium	umol/g	0.0033	0.0021 J	0.0019 J	0.00095 J
Copper	umol/g	0.30	0.27	0.25	0.12
Lead	umol/g	0.20	0.15	0.13	0.11
Mercury	umol/g	0.000021 U	0.000029 U	0.000029 U	0.000027 U
Nickel	umol/g	0.23	0.21	0.20	0.18
Zinc	umol/g	1.3	1.2	1.2	1.0
Sulfide	umol/g	69 J	77 J	72 J	94 J
Metals, SEM					
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.029	0.024	0.025	0.015
General Chemistry					
Cyanide (total)	mg/kg	0.58 J	0.61 U	0.77 J	2.6
Soot carbon	mg/kg	9200	15000	14000	11000
Total organic carbon (TOC)	mg/kg	35000	51000	40000	30000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/kg	1.0 U	1.6 U	3.1 U
1,1,2,2-Tetrachloroethane	µg/kg	1.8 U	2.8 U	5.4 U
1,1,2-Trichloroethane	µg/kg	1.4 U	2.2 U	4.2 U
1,1-Dichloroethane	µg/kg	0.87 U	1.4 U	2.6 U
1,1-Dichloroethene	µg/kg	1.1 U	1.8 U	3.4 U
1,2,4-Trichlorobenzene	µg/kg	0.72 U	1.1 U	2.1 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	4.5 U	7.0 U	13 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	0.97 U	1.5 U	2.9 U
1,2-Dichlorobenzene	µg/kg	1.4 U	2.2 U	4.2 U
1,2-Dichloroethane	µg/kg	0.97 U	1.5 U	2.9 U
1,2-Dichloropropane	µg/kg	1.1 U	1.7 U	3.2 U
1,3-Dichlorobenzene	µg/kg	1.0 U	1.6 U	3.1 U
1,4-Dichlorobenzene	µg/kg	1.1 U	1.7 U	3.3 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	12 J	6.9 U	13 U
2-Hexanone	µg/kg	5.1 U	8.0 U	15 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	4.7 U	7.2 U	14 U
Acetone	µg/kg	26 U	41 U	79 U
Benzene	µg/kg	0.88 U	1.4 U	2.6 U
Bromodichloromethane	µg/kg	0.86 U	1.3 U	2.5 U
Bromoform	µg/kg	3.0 U	4.7 U	9.0 U
Bromomethane (Methyl bromide)	µg/kg	1.2 U	1.9 UJ	3.7 U
Carbon disulfide	µg/kg	1.5 U	2.3 U	4.4 U
Carbon tetrachloride	µg/kg	4.1 U	6.3 U	12 U
Chlorobenzene	µg/kg	1.2 U	1.8 U	3.4 U
Chloroethane	µg/kg	1.5 U	2.4 U	4.6 U
Chloroform (Trichloromethane)	µg/kg	0.99 U	1.5 U	2.9 U
Chloromethane (Methyl chloride)	µg/kg	1.3 U	2.0 U	3.9 U
cis-1,2-Dichloroethene	µg/kg	0.82 U	1.3 U	2.4 U
cis-1,3-Dichloropropene	µg/kg	1.8 U	2.8 U	5.4 U
Cyclohexane	µg/kg	1.7 U	2.7 U	5.1 U
Dibromochloromethane	µg/kg	3.5 U	5.4 U	10 U
Dichlorodifluoromethane (CFC-12)	µg/kg	1.2 U	1.8 U	3.5 U
Ethylbenzene	µg/kg	1.3 U	2.0 U	3.9 U
Isopropyl benzene	µg/kg	1.0 U	1.6 U	3.1 U
Methyl acetate	µg/kg	4.3 U	6.6 U	13 U
Methyl cyclohexane	µg/kg	1.5 U	2.4 U	4.6 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Volatile Organic Compounds				
Methyl tert butyl ether (MTBE)	µg/kg	1.0 U	1.6 U	3.1 U
Methylene chloride	µg/kg	15 U	23 U	45 U
Styrene	µg/kg	1.5 U	2.3 U	4.3 U
Tetrachloroethene	µg/kg	0.92 U	1.4 U	2.7 U
Toluene	µg/kg	1.5 J	3.6 J	2.9 U
trans-1,2-Dichloroethene	µg/kg	0.59 U	0.91 U	1.7 U
trans-1,3-Dichloropropene	µg/kg	1.3 U	2.0 U	3.9 U
Trichloroethene	µg/kg	0.80 U	1.2 U	2.4 U
Trichlorofluoromethane (CFC-11)	µg/kg	1.4 U	2.1 U	4.0 U
Trifluorotrichloroethane (CFC-113)	µg/kg	1.6 U	2.5 U	4.8 U
Vinyl chloride	µg/kg	1.1 U	1.6 U	3.1 U
Xylenes (total)	µg/kg	2.0 U	3.1 U	5.9 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	12 U	650 U	29 U
2,4,5-Trichlorophenol	µg/kg	86 U	4500 U	200 U
2,4,6-Trichlorophenol	µg/kg	79 U	4100 U	180 U
2,4-Dichlorophenol	µg/kg	55 U	2900 U	130 U
2,4-Dimethylphenol	µg/kg	50 U	2600 U	120 U
2,4-Dinitrophenol	µg/kg	180 U	9200 U	410 U
2,4-Dinitrotoluene	µg/kg	77 U	4000 U	180 U
2,6-Dinitrotoluene	µg/kg	69 U	3600 U	160 U
2-Chloronaphthalene	µg/kg	17 U	910 U	40 U
2-Chlorophenol	µg/kg	12 U	650 U	29 U
2-Methylnaphthalene	µg/kg	2.4 U	260 J	5.6 U
2-Methylphenol	µg/kg	38 U	2000 U	89 U
2-Nitroaniline	µg/kg	50 U	2600 U	120 U
2-Nitrophenol	µg/kg	16 U	840 U	37 U
3&4-Methylphenol	µg/kg	36 U	1900 U	83 U
3,3'-Dichlorobenzidine	µg/kg	53 U	2800 U	120 U
3-Nitroaniline	µg/kg	61 U	3200 U	140 U
4,6-Dinitro-2-methylphenol	µg/kg	99 U	5200 U	230 U
4-Bromophenyl phenyl ether	µg/kg	17 U	910 U	40 U
4-Chloro-3-methylphenol	µg/kg	56 U	2900 U	130 U
4-Chloroaniline	µg/kg	37 U	1900 U	86 U
4-Chlorophenyl phenyl ether	µg/kg	17 U	910 U	40 U
4-Nitroaniline	µg/kg	74 U	3900 U	170 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitrophenol	µg/kg	120 U	6100 U	270 U
Acenaphthene	µg/kg	3.5 U	2900	8.2 U
Acenaphthylene	µg/kg	5.0 U	260 U	12 U
Acetophenone	µg/kg	14 U	710 U	32 U
Anthracene	µg/kg	11 J	7800	21 J
Atrazine	µg/kg	45 U	2300 U	100 U
Benzaldehyde	µg/kg	28 U	1500 U	66 U
Benzo(a)anthracene	µg/kg	44	26000	120
Benzo(a)pyrene	µg/kg	49	22000	130
Benzo(b)fluoranthene	µg/kg	67	33000	200
Benzo(g,h,i)perylene	µg/kg	30	11000	100
Benzo(k)fluoranthene	µg/kg	27	9300	70
Biphenyl (1,1-Biphenyl)	µg/kg	21 U	1100 U	49 U
bis(2-Chloroethoxy)methane	µg/kg	15 U	780 U	35 U
bis(2-Chloroethyl)ether	µg/kg	15 U	780 U	35 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	63 U	3300 U	200
Butyl benzylphthalate (BBP)	µg/kg	27 U	1400 U	63 U
Caprolactam	µg/kg	93 U	4900 U	220 U
Carbazole	µg/kg	24 U	5400	55 U
Chrysene	µg/kg	54	29000	150
Di-n-butylphthalate (DBP)	µg/kg	27 U	1400 U	63 U
Di-n-octyl phthalate (DnOP)	µg/kg	35 U	1800 U	81 U
Dibenz(a,h)anthracene	µg/kg	8.6 U	3700	20 U
Dibenzofuran	µg/kg	16 U	1600 J	37 U
Diethyl phthalate	µg/kg	38 U	2000 U	89 U
Dimethyl phthalate	µg/kg	17 U	910 U	40 U
Fluoranthene	µg/kg	100	59000	270
Fluorene	µg/kg	5.1 J	3000	10 J
Hexachlorobenzene	µg/kg	3.5 U	180 U	8.2 U
Hexachlorobutadiene	µg/kg	15 U	780 U	35 U
Hexachlorocyclopentadiene	µg/kg	77 U	4000 U	180 U
Hexachloroethane	µg/kg	11 U	580 U	26 U
Indeno(1,2,3-cd)pyrene	µg/kg	29	11000	86
Isophorone	µg/kg	15 U	780 U	35 U
N-Nitrosodi-n-propylamine	µg/kg	14 U	710 U	32 U
N-Nitrosodiphenylamine	µg/kg	15 U	780 U	35 U
Naphthalene	µg/kg	3.0 U	300 J	6.9 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Nitrobenzene	µg/kg	16 U	840 U	37 U
Pentachlorophenol	µg/kg	72 U	3800 U	170 U
Phenanthrene	µg/kg	51	37000	120
Phenol	µg/kg	9.9 U	520 U	23 U
Pyrene	µg/kg	76	41000	230
Herbicides				
2,4,5-T	µg/kg	16 UJ	21 UJ	38 UJ
2,4,5-TP (Silvex)	µg/kg	17 U	23 U	41 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	59 U	79 U	140 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/kg	26 U	35 U	64 U
Aroclor-1221 (PCB-1221)	µg/kg	29 U	38 U	70 U
Aroclor-1232 (PCB-1232)	µg/kg	28 U	37 U	67 U
Aroclor-1242 (PCB-1242)	µg/kg	23 U	30 U	55 J
Aroclor-1248 (PCB-1248)	µg/kg	29 U	38 U	70 U
Aroclor-1254 (PCB-1254)	µg/kg	28 U	420	67 U
Aroclor-1260 (PCB-1260)	µg/kg	26 U	35 U	64 U
Pesticides				
4,4'-DDD	µg/kg	35 U	48 U	4.3 U
4,4'-DDE	µg/kg	1.8 U	49 U	4.4 U
4,4'-DDT	µg/kg	27 U	36 U	3.3 U
Aldrin	µg/kg	0.92 U	25 U	2.2 U
alpha-BHC	µg/kg	22 U	29 U	2.6 U
alpha-Chlordane	µg/kg	1.8 U	48 U	4.4 U
beta-BHC	µg/kg	2.1 U	56 U	5.0 U
delta-BHC	µg/kg	40 U	55 UJ	240 UJ
Dieldrin	µg/kg	1.3 U	35 U	3.2 U
Endosulfan I	µg/kg	1.4 U	39 U	3.5 U
Endosulfan II	µg/kg	1.8 U	48 U	4.3 U
Endosulfan sulfate	µg/kg	31 U	41 U	190 U
Endrin	µg/kg	2.3 U	61 U	5.5 U
Endrin aldehyde	µg/kg	1.6 U	42 U	190 U
Endrin ketone	µg/kg	1.1 U	29 U	2.6 U
gamma-BHC (lindane)	µg/kg	43 U	58 U	5.2 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Pesticides				
gamma-Chlordane	µg/kg	1.5 U	40 U	3.6 U
Heptachlor	µg/kg	1.9 U	51 U	4.6 U
Heptachlor epoxide	µg/kg	1.7 U	46 U	4.2 U
Methoxychlor	µg/kg	7.9 U	210 UJ	19 U
Toxaphene	µg/kg	30 U	800 U	73 U
Metals				
Aluminum	mg/kg	1500	4500	7400
Antimony	mg/kg	0.12 J	0.24 J	0.43 J
Arsenic	mg/kg	6.4	7.9	9.2
Barium	mg/kg	19	53	170
Beryllium	mg/kg	0.15 U	0.38	0.44 J
Cadmium	mg/kg	0.059 J	0.37	0.41 J
Calcium	mg/kg	150000	84000	140000
Chromium	mg/kg	3.7	12	15
Cobalt	mg/kg	2.4	4.1	6.0
Copper	mg/kg	2.9	19	24
Iron	mg/kg	5800	12000	14000
Lead	mg/kg	3.2	35	26
Magnesium	mg/kg	63000	33000	26000
Manganese	mg/kg	320	320	420
Mercury	mg/kg	0.021 U	0.068 J	0.046 U
Nickel	mg/kg	4.1	11	17
Potassium	mg/kg	320	770	1300
Selenium	mg/kg	0.12 U	0.28 J	0.97 J
Silver	mg/kg	0.022 U	0.055 J	0.13 J
Sodium	mg/kg	170 J	140 J	190 J
Thallium	mg/kg	0.079 J	0.23 J	0.28 J
Vanadium	mg/kg	6.1	15	20
Zinc	mg/kg	13	62	84
Methyl mercury	µg/kg	0.087 U	0.61	0.20 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-16**	**SD-17**	**SD-18**
	Sample Name:	**SED-092618-38443-JPF-025**	**SED-092118-38443-JPF-009**	**SED-092418-38443-JPF-013**
	Sample Date:	**09/26/2018**	**09/21/2018**	**09/24/2018**
	Depth:	**0-0.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Metals, SEM				
Cadmium	umol/g	0.00018 J	0.0029	0.0014
Copper	umol/g	0.030	0.20	0.14
Lead	umol/g	0.014	0.13	0.048
Mercury	umol/g	0.0000098 U	0.000013 U	0.000011 U
Nickel	umol/g	0.020 J	0.090	0.096
Zinc	umol/g	0.14 J	0.58	0.39
Sulfide	umol/g	1.7 J	2.9 J	12 J
Metals, SEM				
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.12	0.34	0.058
General Chemistry				
Cyanide (total)	mg/kg	0.27 U	0.29 U	0.55 U
Soot carbon	mg/kg	15000	18000	7400
Total organic carbon (TOC)	mg/kg	1900	14000	31000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/kg	2.2 U	4.4 U	2.7 U
1,1,2,2-Tetrachloroethane	µg/kg	3.8 U	7.7 U	4.7 U
1,1,2-Trichloroethane	µg/kg	3.0 U	6.1 U	3.7 U
1,1-Dichloroethane	µg/kg	1.9 U	3.7 U	2.3 U
1,1-Dichloroethene	µg/kg	2.4 U	4.8 U	3.0 U
1,2,4-Trichlorobenzene	µg/kg	1.5 U	3.1 U	1.9 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	9.7 U	19 U	12 U
1,2-Dibromoethane (Ethylene dibromide)	µg/kg	2.1 U	4.1 U	2.5 U
1,2-Dichlorobenzene	µg/kg	3.0 U	6.0 U	3.7 U
1,2-Dichloroethane	µg/kg	2.1 U	4.1 U	2.6 U
1,2-Dichloropropane	µg/kg	2.3 U	4.6 U	2.8 U
1,3-Dichlorobenzene	µg/kg	2.2 U	4.4 U	2.7 U
1,4-Dichlorobenzene	µg/kg	2.4 U	4.7 U	2.9 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/kg	16 J	73 J	20 J
2-Hexanone	µg/kg	11 U	22 U	14 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/kg	10 U	20 U	12 U
Acetone	µg/kg	56 U	210	70 U
Benzene	µg/kg	1.9 U	3.7 U	6.4 J
Bromodichloromethane	µg/kg	1.8 U	3.6 U	2.2 U
Bromoform	µg/kg	6.5 U	13 U	7.9 U
Bromomethane (Methyl bromide)	µg/kg	2.7 UJ	5.3 UJ	3.3 UJ
Carbon disulfide	µg/kg	3.1 U	6.2 U	3.9 U
Carbon tetrachloride	µg/kg	8.7 U	17 U	11 U
Chlorobenzene	µg/kg	2.5 U	4.9 U	3.0 U
Chloroethane	µg/kg	3.3 U	6.5 U	4.0 U
Chloroform (Trichloromethane)	µg/kg	2.1 U	4.2 U	2.6 U
Chloromethane (Methyl chloride)	µg/kg	2.8 U	5.6 U	3.5 U
cis-1,2-Dichloroethene	µg/kg	1.8 U	3.5 U	2.2 U
cis-1,3-Dichloropropene	µg/kg	3.9 U	7.7 U	4.8 U
Cyclohexane	µg/kg	3.7 U	7.4 U	4.6 U
Dibromochloromethane	µg/kg	7.5 U	15 U	9.2 U
Dichlorodifluoromethane (CFC-12)	µg/kg	2.5 U	5.0 U	3.1 U
Ethylbenzene	µg/kg	2.8 U	5.6 U	3.5 U
Isopropyl benzene	µg/kg	2.2 U	4.5 U	2.8 U
Methyl acetate	µg/kg	9.1 U	18 U	11 U
Methyl cyclohexane	µg/kg	3.3 U	6.6 U	4.1 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Volatile Organic Compounds				
Methyl tert butyl ether (MTBE)	µg/kg	2.2 U	4.4 U	2.7 U
Methylene chloride	µg/kg	32 U	64 U	40 U
Styrene	µg/kg	3.1 U	6.2 U	3.8 U
Tetrachloroethene	µg/kg	2.0 U	3.9 U	2.4 U
Toluene	µg/kg	2.1 U	4.1 U	2.6 U
trans-1,2-Dichloroethene	µg/kg	1.3 U	2.5 U	1.5 U
trans-1,3-Dichloropropene	µg/kg	2.8 U	5.5 U	3.4 U
Trichloroethene	µg/kg	1.7 U	3.4 U	2.1 U
Trichlorofluoromethane (CFC-11)	µg/kg	2.9 U	5.8 U	3.6 U
Trifluorotrichloroethane (CFC-113)	µg/kg	3.4 U	6.9 U	4.2 U
Vinyl chloride	µg/kg	2.3 U	4.5 U	2.8 U
Xylenes (total)	µg/kg	4.3 U	8.5 U	5.3 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	22 U	32 U	23 U
2,4,5-Trichlorophenol	µg/kg	150 U	220 U	160 U
2,4,6-Trichlorophenol	µg/kg	140 U	200 U	150 U
2,4-Dichlorophenol	µg/kg	99 U	140 U	100 U
2,4-Dimethylphenol	µg/kg	90 U	130 U	91 U
2,4-Dinitrophenol	µg/kg	320 U	450 U	320 U
2,4-Dinitrotoluene	µg/kg	140 U	200 U	140 U
2,6-Dinitrotoluene	µg/kg	130 U	180 U	130 U
2-Chloronaphthalene	µg/kg	31 U	44 U	32 U
2-Chlorophenol	µg/kg	22 U	32 U	23 U
2-Methylnaphthalene	µg/kg	8.8 J	6.2 U	4.5 U
2-Methylphenol	µg/kg	70 U	98 U	71 U
2-Nitroaniline	µg/kg	90 U	130 U	91 U
2-Nitrophenol	µg/kg	29 U	41 U	30 U
3&4-Methylphenol	µg/kg	65 U	92 U	66 U
3,3'-Dichlorobenzidine	µg/kg	96 U	140 U	98 U
3-Nitroaniline	µg/kg	110 U	160 U	110 U
4,6-Dinitro-2-methylphenol	µg/kg	180 U	250 U	180 U
4-Bromophenyl phenyl ether	µg/kg	31 U	44 U	32 U
4-Chloro-3-methylphenol	µg/kg	100 U	140 U	100 U
4-Chloroaniline	µg/kg	67 U	95 U	69 U
4-Chlorophenyl phenyl ether	µg/kg	31 U	44 U	32 U
4-Nitroaniline	µg/kg	130 U	190 U	140 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitrophenol	µg/kg	210 U	300 U	210 U
Acenaphthene	µg/kg	13 J	9.1 U	10 J
Acenaphthylene	µg/kg	11 J	13 U	9.2 U
Acetophenone	µg/kg	25 U	35 U	25 U
Anthracene	µg/kg	26 J	7.6 U	20 J
Atrazine	µg/kg	81 U	110 U	82 U
Benzaldehyde	µg/kg	52 U	73 U	53 U
Benzo(a)anthracene	µg/kg	120	57	130
Benzo(a)pyrene	µg/kg	130	61	150
Benzo(b)fluoranthene	µg/kg	200	86	210
Benzo(g,h,i)perylene	µg/kg	99	50	88
Benzo(k)fluoranthene	µg/kg	70	40 J	74
Biphenyl (1,1-Biphenyl)	µg/kg	38 U	54 U	39 U
bis(2-Chloroethoxy)methane	µg/kg	27 U	38 U	27 U
bis(2-Chloroethyl)ether	µg/kg	27 U	38 U	27 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	120 J	160 U	230
Butyl benzylphthalate (BBP)	µg/kg	49 U	70 U	50 U
Caprolactam	µg/kg	170 U	240 U	170 U
Carbazole	µg/kg	43 U	60 U	43 U
Chrysene	µg/kg	150	62	170
Di-n-butylphthalate (DBP)	µg/kg	49 U	70 U	50 U
Di-n-octyl phthalate (DnOP)	µg/kg	63 U	89 U	64 U
Dibenz(a,h)anthracene	µg/kg	26 J	22 U	23 J
Dibenzofuran	µg/kg	29 U	41 U	30 U
Diethyl phthalate	µg/kg	70 U	98 U	71 U
Dimethyl phthalate	µg/kg	31 U	44 U	32 U
Fluoranthene	µg/kg	270	110	290
Fluorene	µg/kg	16 J	8.7 U	9.6 J
Hexachlorobenzene	µg/kg	6.4 U	9.0 U	6.5 U
Hexachlorobutadiene	µg/kg	27 U	38 U	27 U
Hexachlorocyclopentadiene	µg/kg	140 U	200 U	140 U
Hexachloroethane	µg/kg	20 U	29 U	21 U
Indeno(1,2,3-cd)pyrene	µg/kg	87	46 J	83
Isophorone	µg/kg	27 U	38 U	27 U
N-Nitrosodi-n-propylamine	µg/kg	25 U	35 U	25 U
N-Nitrosodiphenylamine	µg/kg	27 U	38 U	27 U
Naphthalene	µg/kg	5.4 U	7.6 U	5.5 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Nitrobenzene	µg/kg	29 U	41 U	30 U
Pentachlorophenol	µg/kg	130 U	180 U	130 U
Phenanthrene	µg/kg	150	43 J	110
Phenol	µg/kg	18 U	25 U	18 U
Pyrene	µg/kg	240	100	240
Herbicides				
2,4,5-T	µg/kg	29 UJ	41 UJ	29 UJ
2,4,5-TP (Silvex)	µg/kg	32 U	44 U	32 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/kg	110 U	160 U	110 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/kg	49 U	69 U	49 U
Aroclor-1221 (PCB-1221)	µg/kg	53 U	76 U	54 U
Aroclor-1232 (PCB-1232)	µg/kg	51 U	73 U	52 U
Aroclor-1242 (PCB-1242)	µg/kg	77 J	60 J	43 U
Aroclor-1248 (PCB-1248)	µg/kg	53 U	76 U	54 U
Aroclor-1254 (PCB-1254)	µg/kg	51 U	73 U	52 U
Aroclor-1260 (PCB-1260)	µg/kg	49 U	69 U	49 U
Pesticides				
4,4'-DDD	µg/kg	3.3 U	4.7 U	16 U
4,4'-DDE	µg/kg	3.4 U	4.8 U	17 U
4,4'-DDT	µg/kg	2.5 U	3.6 U	13 U
Aldrin	µg/kg	1.7 U	2.4 U	8.5 U
alpha-BHC	µg/kg	2.0 U	2.9 U	10 U
alpha-Chlordane	µg/kg	3.3 U	4.7 U	17 U
beta-BHC	µg/kg	3.8 U	5.5 U	19 U
delta-BHC	µg/kg	200 UJ	280 UJ	190 UJ
Dieldrin	µg/kg	2.4 U	3.5 U	12 U
Endosulfan I	µg/kg	2.7 U	3.8 U	13 U
Endosulfan II	µg/kg	3.3 U	4.7 U	16 U
Endosulfan sulfate	µg/kg	140 U	200 U	14 U
Endrin	µg/kg	4.2 U	6.0 U	21 U
Endrin aldehyde	µg/kg	150 U	210 U	150 U
Endrin ketone	µg/kg	2.0 U	2.8 U	9.9 U
gamma-BHC (lindane)	µg/kg	4.0 U	5.6 U	20 U

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Pesticides				
gamma-Chlordane	µg/kg	2.7 U	3.9 U	14 U
Heptachlor	µg/kg	3.5 U	5.0 U	18 U
Heptachlor epoxide	µg/kg	3.2 U	4.5 U	16 U
Methoxychlor	µg/kg	15 U	21 U	73 UJ
Toxaphene	µg/kg	56 U	79 U	280 U
Metals				
Aluminum	mg/kg	9900	10000	12000
Antimony	mg/kg	0.45 J	0.44 J	0.37 J
Arsenic	mg/kg	14	15	10
Barium	mg/kg	160	200	140
Beryllium	mg/kg	0.63	0.60	0.62
Cadmium	mg/kg	0.51	0.45 J	0.26 J
Calcium	mg/kg	100000	110000	49000
Chromium	mg/kg	19	16	16
Cobalt	mg/kg	8.6	7.6	6.6
Copper	mg/kg	32	27	18
Iron	mg/kg	19000	20000	18000
Lead	mg/kg	37	27	17
Magnesium	mg/kg	20000	21000	14000
Manganese	mg/kg	540	550	340
Mercury	mg/kg	0.10 J	0.062 J	0.049 J
Nickel	mg/kg	21	20	18
Potassium	mg/kg	1600	1800	1700
Selenium	mg/kg	1.1 J	1.1 J	0.62 J
Silver	mg/kg	0.099 J	0.084 J	0.061 J
Sodium	mg/kg	160 J	180 J	140 J
Thallium	mg/kg	0.39	0.39 J	0.26 J
Vanadium	mg/kg	24	25	27
Zinc	mg/kg	120	100	69
Methyl mercury	µg/kg	0.26	0.23 U	0.48

Table 2B

Analytical Results Summary
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

	Location ID:	**SD-19**	**SD-19**	**SD-20**
	Sample Name:	**SED-092418-38443-JPF-012**	**SED-092418-38443-JPF-011**	**SED-092118-38443-JPF-010**
	Sample Date:	**09/24/2018**	**09/24/2018**	**09/21/2018**
	Depth:	**0.5-1.5 ft BGS**	**0-0.5 ft BGS**	**0-0.5 ft BGS**
Parameters	**Unit**			
Metals, SEM				
Cadmium	umol/g	0.0046	0.0038 J	0.0020 J
Copper	umol/g	0.37	0.33	0.10
Lead	umol/g	0.21	0.14	0.079
Mercury	umol/g	0.000020 U	0.000028 U	0.000018 U
Nickel	umol/g	0.27	0.28	0.17
Zinc	umol/g	1.3	1.2	0.48
Sulfide	umol/g	40	58	10 J
Metals, SEM				
Simultaneously extracted metals (SEM)/Acid-volatile sulfide ratio (AVS)	none	0.054	0.033	0.082
General Chemistry				
Cyanide (total)	mg/kg	0.41 U	0.70 J	0.39 U
Soot carbon	mg/kg	4100	8100	9500
Total organic carbon (TOC)	mg/kg	21000	28000	24000

Notes:

PCBs - Polychlorinated Biphenyls
SEM - Selective Ion Monitoring
U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 3

Analytical Methods
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Method	Matrix	Holding Time: Collection to Extraction (Days)	Holding Time: Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Sediment	48 hours	14
		Water	-	14
Fumigants	SW-846 8011	Water	-	14
Semi-Volatile Organic Compounds (SVOCs)	SW-846 8270C	Sediment	14	40
		Water	7	40
Organochlorine Pesticides	SW-846 8081A	Sediment	14	40
		Water	7	40
Polychlorinated Biphenyls (PCBs)	SW-846 8082A	Sediment	14	40
		Water	7	40
Herbicides	SW-846 8151A	Sediment	14	40
		Water	7	40
Select Metals (Total & Dissolved)	SW-846 6020	Sediment/Water	-	180
Mercury (Total & Dissolved)	SW-846 7471A	Sediment	-	28
	SW-846 7470A	Water	-	28
Low Level Mercury	EPA 1631E	Water	-	29
Methyl Mercury	EPA 1630	Water	-	180
Cyanide	SW-846 9012A	Sediment	-	14

Table 3

Analytical Methods
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Method	Matrix	Holding Time: Collection to Extraction (Days)	Holding Time: Collection or Extraction to Analysis (Days)
AVS-SEM	SW-846 6010	Sediment	-	180
Anions	EPA 300.0	Water	-	28 48 hours-Nitrate & Nitrite
Hardness	SM2340B	Water	-	180
Total Dissolved Solids (TDS)	SM2540G	Water	-	7
Sulfide	SW-846 9034	Sediment	-	7
	SM4500-S2-F	Water	-	7
Total Organic Carbon (TOC)	Walkley Black-MSA	Sediment	-	28
Soot Carbon	Lloyd kahn	Sediment	-	28

Notes:

- - Not applicable
AVS-SEM - Acid Volatile Sulfide-Simultaneously Extracted Metals
EPA - "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983 (with all subsequent revisions)
MSA - "Methods of Soil Analysis, Chemical and Microbiological Properties", Part 2, 2nd Ed., 1982 and Subsequent Revisions
SM - "Standard Methods for the Examination of Water and Wastewater," 22nd Edition
SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Results Due to Holding Time Exceedance
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
Herbicides	SED-092118-38443-JPF-004	18	14	2,4,5-T	25 UJ	µg/Kg
				2,4,5-TP (Silvex)	27 UJ	µg/Kg
				2,4-Dichlorophenoxyacetic acid (2,4-D)	95 UJ	µg/Kg
Pesticides	SED-092018-38443-JPF-001	29	14	delta-BHC	R	µg/Kg
	SED-092118-38443-JPF-002	28	14	delta-BHC	53 UJ	µg/Kg
	SED-092118-38443-JPF-003	28	14	delta-BHC	93 UJ	µg/Kg
	SED-092118-38443-JPF-004	28	14	delta-BHC	68 UJ	µg/Kg
	SED-092118-38443-JPF-005	28	14	delta-BHC	970 UJ	µg/Kg
	SED-092118-38443-JPF-006	28	14	delta-BHC	120 UJ	µg/Kg
	SED-092118-38443-JPF-007	28	14	delta-BHC	120 UJ	µg/Kg
	SED-092118-38443-JPF-008	28	14	delta-BHC	320 UJ	µg/Kg
	SED-092118-38443-JPF-009	28	14	delta-BHC	55 UJ	µg/Kg
	SED-092118-38443-JPF-010	28	14	delta-BHC	190 UJ	µg/Kg
	SED-092418-38443-JPF-011	23	14	delta-BHC	280 UJ	µg/Kg
	SED-092418-38443-JPF-012	23	14	delta-BHC	200 UJ	µg/Kg
	SED-092418-38443-JPF-013	23	14	delta-BHC	240 UJ	µg/Kg
	SED-092518-38443-JPF-014	22	14	delta-BHC	160 UJ	µg/Kg
	SED-092518-38443-JPF-015	22	14	delta-BHC	270 UJ	µg/Kg
	SED-092518-38443-JPF-016	22	14	delta-BHC	340 UJ	µg/Kg
	SED-092518-38443-JPF-017	22	14	delta-BHC	160 UJ	µg/Kg
	SED-092518-38443-JPF-018	22	14	delta-BHC	160 UJ	µg/Kg
	SED-092518-38443-JPF-019	22	14	delta-BHC	250 UJ	µg/Kg
	SED-092518-38443-JPF-020	22	14	delta-BHC	200 UJ	µg/Kg
	SED-092518-38443-JPF-021	22	14	delta-BHC	240 UJ	µg/Kg
	SED-092518-38443-JPF-022	22	14	delta-BHC	280 UJ	µg/Kg
	SED-092518-38443-JPF-023	22	14	delta-BHC	280 UJ	µg/Kg

Table 4

Qualified Sample Results Due to Holding Time Exceedance
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
	SED-092518-38443-JPF-024	22	14	delta-BHC	140 UJ	µg/Kg
Acid Volatile Sulfide	SED-092018-38443-JPF-001	11	7	Sulfide	15 J	umol/g
Acid Volatile Sulfide	SED-092118-38443-JPF-006	10	7	Sulfide	4.1 J	umol/g
	SED-092118-38443-JPF-007				4.2 J	umol/g
	SED-092118-38443-JPF-008				23 J	umol/g
	SED-092118-38443-JPF-009				2.9 J	umol/g
	SED-092118-38443-JPF-010				10 J	umol/g
	SED-092118-38443-JPF-002				3.3 J	umol/g
	SED-092118-38443-JPF-003				9.7 J	umol/g
	SED-092118-38443-JPF-004				4.5 J	umol/g
	SED-092118-38443-JPF-005				22 J	umol/g
Acid Volatile Sulfide	SED-092418-38443-JPF-013	10	7	Sulfide	12 J	umol/g
Acid Volatile Sulfide	SED-092618-38443-JPF-028	12	7	Sulfide	69 J	umol/g
	SED-092618-38443-JPF-029				94 J	umol/g
	SED-092618-38443-JPF-030				46 J	umol/g
	SED-092618-38443-JPF-025				1.7 J	umol/g
	SED-092618-38443-JPF-026				77 J	umol/g
	SED-092618-38443-JPF-027				72 J	umol/g

Notes:

J - Estimated concentration
R - Rejected
UJ - Not detected; associated reporting limit is estimated

Table 5

Qualified Sample Results Due to Outlying Continuing Calibration Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
VOCs	cis-1,3-Dichloropropene	10/01/2018	26	SW-38443-091918-JPF-012	0.61 UJ	µg/L
				SW-38443-091918-JPF-009	0.61 UJ	µg/L
				SW-38443-091918-JPF-011	0.61 UJ	µg/L
VOCs	trans-1,3-Dichloropropene	10/01/2018	28	SW-38443-091918-JPF-012	0.67 UJ	µg/L
				SW-38443-091918-JPF-009	0.67 UJ	µg/L
				SW-38443-091918-JPF-011	0.67 UJ	µg/L
VOCs	1,1,2,2-Tetrachloroethane	09/27/2018	27	SW-38443-091818-GL-002	0.13 UJ	µg/L
				SW-38443-091818-GL-003	0.13 UJ	µg/L
				SW-38443-091818-GL-004	0.13 UJ	µg/L
				SW-38443-091918-JPF-005	0.13 UJ	µg/L
				SW-38443-091918-JPF-006	0.13 UJ	µg/L
				SW-38443-091918-JPF-007	0.13 UJ	µg/L
				SW-38443-091918-JPF-008	0.13 UJ	µg/L
				SW-38443-091918-JPF-010	0.13 UJ	µg/L
VOCs	Bromoform	09/27/2018	28	SW-38443-091818-GL-002	0.76 UJ	µg/L
				SW-38443-091818-GL-003	0.76 UJ	µg/L
				SW-38443-091818-GL-004	0.76 UJ	µg/L
				SW-38443-091918-JPF-005	0.76 UJ	µg/L
				SW-38443-091918-JPF-006	0.76 UJ	µg/L
				SW-38443-091918-JPF-007	0.76 UJ	µg/L
				SW-38443-091918-JPF-008	0.76 UJ	µg/L
				SW-38443-091918-JPF-010	0.76 UJ	µg/L

Table 5

Qualified Sample Results Due to Outlying Continuing Calibration Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
VOCs	Bromomethane (Methyl bromide)	09/28/2018	34	SED-092018-38443-JPF-001	4.5 UJ	µg/Kg
				SED-092118-38443-JPF-002	1.4 UJ	µg/Kg
				SED-092118-38443-JPF-003	4.2 UJ	µg/Kg
				SED-092118-38443-JPF-004	2.3 UJ	µg/Kg
				SED-092118-38443-JPF-005	8.3 UJ	µg/Kg
				SED-092118-38443-JPF-006	1.3 UJ	µg/Kg
				SED-092118-38443-JPF-007	1.2 UJ	µg/Kg
				SED-092118-38443-JPF-008	5.5 UJ	µg/Kg
				SED-092118-38443-JPF-009	1.9 UJ	µg/Kg
				SED-092118-38443-JPF-010	3.3 UJ	µg/Kg
				SED-092418-38443-JPF-011	5.3 UJ	µg/Kg
				SED-092418-38443-JPF-012	2.7 UJ	µg/Kg
SVOCs	2,2'-Oxybis(1-chloropropane)	10/04/2018	47	SW-38443-091918-JPF-009	0.53 UJ	µg/L
				SW-38443-091918-JPF-012	0.55 UJ	µg/L
Herbicides	2,4,5-T	10/08/2018	25	SED-092018-38443-JPF-001	35 UJ	µg/Kg
				SED-092118-38443-JPF-003	35 UJ	µg/Kg
				SED-092118-38443-JPF-005	74 UJ	µg/Kg
				SED-092118-38443-JPF-006	17 UJ	µg/Kg
				SED-092118-38443-JPF-007	17 UJ	µg/Kg
				SED-092118-38443-JPF-009	21 UJ	µg/Kg
				SED-092118-38443-JPF-010	29 UJ	µg/Kg
				SED-092418-38443-JPF-011	41 UJ	µg/Kg
				SED-092418-38443-JPF-013	38 UJ	µg/Kg
				SED-092118-38443-JPF-008	47 UJ	µg/Kg
				SED-092418-38443-JPF-012	29 UJ	µg/Kg
				SED-092118-38443-JPF-002	20 UJ	µg/Kg

Table 5

Qualified Sample Results Due to Outlying Continuing Calibration Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
Herbicides	2,4,5-T	10/11/2018	28	SED-092618-38443-JPF-025	16 UJ	µg/Kg
				SED-092618-38443-JPF-026	47 UJ	µg/Kg
				SED-092618-38443-JPF-027	45 UJ	µg/Kg
				SED-092618-38443-JPF-028	32 UJ	µg/Kg
				SED-092618-38443-JPF-029	41 UJ	µg/Kg
				SED-092618-38443-JPF-030	36 UJ	µg/Kg
Herbicides	2,4,5-T	10/11/2018	31	SED-092118-38443-JPF-004	25 UJ	µg/Kg
Pesticides	Methoxychlor	10/11/2018	29	SED-092018-38443-JPF-001	18 UJ	µg/Kg
				SED-092118-38443-JPF-002	9.8 UJ	µg/Kg
				SED-092118-38443-JPF-003	17 UJ	µg/Kg
				SED-092118-38443-JPF-004	13 UJ	µg/Kg
				SED-092118-38443-JPF-005	38 UJ	µg/Kg
				SED-092118-38443-JPF-006	8.9 UJ	µg/Kg
				SED-092118-38443-JPF-007	9.4 UJ	µg/Kg
				SED-092118-38443-JPF-008	120 UJ	µg/Kg
Pesticides	Methoxychlor	10/12/2018	40	SED-092118-38443-JPF-009	210 UJ	µg/Kg
				SED-092118-38443-JPF-010	73 UJ	µg/Kg

Notes:

%D - Percent difference
SVOCs - Semi-volatile Organic Compounds
UJ - Not detected; associated reporting limit is estimated
VOCs - Volatile Organic Compounds

Table 6

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
VOCs	Benzene	10/01/2018	0.21 J	SW-38443-091918-JPF-012	0.16 J	0.21 U	µg/L
			0.21 J	SW-38443-091918-JPF-009	0.36 J	0.36 U	µg/L
			0.21 J	SW-38443-091918-JPF-011	0.20 J	0.21 U	µg/L
SVOCs	bis(2-Ethylhexyl)phthalate (DEHP)	10/09/2018	255 J	SED-092118-38443-JPF-004	240 J	255 U	µg/Kg
Metals	Beryllium	10/15/2018	0.095 J	SED-092618-38443-JPF-025	0.15 J	0.15 U	mg/kg
				SED-092618-38443-JPF-026	0.47 J	0.47 U	mg/kg
				SED-092618-38443-JPF-027	0.44 J	0.44 U	mg/kg
				SED-092618-38443-JPF-028	0.46	0.46 U	mg/kg
Metals	Beryllium	10/15/2018	0.047 J	SED-092618-38443-JPF-029	0.21 J	0.21 U	mg/kg
				SED-092618-38443-JPF-030	0.13 J	0.13 U	mg/kg
Metals	Mercury	09/21/2018	0.354 J	SW-38443-091818-GL-002	0.48 J	0.48 U	ng/L
				SW-38443-091818-GL-003	0.32 J	0.354 U	ng/L
				SW-38443-091818-GL-004	0.28 J	0.354 U	ng/L

Table 6

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Metals	Mercury	09/24/2018	0.175 J	SW-38443-091918-JPF-005	0.41 J	0.41 U	ng/L
				SW-38443-091918-JPF-012	0.38 J	0.38 U	ng/L
				SW-38443-091918-JPF-006	0.44 J	0.44 U	ng/L
				SW-38443-091918-JPF-007	0.50	0.50 U	ng/L
				SW-38443-091918-JPF-008	0.44 J	0.44 U	ng/L
				SW-38443-091918-JPF-010	0.45 J	0.45 U	ng/L
				SW-38443-091918-JPF-011	0.35 J	0.35 U	ng/L
				SW-092018-38443-GL-013	0.34 J	0.34 U	ng/L
				SW-092018-38443-GL-014	0.21 J	0.21 U	ng/L
				SW-092018-38443-GL-015	0.28 J	0.28 U	ng/L
				SW-092018-38443-GL-016	0.27 J	0.27 U	ng/L
				SW-092018-38443-GL-017	0.40 J	0.40 U	ng/L

Notes:

* - Blank result adjusted for moisture
J - Estimated concentration
SVOCs - Semi-volatile Organic Compounds
U - Not detected at the associated reporting limit
VOCs - Volatile Organic Compounds

Table 7

Qualified Sample Data Due to Outlying of Surrogate Recoveries
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
VOCs	SW-38443-091818-GL-002	Dibromofluoromethane	133	69-124	Ethylbenzene	0.17 J	µg/L
					m&p-Xylenes	0.58 J	µg/L
					o-Xylene	0.28 J	µg/L
					Toluene	0.82 J	µg/L
					Xylenes (total)	0.86 J	µg/L
VOCs	SW-38443-091818-GL-003	Dibromofluoromethane	132	69-124	m&p-Xylenes	0.33 J	µg/L
					o-Xylene	0.13 J	µg/L
					Toluene	0.45 J	µg/L
					Xylenes (total)	0.46 J	µg/L
VOCs	SW-38443-091818-GL-004	Dibromofluoromethane	126	69-124	m&p-Xylenes	0.30 J	µg/L
					o-Xylene	0.11 J	µg/L
					Toluene	0.42 J	µg/L
					Xylenes (total)	0.41 J	µg/L
VOCs	SW-38443-091918-JPF-005	Dibromofluoromethane	127	69-124	m&p-Xylenes	0.28 J	µg/L
					o-Xylene	0.12 J	µg/L
					Toluene	0.35 J	µg/L
					Xylenes (total)	0.40 J	µg/L

Table 7

Qualified Sample Data Due to Outlying of Surrogate Recoveries
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
VOCs	SW-38443-091918-JPF-006	Dibromofluoromethane	128	69-124	m&p-Xylenes	0.31 J	µg/L
					o-Xylene	0.10 J	µg/L
					Toluene	0.40 J	µg/L
					Xylenes (total)	0.41 J	µg/L
VOCs	SW-38443-091918-JPF-007	Dibromofluoromethane	128	69-124	Ethylbenzene	0.11 J	µg/L
					m&p-Xylenes	0.38 J	µg/L
					o-Xylene	0.18 J	µg/L
					Toluene	0.72 J	µg/L
					Trichloroethene	0.23 J	µg/L
					Xylenes (total)	0.56 J	µg/L
VOCs	SW-38443-091918-JPF-008	Dibromofluoromethane	133	69-124	m&p-Xylenes	0.29 J	µg/L
					o-Xylene	0.12 J	µg/L
					Toluene	0.35 J	µg/L
					Xylenes (total)	0.41 J	µg/L
VOCs	SW-38443-091918-JPF-010	Dibromofluoromethane	125	69-124	m&p-Xylenes	0.15 J	µg/L
					Toluene	0.20 J	µg/L
					Xylenes (total)	0.15 J	µg/L

Notes:

J - Estimated concentration
VOCs - Volatile Organic Compounds

Table 8

Qualified Sample Results Due to Outlying MS/MSD Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
SVOCs	SW-38443-091918-JPF-011	Caprolactam	11	9	17	10-120	33	R	µg/L
SVOCs	SED-092118-38443-JPF-008	Hexachlorocyclopentadiene	0	0	NC	10-120	40	R	µg/Kg
SVOCs	SED-092518-38443-JPF-016	Hexachlorocyclopentadiene	0	0	NC	10-120	40	R	µg/Kg
Metals	SED-092118-38443-JPF-008	Copper	36	42	5	75 - 125	20	0.34 J	umol/g
	SED-092518-38443-JPF-016	Zinc	-22	-24	1	75 - 125	20	2.7 J	umol/g
	SED-092618-38443-JPF-025	Zinc	68	72	3	75 - 125	20	0.14 UJ	umol/g
General Chemistry	SED-092618-38443-JPF-025	Sulfide	61	64	2	75 - 125	20	1.7 J	umol/g
Metals	SED-092118-38443-JPF-008	Aluminum	236	208	5	75 - 125	20	11000 J	mg/kg
	SED-092118-38443-JPF-008	Antimony	53	50	7	75 - 125	20	0.63 J	mg/kg
Metals	SED-092518-38443-JPF-016	Aluminum	215	216	0	75 - 125	20	12000 J	mg/kg
	SED-092518-38443-JPF-016	Antimony	48	53	9	75 - 125	20	0.63 J	mg/kg
	SED-092518-38443-JPF-016	Potassium	127	129	1	75 - 125	20	2000 J	mg/kg

Notes:

J - Estimated concentration
MS - Matrix Spike
MSD - Matrix Spike Duplicate
R - Rejected
RPD - Relative Percent Difference
SVOCs - Semi-volatile Organic Compounds
UJ - Not detected; associated reporting limit is estimated

Table 9

Qualified Sample Data Due to Outlying ICP Serial Dilution Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Serial Dilution Sample ID	Analyte	%D	Associated Sample ID	Qualified Result	Units
Metals	SED-092118-38443-JPF-008	Zinc	12	SED-092118-38443-JPF-008	2.0 J	umol/g
	SED-092518-38443-JPF-016	Zinc	11	SED-092518-38443-JPF-016	2.7 J	umol/g
	SED-092618-38443-JPF-025	Zinc	12	SED-092618-38443-JPF-025	0.14 J	umol/g

Notes:

%D - Percent Difference
ICP - Inductively Coupled Plasma
J - Estimated concentration

Table 10

Qualified Sample Data Due to Analyte Concentrations in the Trip Blanks
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
VOCs	09/18/2018	Acetone	13	SW-38443-091818-GL-001	6.9 J	13 U	µg/L

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
VOCs - Volatile Organic Compounds

Table 11

Qualified Sample Data Due to Variability in Field Duplicate Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	RPD	Diff	RL	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
VOCs	Acetone	100	11.3	10	SW-092018-38443-GL-014	5.7 J	SW-092018-38443-GL-015	17 J	µg/L
SVOCs	Butyl benzylphthalate (BBP)	170	7.26	2.1	SW-38443-091818-GL-003	7.9 J	SW-38443-091818-GL-004	0.64 UJ	µg/L

Notes:

Diff - Difference (i.e., >1X RL for waters or >2XRL for soils)
J - Estimated concentration
RL - Reporting Limit
RPD - Relative Percent Difference
SVOCs - Semi-volatile Organic Compounds
UJ - Not detected; associated reporting limit is estimated
VOCs - Volatile Organic Compounds

Table 12

Qualified Sample Data Due to Differences in Dual Column Results
Quarry Pond Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
September 2018

Parameter	Analyte	RPD (percent)	Criteria (percent)	Associated Sample ID	Qualified Result	Units
PCBs	Aroclor-1242 (PCB-1242)	49	<40	SED-092418-38443-JPF-013	55 J	µg/Kg
PCBs	Aroclor-1242 (PCB-1242)	74	<40	SED-092418-38443-JPF-011	60 J	µg/Kg
PCBs	Aroclor-1242 (PCB-1242)	84	<40	SED-092518-38443-JPF-015	60 NJ	µg/Kg
PCBs	Aroclor-1254 (PCB-1254)	42	<40	SED-092618-38443-JPF-028	78 J	µg/Kg
Pesticides	gamma-Chlordane	54	<40	SED-092518-38443-JPF-018	3.5 J	µg/Kg
Pesticides	gamma-Chlordane	82	<40	SED-092618-38443-JPF-027	12 NJ	µg/Kg
Pesticides	gamma-Chlordane	88	<40	SED-092618-38443-JPF-029	4.5 NJ	µg/Kg

Notes:

J - Estimated concentration
NJ - Presumptively Identified Compound, Estimated concentration
PCBs - Polychlorinated Biphenyls
RPD - Relative Percent Difference

Memorandum

November 5, 2019

To:	Julian Hayward	Ref. No.:	038443-340
From:	Angela Bown/cs/56-NF	Tel:	513-285-1102
CC:	Brent Ramdial, Valerie Chan		

Subject: **Analytical Results and Full Validation**
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

1. Introduction

This document details a validation of analytical results for sediment samples collected in support of the Quarry Pond Sediment Sampling Event at the Moraine, Ohio site during October 2019. Samples were submitted to TestAmerica Laboratories, Inc. (TA) located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2A and Table 2B. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality (QA/QC) samples. The assessment of analytical and in-house data included checks for data consistency, adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2, Appendix E – Quality Assurance Project Plan", September 20, 2017

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check)

Prior to semi-volatile organic compound (SVOC) analysis, the GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the method requires the analysis of the specific tuning compound decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration

To quantify SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

i) All relative response factors (RRFs) must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent (40.0 percent for compounds that exhibit poor response) or a minimum correlation coefficient (R) and minimum coefficient of determination (R^2) of 0.995 and 0.99, respectively, if linear and quadratic equation calibration curves are used

The initial calibration data for SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

5. Continuing Calibration

To ensure that instrument calibration for SVOC analysis is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) All RRF values must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) Percent difference (%D) values must not exceed 25.0 percent (40.0 percent for compounds that exhibit poor response)

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability.

6. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

7. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for SVOC determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory criteria.

8. Internal Standards (IS) Analyses

IS data were evaluated for all SVOC sample analyses.

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

i) The retention time of the IS must not vary more than ±30 seconds from the associated calibration standard

ii) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard

All SVOC IS recoveries and retention times met the above criteria.

9. Laboratory Control Sample Analyses

LCSs are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCSs were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest or the compounds specified in the method. All LCS recoveries were within the laboratory control limits demonstration acceptable analytical accuracy and precision.

10. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

If only the MS or MSD recovery was outside of control limits, no qualification of the data were performed based on the acceptable recovery of the companion spike and the acceptable RPD. High MS/MSD recoveries and/or RPDs do not affect the associated non-detect sample results.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. Most percent recoveries and RPD values, if applicable, were within the laboratory control limits, or did not warrant qualifications. Table 4 presents the sample results that were qualified or rejected due to outlying MS/MSD recoveries and/or RPDs.

11. Field QA/QC Samples

The field QA/QC consisted of one equipment blank sample and one field duplicate sample set.

11.1 Equipment Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one equipment blank sample was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

11.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 100 percent for sediment samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is two times the RL value for sediment samples.

All field duplicate results were within acceptable agreement demonstrating acceptable sampling and analytical precision.

12. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte adjusted for specific sample dilutions, volumes, and moisture content. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Table 2A and Table 2B unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the sample specific MDL in Table 2A and Table 2B.

All sediment results were reported on a dry weight basis.

Sediment sample results with percent solids of less than 30 percent should be carefully evaluated as the amount of moisture can introduce analytical variability.

13. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

14. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2A and Table 2B are acceptable with the specific qualifications and exceptions noted herein.

Table 1

Sample Collection and Analysis Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: Select SVOCs	Comments
SED-38443-100319-JPF-001	SD-17A	Sediment	10/03/2019	16:00	X	
SED-38443-100319-JPF-002	SD-17A	Sediment	10/03/2019	16:05	X	
SED-38443-100319-JPF-003	SD-17B	Sediment	10/03/2019	16:30	X	
SED-38443-100319-JPF-004	SD-17B	Sediment	10/03/2019	16:30	X	FD(SED-38443-100319-JPF-003)
SED-38443-100419-JPF-005	SD-17C	Sediment	10/04/2019	08:05	X	
SED-38443-100419-JPF-006	SD-17C	Sediment	10/04/2019	08:10	X	
SED-38443-100419-JPF-007	SD-17D	Sediment	10/04/2019	09:00	X	
SED-38443-100419-JPF-009	SD-17E	Sediment	10/04/2019	10:45	X	MS/MSD
SED-38443-100419-JPF-010	SD-05A	Sediment	10/04/2019	11:50	X	
SED-38443-100419-JPF-011	SD-05B	Sediment	10/04/2019	12:25	X	
SED-38443-100419-JPF-008	SD-17D	Sediment	10/04/2019	09:10	X	
EB-100419-001	-	Water	10/04/2019	13:00	X	Equipment Blank

Notes:

- - Not Applicable
FD - Field Duplicate Sample of sample in parenthesis
MS/MSD - Matrix Spike/Matrix Spike Duplicate
SVOCs - Semi-volatile Organic Compounds

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:		**SD-05A**	**SD-05B**	**SD-17A**	**SD-17A**
Sample Name:		**SED-38443-100419-JPF-010**	**SED-38443-100419-JPF-011**	**SED-38443-100319-JPF-001**	**SED-38443-100319-JPF-002**
Sample Date:		**10/04/2019**	**10/04/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	20 U	20 U	29 U	42 U
2,4,5-Trichlorophenol	µg/kg	140 U	140 U	200 U	290 U
2,4,6-Trichlorophenol	µg/kg	130 U	130 U	190 U	270 U
2,4-Dichlorophenol	µg/kg	88 U	89 U	130 U	190 U
2,4-Dimethylphenol	µg/kg	80 U	81 U	120 U	170 U
2,4-Dinitrophenol	µg/kg	280 U	290 U	420 U	600 U
2,4-Dinitrotoluene	µg/kg	120 U	120 U	180 U	260 U
2,6-Dinitrotoluene	µg/kg	110 U	110 U	160 U	240 U
2-Chloronaphthalene	µg/kg	28 U	28 U	41 U	59 U
2-Chlorophenol	µg/kg	20 U	20 U	29 U	42 U
2-Methylnaphthalene	µg/kg	3.9 U	3.9 U	36 J	37 J
2-Methylphenol	µg/kg	62 U	62 U	91 U	130 U
2-Nitroaniline	µg/kg	80 U	81 U	120 U	170 U
2-Nitrophenol	µg/kg	26 U	26 U	38 U	55 U
3&4-Methylphenol	µg/kg	58 U	58 U	85 U	120 U
3,3'-Dichlorobenzidine	µg/kg	86 U	87 U	130 U	180 U
3-Nitroaniline	µg/kg	98 U	99 U	140 U	210 U
4,6-Dinitro-2-methylphenol	µg/kg	160 U	160 U	230 U	340 U
4-Bromophenyl phenyl ether	µg/kg	28 U	28 U	41 U	59 U
4-Chloro-3-methylphenol	µg/kg	90 U	91 U	130 U	190 U
4-Chloroaniline	µg/kg	60 U	60 U	88 U	130 U
4-Chlorophenyl phenyl ether	µg/kg	28 U	28 U	41 U	59 U
4-Nitroaniline	µg/kg	120 U	120 U	180 U	250 U
4-Nitrophenol	µg/kg	190 U	190 U	280 U	400 U
Acenaphthene	µg/kg	5.7 U	5.8 U	57	110
Acenaphthylene	µg/kg	8.0 U	8.1 U	46	43 J
Acetophenone	µg/kg	22 U	22 U	32 U	47 U
Anthracene	µg/kg	16 J	6.8 J	220	350
Atrazine	µg/kg	72 U	73 U	110 U	150 U
Benzaldehyde	µg/kg	46 U	46 U	67 U	97 U
Benzo(a)anthracene	µg/kg	74	46	910	1400
Benzo(a)pyrene	µg/kg	96	54	1000	1400
Benzo(b)fluoranthene	µg/kg	130	67	1300	1800
Benzo(g,h,i)perylene	µg/kg	58	41	380	780
Benzo(k)fluoranthene	µg/kg	46	26 J	610	730
Biphenyl (1,1-Biphenyl)	µg/kg	34 U	34 U	50 U	72 U
bis(2-Chloroethoxy)methane	µg/kg	24 U	24 U	35 U	51 U
bis(2-Chloroethyl)ether	µg/kg	24 U	24 U	35 U	51 U

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SD-05A**	**SD-05B**	**SD-17A**	**SD-17A**
	Sample Name:	**SED-38443-100419-JPF-010**	**SED-38443-100419-JPF-011**	**SED-38443-100319-JPF-001**	**SED-38443-100319-JPF-002**
	Sample Date:	**10/04/2019**	**10/04/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	100 U	100 U	160 J	220 U
Butyl benzylphthalate (BBP)	µg/kg	44 U	44 U	64 U	93 U
Caprolactam	µg/kg	150 U	150 U	220 U	320 U
Carbazole	µg/kg	38 U	38 U	130 J	200 J
Chrysene	µg/kg	85	47	970	1700
Di-n-butylphthalate (DBP)	µg/kg	44 U	44 U	64 U	93 U
Di-n-octyl phthalate (DnOP)	µg/kg	56 U	56 U	82 U	120 U
Dibenz(a,h)anthracene	µg/kg	14 U	14 U	100	240
Dibenzofuran	µg/kg	26 U	26 U	48 J	56 J
Diethyl phthalate	µg/kg	62 U	62 U	91 U	130 U
Dimethyl phthalate	µg/kg	28 U	28 U	41 U	59 U
Fluoranthene	µg/kg	160	68	1600	2900
Fluorene	µg/kg	6.8 J	5.5 U	76	100
Hexachlorobenzene	µg/kg	5.7 U	5.7 U	8.3 U	12 U
Hexachlorobutadiene	µg/kg	24 U	24 U	35 U	51 U
Hexachlorocyclopentadiene	µg/kg	120 U	120 U	180 U	260 U
Hexachloroethane	µg/kg	18 U	18 U	26 U	38 U
Indeno(1,2,3-cd)pyrene	µg/kg	58	15 U	390	710
Isophorone	µg/kg	24 U	24 U	35 U	51 U
N-Nitrosodi-n-propylamine	µg/kg	22 U	22 U	32 U	47 U
N-Nitrosodiphenylamine	µg/kg	24 U	24 U	35 U	51 U
Naphthalene	µg/kg	4.8 U	4.9 U	41 J	46 J
Nitrobenzene	µg/kg	26 U	26 U	38 U	55 U
Pentachlorophenol	µg/kg	120 U	120 U	170 U	250 U
Phenanthrene	µg/kg	63	35	910	1400
Phenol	µg/kg	16 U	16 U	23 U	34 U
Pyrene	µg/kg	130	73	1500	2400

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:		**SD-17B**	**SD-17B**	**SD-17C**	**SD-17C**
Sample Name:		**SED-38443-100319-JPF-003**	**SED-38443-100319-JPF-004**	**SED-38443-100419-JPF-005**	**SED-38443-100419-JPF-006**
Sample Date:		**10/03/2019**	**10/03/2019**	**10/04/2019**	**10/04/2019**
			Duplicate		
Parameters	**Unit**				
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	26 U	24 U	23 U	41 U
2,4,5-Trichlorophenol	µg/kg	180 U	170 U	160 U	280 U
2,4,6-Trichlorophenol	µg/kg	170 U	160 U	150 U	260 U
2,4-Dichlorophenol	µg/kg	110 U	110 U	100 U	180 U
2,4-Dimethylphenol	µg/kg	100 U	98 U	94 U	160 U
2,4-Dinitrophenol	µg/kg	370 U	350 U	330 U	580 U
2,4-Dinitrotoluene	µg/kg	160 U	150 U	150 U	250 U
2,6-Dinitrotoluene	µg/kg	150 U	140 U	130 U	230 U
2-Chloronaphthalene	µg/kg	36 U	34 U	33 U	57 U
2-Chlorophenol	µg/kg	26 U	24 U	23 U	41 U
2-Methylnaphthalene	µg/kg	11 J	4.8 U	11 J	61
2-Methylphenol	µg/kg	80 U	76 U	73 U	130 U
2-Nitroaniline	µg/kg	100 U	98 U	94 U	160 U
2-Nitrophenol	µg/kg	34 U	32 U	30 U	53 U
3&4-Methylphenol	µg/kg	75 U	71 U	68 U	120 U
3,3'-Dichlorobenzidine	µg/kg	110 U	110 U	100 U	180 U
3-Nitroaniline	µg/kg	130 U	120 U	110 U	200 U
4,6-Dinitro-2-methylphenol	µg/kg	210 U	200 U	190 U	330 U
4-Bromophenyl phenyl ether	µg/kg	36 U	34 U	33 U	57 U
4-Chloro-3-methylphenol	µg/kg	120 U	110 U	110 U	180 U
4-Chloroaniline	µg/kg	78 U	73 U	70 U	120 U
4-Chlorophenyl phenyl ether	µg/kg	36 U	34 U	33 U	57 U
4-Nitroaniline	µg/kg	160 U	150 U	140 U	240 U
4-Nitrophenol	µg/kg	240 U	230 U	220 U	380 U
Acenaphthene	µg/kg	57	54	27 J	110
Acenaphthylene	µg/kg	10 U	9.8 U	16 J	42 J
Acetophenone	µg/kg	29 U	27 U	26 U	45 U
Anthracene	µg/kg	150	120	97	370
Atrazine	µg/kg	93 U	88 U	84 U	150 U
Benzaldehyde	µg/kg	60 U	56 U	54 U	94 U
Benzo(a)anthracene	µg/kg	750	490	290	1400
Benzo(a)pyrene	µg/kg	710	500	290	1400
Benzo(b)fluoranthene	µg/kg	980	750	400	1700
Benzo(g,h,i)perylene	µg/kg	410	340	190	690
Benzo(k)fluoranthene	µg/kg	280	160	160	790
Biphenyl (1,1-Biphenyl)	µg/kg	44 U	42 U	40 U	69 U
bis(2-Chloroethoxy)methane	µg/kg	31 U	29 U	28 U	49 U
bis(2-Chloroethyl)ether	µg/kg	31 U	29 U	28 U	49 U

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SD-17B**	**SD-17B**	**SD-17C**	**SD-17C**
	Sample Name:	**SED-38443-100319-JPF-003**	**SED-38443-100319-JPF-004**	**SED-38443-100419-JPF-005**	**SED-38443-100419-JPF-006**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/04/2019**	**10/04/2019**
			Duplicate		
Parameters	**Unit**				
Semivolatile Organic Compounds					
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	130 U	120 U	120 U	210 U
Butyl benzylphthalate (BBP)	µg/kg	57 U	54 U	51 U	90 U
Caprolactam	µg/kg	190 U	180 U	180 U	310 U
Carbazole	µg/kg	130	90 J	63 J	250
Chrysene	µg/kg	770	510	310	1300
Di-n-butylphthalate (DBP)	µg/kg	57 U	54 U	51 U	90 U
Di-n-octyl phthalate (DnOP)	µg/kg	73 U	69 U	65 U	110 U
Dibenz(a,h)anthracene	µg/kg	150	97	16 U	240
Dibenzofuran	µg/kg	34 U	32 U	30 U	97 J
Diethyl phthalate	µg/kg	80 U	76 U	73 U	130 U
Dimethyl phthalate	µg/kg	36 U	34 U	33 U	57 U
Fluoranthene	µg/kg	1300	980	600	2500
Fluorene	µg/kg	61	45	36	160
Hexachlorobenzene	µg/kg	7.4 U	7.0 U	6.7 U	12 U
Hexachlorobutadiene	µg/kg	31 U	29 U	28 U	49 U
Hexachlorocyclopentadiene	µg/kg	160 U	150 U	150 U	250 U
Hexachloroethane	µg/kg	23 U	22 U	21 U	37 U
Indeno(1,2,3-cd)pyrene	µg/kg	370	290	170	630
Isophorone	µg/kg	31 U	29 U	28 U	49 U
N-Nitrosodi-n-propylamine	µg/kg	29 U	27 U	26 U	45 U
N-Nitrosodiphenylamine	µg/kg	31 U	29 U	28 U	49 U
Naphthalene	µg/kg	13 J	5.9 U	13 J	62
Nitrobenzene	µg/kg	34 U	32 U	30 U	53 U
Pentachlorophenol	µg/kg	150 U	140 U	140 U	240 U
Phenanthrene	µg/kg	720	550	390	1600
Phenol	µg/kg	21 U	20 U	19 U	33 U
Pyrene	µg/kg	1200	810	500	2000

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SD-17D**	**SD-17D**	**SD-17E**
	Sample Name:	**SED-38443-100419-JPF-007**	**SED-38443-100419-JPF-008**	**SED-38443-100419-JPF-009**
	Sample Date:	**10/04/2019**	**10/04/2019**	**10/04/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/kg	26 U	39 U	68 U
2,4,5-Trichlorophenol	µg/kg	180 U	270 U	470 U
2,4,6-Trichlorophenol	µg/kg	170 U	250 U	440 U
2,4-Dichlorophenol	µg/kg	110 U	170 U	300 U
2,4-Dimethylphenol	µg/kg	100 U	160 U	270 U
2,4-Dinitrophenol	µg/kg	370 U	550 U	R
2,4-Dinitrotoluene	µg/kg	160 U	240 U	420 U
2,6-Dinitrotoluene	µg/kg	150 U	220 U	380 U
2-Chloronaphthalene	µg/kg	36 U	54 U	95 U
2-Chlorophenol	µg/kg	26 U	39 U	68 U
2-Methylnaphthalene	µg/kg	12 J	44 J	34 J
2-Methylphenol	µg/kg	81 U	120 U	210 U
2-Nitroaniline	µg/kg	100 U	160 U	270 U
2-Nitrophenol	µg/kg	34 U	51 U	88 U
3&4-Methylphenol	µg/kg	76 U	110 U	200 U
3,3'-Dichlorobenzidine	µg/kg	110 U	170 U	290 U
3-Nitroaniline	µg/kg	130 U	190 U	330 U
4,6-Dinitro-2-methylphenol	µg/kg	210 U	310 U	540 U
4-Bromophenyl phenyl ether	µg/kg	36 U	54 U	95 U
4-Chloro-3-methylphenol	µg/kg	120 U	170 U	310 U
4-Chloroaniline	µg/kg	78 U	120 U	200 U
4-Chlorophenyl phenyl ether	µg/kg	36 U	54 U	95 U
4-Nitroaniline	µg/kg	160 U	230 U	410 U
4-Nitrophenol	µg/kg	240 U	370 U	640 U
Acenaphthene	µg/kg	100	75	320
Acenaphthylene	µg/kg	10 U	62	27 U
Acetophenone	µg/kg	29 U	43 U	75 U
Anthracene	µg/kg	280	370	770
Atrazine	µg/kg	94 U	140 U	240 U
Benzaldehyde	µg/kg	60 U	89 U	160 U
Benzo(a)anthracene	µg/kg	1200	1200	3200 J
Benzo(a)pyrene	µg/kg	1200	1400	2800 J
Benzo(b)fluoranthene	µg/kg	1600	2000	3200 J
Benzo(g,h,i)perylene	µg/kg	790	510	1600
Benzo(k)fluoranthene	µg/kg	730	810	1500
Biphenyl (1,1-Biphenyl)	µg/kg	44 U	66 U	120 U
bis(2-Chloroethoxy)methane	µg/kg	31 U	47 U	82 U
bis(2-Chloroethyl)ether	µg/kg	31 U	47 U	82 U

Table 2A

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SD-17D**	**SD-17D**	**SD-17E**
	Sample Name:	**SED-38443-100419-JPF-007**	**SED-38443-100419-JPF-008**	**SED-38443-100419-JPF-009**
	Sample Date:	**10/04/2019**	**10/04/2019**	**10/04/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
bis(2-Ethylhexyl)phthalate (DEHP)	µg/kg	130 U	200 U	350 U
Butyl benzylphthalate (BBP)	µg/kg	57 U	86 U	150 U
Caprolactam	µg/kg	200 U	290 U	510 U
Carbazole	µg/kg	240	220	560
Chrysene	µg/kg	1200	1200	3000 J
Di-n-butylphthalate (DBP)	µg/kg	57 U	2900	150 U
Di-n-octyl phthalate (DnOP)	µg/kg	73 U	110 U	190 U
Dibenz(a,h)anthracene	µg/kg	230	160	510
Dibenzofuran	µg/kg	50 J	95 J	150 J
Diethyl phthalate	µg/kg	81 U	120 U	210 U
Dimethyl phthalate	µg/kg	36 U	54 U	95 U
Fluoranthene	µg/kg	2500	2200	5800
Fluorene	µg/kg	110	130	310
Hexachlorobenzene	µg/kg	7.4 U	11 U	19 U
Hexachlorobutadiene	µg/kg	31 U	47 U	82 U
Hexachlorocyclopentadiene	µg/kg	160 U	240 U	R
Hexachloroethane	µg/kg	23 U	35 U	61 U
Indeno(1,2,3-cd)pyrene	µg/kg	720	530	1400
Isophorone	µg/kg	31 U	47 U	82 U
N-Nitrosodi-n-propylamine	µg/kg	29 U	43 U	75 U
N-Nitrosodiphenylamine	µg/kg	31 U	47 U	82 U
Naphthalene	µg/kg	17 J	47 J	39 J
Nitrobenzene	µg/kg	34 U	51 U	88 U
Pentachlorophenol	µg/kg	150 U	230 U	390 U
Phenanthrene	µg/kg	1400	1700	3800 J
Phenol	µg/kg	21 U	31 U	54 U
Pyrene	µg/kg	2000	1800	5300

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit

Table 2B

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:	**Equipment Blank**
Sample Name:	**EB-100419-001**
Sample Date:	**10/04/2019**

Parameters	**Unit**	
Semivolatile Organic Compounds		
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.52 U
2,4,5-Trichlorophenol	µg/L	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U
2,4-Dichlorophenol	µg/L	0.25 U
2,4-Dimethylphenol	µg/L	0.49 U
2,4-Dinitrophenol	µg/L	5.9 U
2,4-Dinitrotoluene	µg/L	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U
2-Chloronaphthalene	µg/L	0.46 U
2-Chlorophenol	µg/L	0.26 U
2-Methylnaphthalene	µg/L	0.11 U
2-Methylphenol	µg/L	0.20 U
2-Nitroaniline	µg/L	0.49 U
2-Nitrophenol	µg/L	0.54 U
3&4-Methylphenol	µg/L	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.1 U
3-Nitroaniline	µg/L	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.48 U
4-Chloro-3-methylphenol	µg/L	0.28 U
4-Chloroaniline	µg/L	0.30 U
4-Chlorophenyl phenyl ether	µg/L	0.52 U
4-Nitroaniline	µg/L	0.87 U
4-Nitrophenol	µg/L	2.1 U
Acenaphthene	µg/L	0.16 U
Acenaphthylene	µg/L	0.12 U
Acetophenone	µg/L	0.35 U
Anthracene	µg/L	0.13 U
Atrazine	µg/L	0.91 U
Benzaldehyde	µg/L	0.72 U
Benzo(a)anthracene	µg/L	0.16 U
Benzo(a)pyrene	µg/L	0.16 U
Benzo(b)fluoranthene	µg/L	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.43 U
bis(2-Chloroethyl)ether	µg/L	0.38 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.63 U
Caprolactam	µg/L	0.89 U
Carbazole	µg/L	0.47 U
Chrysene	µg/L	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U

Table 2B

Analytical Results Summary
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:	**Equipment Blank**
Sample Name:	**EB-100419-001**
Sample Date:	**10/04/2019**

Parameters	**Unit**	
Semivolatile Organic Compounds		
Di-n-octyl phthalate (DnOP)	µg/L	0.78 U
Dibenz(a,h)anthracene	µg/L	0.14 U
Dibenzofuran	µg/L	0.53 U
Diethyl phthalate	µg/L	3.6 U
Dimethyl phthalate	µg/L	0.49 U
Fluoranthene	µg/L	0.15 U
Fluorene	µg/L	0.16 U
Hexachlorobenzene	µg/L	0.15 U
Hexachlorobutadiene	µg/L	0.52 U
Hexachlorocyclopentadiene	µg/L	1.7 U
Hexachloroethane	µg/L	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U
Isophorone	µg/L	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U
N-Nitrosodiphenylamine	µg/L	0.42 U
Naphthalene	µg/L	0.10 U
Nitrobenzene	µg/L	0.49 U
Pentachlorophenol	µg/L	3.0 U
Phenanthrene	µg/L	0.16 U
Phenol	µg/L	0.12 U
Pyrene	µg/L	0.17 U

Notes:

U - Not detected at the associated reporting limit

Table 3

Analytical Methods
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Semi-Volatile Organic Compounds (SVOCs)	SW-846 8270C	Soil	14	40

Notes:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Results Due to Outlying MS/MSD Results
Quarry Pond Sediment Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
SVOCs	SED-38443-100419-JPF-009	2,4-Dinitrophenol	0	0	NC	10-120	40	R	µg/Kg
		Benzo(a)anthracene	172	-5	49	32-120	37	3200 J	µg/Kg
		Benzo(a)pyrene	189	31	44	35-120	38	2800 J	µg/Kg
		Benzo(b)fluoranthene	255	24	54	27-126	40	3200 J	µg/Kg
		Chrysene	214	23	50	31-121	37	3000 J	µg/Kg
		Hexachlorocyclopentadiene	0	0	NC	10-120	40	R	µg/Kg
		Phenanthrene	252	19	49	31-120	35	3800 J	µg/Kg

Notes:

J - Estimated concentration
MS - Matrix Spike
MSD - Matrix Spike Duplicate
NC - Not Calculated
R - Rejected
RPD - Relative Percent Difference
SVOCs - Semi-volatile Organic Compounds

Memorandum

November 14, 2019

To:	Julian Hayward	Ref. No.:	038443-340
From:	Angela Bown/cs/57-NF	Tel:	513-285-1102
CC:	Brent Ramdial, Valerie Chan		

Subject: **Analytical Results and Full Validation**
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

1. Introduction

This document details a validation of analytical results for water samples collected in support of the Quarry Pond Surface Water Sampling Event at the Moraine, Ohio site during October 2019. Samples were submitted to TestAmerica Laboratories, Inc. (TA) located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2A. Trip blank and field blank results are presented in Table 2B. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, duplicate data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality (QA/QC) samples. The assessment of analytical and in-house data included checks for data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Units 1 and 2, Appendix E – Quality Assurance Project Plan", September 20, 2017

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review", USEPA 540-R-10-011, January 2010

iii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. Most samples were prepared and analyzed within the required holding times. Table 4 presents the sample results that were qualified or rejected due to holding time exceedances.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) and Inductively Coupled Plasma/Mass Spectrometer (ICP/MS)

3.1 Organic Analyses

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

3.2 Inorganic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity, the performance of each ICP/MS instrument used for metals analyses is checked prior to calibration and initiating an analysis sequence through the analysis of a tuning solution.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the method acceptance criteria, indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration - Organic Analyses

4.1 GC/MS

To quantify VOCs and SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is

analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

i) All relative response factors (RRFs) must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent (40.0 percent for compounds that exhibit poor response) or a minimum correlation coefficient (R) and minimum coefficient of determination (R^2) of 0.995 and 0.99, respectively, if linear and quadratic equation calibration curves are used

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

4.2 GC

To quantify pesticides, the performance evaluation mixture (PEM) is analyzed at the beginning and end of the initial calibration sequence and throughout the analytical sequence. The results of these analyses are used to evaluate dichlorodiphenyltrichloroethane (DDT)/endrin breakdown, using the method degradation criteria of <15 percent. PEM standards were analyzed at the required frequency throughout sample analysis and all method performance criteria were met.

4.2.1 Internal Standard Calibration – PCBs and Organochlorine Pesticides

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Polychlorinated biphenyls (PCBs) and organochlorine pesticides were calibrated with a dual column analysis using internal standardization. Five peaks, representing five congeners, were used for the analysis of each Aroclor with a separate curve fitted to the calibration data for each congener. A calibration curve consisting of a minimum of five concentration levels was analyzed for all single component compounds of interest. Linearity of the calibration curves are evaluated against the following criteria:

i) The percent relative standard deviation (%RSD) values of the response factors must not exceed 20.0 percent

ii) A minimum correlation coefficient (R) and minimum coefficient of determination (R^2) of 0.995 and 0.99, respectively, if linear and quadratic equation calibration curves are used

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time, peak resolution, and linearity criteria were satisfied as specified in the method.

4.2.2 External Standard Calibration – Fumigants and Herbicides

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Initially, a calibration curve consisting of a minimum of five concentration levels is analyzed for all single component compounds of interest. Linearity of the calibration

curve is acceptable if all RSD values are less than or equal to 20.0 percent or if the coefficient of determination (R^2) is 0.990 or greater for linear regression curves.

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time, peak resolution, and linearity criteria were satisfied as specified in the method.

5. Initial Calibration – Inorganic Analyses

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For ICP/MS analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury atomic absorption (AA) analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve, and resulting correlation coefficients (R) must be 0.995 or greater. For instrumental general chemistry analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve, and resulting correlation coefficients (R) must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

Analytical Method	Parameter	Control Limits
ICP/MS	Metals	90 - 110%
Cold Vapor AA	Mercury	80 - 120%
Instrumental General Chemistry	Cyanide and Anions	85 - 115% or laboratory established limits

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that the instrumentation used for metals and general chemistry analyses were properly calibrated prior to sample analysis.

6. Continuing Calibration - Organic Analyses

6.1 GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) All RRF values must be greater than or equal to 0.050 (greater than or equal to 0.010 for compounds that exhibit poor response)

ii) Percent difference (%D) values must not exceed 25.0 percent (40.0 percent for compounds that exhibit poor response)

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability with the exception of the sample results presented with qualifiers in Table 5.

6.2 GC

To ensure that the calibration of the instrument for organic analyses by GC is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. To evaluate the continued linearity of the calibration, %D values are calculated for each compound. As specified in the methods, all %D values should not exceed 15 percent (20%D for herbicides and organochlorine pesticides). To ensure that compound retention times do not vary over the analysis period, all retention times for continuing calibration compounds must fall within the established retention time windows.

All continuing calibration standards were analyzed at the required frequency. All %D values and compound retention times met the above criteria indicating acceptable instrument calibration throughout the analysis period with the exception of herbicides. The qualified sample results are presented in Table 5.

7. Continuing Calibration - Inorganic Analyses

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

8. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

8.1 Organic Analyses

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

8.2 Inorganic Analyses

ICBs, CCBs, and method blanks were analyzed for all inorganic parameters. Low levels of mercury were detected in some CCBs. Table 6 presents the sample results that were qualified due to mercury concentrations that were similar to the CCBs. The remaining blank samples were non-detect for the analytes of interest.

9. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for organic determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory criteria.

10. Internal Standards (IS) Analyses

IS data were evaluated for all VOC, SVOC, PCB, Pesticide, and ICP/MS metals sample analyses.

10.1 Organics Analyses

To ensure that changes in the GC/MS and GC sensitivity and response do not affect sample analysis results IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

i) The retention time of the IS must not vary more than ±30 seconds from the associated calibration standard

ii) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard

All organic IS recoveries and retention times met the above criteria.

10.2 Inorganic Analyses

IS elements were added to all samples prior to metals analysis by ICP/MS. Overall instrument stability and performance for metals analyses were monitored using the IS intensity data. IS recoveries were assessed using control limits of 60-125 percent.

All inorganic IS recoveries were within the acceptance limits.

11. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

High LCS/LCSD recoveries and/or RPDs do not affect the associated non-detect sample results.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

11.1 Organic Analyses

The LCS or LCS/LCSD contained all compounds of interest or the compounds specified in the method. All LCS recoveries and RPDs were within the laboratory control limits demonstration acceptable analytical accuracy and precision.

11.2 Inorganic Analyses

The LCS or LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits demonstrating acceptable analytical accuracy and precision.

12. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

If only the MS or MSD recovery was outside of control limits, no qualification of the data were performed based on the acceptable recovery of the companion spike and the acceptable RPD. High MS/MSD recoveries and/or RPDs do not affect the associated non-detect sample results.

MS/MSD analyses were performed as specified in Table 1.

12.1 Organic Analyses

The MS/MSD samples were spiked with all compounds of interest or the compounds specified in the method. All percent recoveries and RPD values, if applicable, were within the laboratory control limits, or did not warrant qualifications, and demonstrated acceptable analytical accuracy and precision with the exception of 4-chloroaniline and caprolactam. Both compounds exhibited excessively low recoveries (<10%). The associated sample results were rejected in Table 7.

12.2 Inorganic Analyses

The MS or MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values, if applicable, were within the laboratory control limits, or did not warrant qualifications, and demonstrated acceptable analytical accuracy and precision.

13. ICP/MS Serial Dilution

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of 1 per 20 investigative samples or at least 1 per analytical batch must be analyzed at a five-fold dilution. For samples with sufficient analyte concentrations (>50 times the method detection limit), the serial dilution results must agree within 10 percent of the original results.

A serial dilution was performed on each MS/MSD sample. All results met the criteria above.

14. ICP Interference Check Sample Analysis (ICS)

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning and end of each sample analysis period. The ICSs are evaluated against recovery control limits in the "Guidelines" of 80 to 120 percent.

ICS analysis results were evaluated for all samples using the criteria in the "Guidelines". All ICS recoveries and results were acceptable.

15. Field QA/QC Samples

The field QA/QC consisted of six trip blank samples, one field blank sample, and two field duplicate sample sets.

15.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, six trip blanks were submitted to the laboratory for VOC analysis. All results were non-detect for the analytes of interest.

15.2 Field Blank Sample Analysis

To assess ambient conditions at the site and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 1. Low levels of beryllium and thallium were detected in the field blank sample. Table 8 presents the sample results that were qualified as non-detect due to analyte concentrations in the field blank sample. All remaining results were non-detect for the analytes of interest.

15.3 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value for water samples.

Most field duplicate results were within acceptable agreement demonstrating acceptable sampling and analytical precision. Table 9 presents the qualified sample results.

16. Total versus Dissolved Results

Most dissolved metals results were less than the total results or were within the normal variability of the method (20%D). Table 10 presents the sample results that were qualified due to discrepancies between the total and dissolved results.

17. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte adjusted for specific sample dilutions and volumes. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Table 2A unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the sample specific MDL in Table 2A.

18. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

Pesticide and PCB analyses were performed using dual column analyses. All results showed good correlation between the two columns (<40 RPD).

19. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2A are acceptable with the specific qualifications and exceptions noted herein.

Table 1

Sample Collection and Analysis Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

					Analysis/Parameters													
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**VOCs**	**Fumigants**	**SVOCs**	**Pesticides**	**PCBs**	**Herbicides**	**Total & Dissolved Metals**	**Low Level Mercury**	**Anions**	**Total Cyanide**	**Sulfide**	**Total Dissolved Soilds**	**Hardness**	**Comments**
SW-38443-100219-JPF-001	SW-1	Water	10/02/2019	09:25	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD
SW-38443-100219-JPF-002	SW-1	Water	10/02/2019	09:30	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100219-JPF-003	SW-2	Water	10/02/2019	11:20	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD
SW-38443-100219-JPF-004	SW-2	Water	10/02/2019	11:30	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100219-JPF-005	SW-3	Water	10/02/2019	12:25	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD
SW-38443-100219-JPF-006	SW-3	Water	10/02/2019	12:55	X	X	X	X	X	X	X	X	X	X	X	X	X	
TB-100219-001	-	Water	10/02/2019	-		X												Trip Blank
TB-100219-003	-	Water	10/02/2019	-	X													Trip Blank
TB-100219-004	-	Water	10/02/2019	-								X						Trip Blank
SW-38443-100219-JPF-007	SW-10	Water	10/02/2019	14:30	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100219-JPF-008	SW-10	Water	10/02/2019	14:30	X	X	X	X	X	X	X	X	X	X	X	X	X	FD(SW-38443-100219-JPF-007)
SW-38443-100219-JPF-009	SW-9	Water	10/02/2019	15:40	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-010	SW-8	Water	10/03/2019	07:55	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD
SW-38443-100319-JPF-011	SW-8	Water	10/03/2019	08:00	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-012	SW-7	Water	10/03/2019	08:45	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-013	SW-7	Water	10/03/2019	08:55	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-014	SW-6	Water	10/03/2019	09:55	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD/DUP
SW-38443-100319-JPF-015	SW-5	Water	10/03/2019	11:20	X	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD
SW-38443-100319-JPF-016	SW-4	Water	10/03/2019	12:30	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-017	SW-4	Water	10/03/2019	12:30	X	X	X	X	X	X	X	X	X	X	X	X	X	FD(SW-38443-100319-JPF-016)
SW-38443-100319-JPF-018	SW-11	Water	10/03/2019	13:25	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-019	SW-12	Water	10/03/2019	14:05	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-38443-100319-JPF-020	-	Water	10/03/2019	15:00	X	X	X	X	X	X	X	X	X	X	X	X	X	Field Blank
TB-100319-005	-	Water	10/03/2019	-		X												Trip Blank
TB-100319-007	-	Water	10/03/2019	-	X													Trip Blank
TB-100319-008	-	Water	10/03/2019	-								X						Trip Blank

Notes:

--	- Not applicable
DUP	- Laboratory Duplicate
FD	- Field Duplicate sample of sample in parenthesis
ft bgs	- Feet below ground surface
MS/MSD	- Matrix Spike/Matrix Spike Duplicate
PCBs	- Polychlorinated Biphenyls
SVOCs	- Semi-volatile Organic Compounds
VOCs	- Volatile Organic Compounds

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 U	5.4 U
Benzene	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 U	0.76 U
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U	0.23 J
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U	1.4
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.14 J	0.10 U	0.35 J
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	1.1 U	0.54 U	0.95 U	0.55 U
2,4,5-Trichlorophenol	µg/L	4.0 U	1.9 U	3.4 U	2.0 U
2,4,6-Trichlorophenol	µg/L	3.6 U	1.8 U	3.1 U	1.8 U
2,4-Dichlorophenol	µg/L	0.52 U	0.26 U	0.45 U	0.26 U
2,4-Dimethylphenol	µg/L	1.0 U	0.51 U	0.89 U	0.52 U
2,4-Dinitrophenol	µg/L	12 U	6.1 U	11 U	6.2 U
2,4-Dinitrotoluene	µg/L	4.1 U	2.0 U	3.6 U	2.1 U
2,6-Dinitrotoluene	µg/L	4.3 U	2.1 U	3.7 U	2.1 U
2-Chloronaphthalene	µg/L	0.97 U	0.47 U	0.83 U	0.48 U
2-Chlorophenol	µg/L	0.55 U	0.27 U	0.47 U	0.27 U
2-Methylnaphthalene	µg/L	0.22 U	0.11 U	0.19 U	0.11 U
2-Methylphenol	µg/L	0.42 U	0.20 U	0.36 U	0.21 U
2-Nitroaniline	µg/L	1.0 U	0.50 U	0.88 U	0.51 U
2-Nitrophenol	µg/L	1.1 U	0.55 U	0.97 U	0.56 U
3&4-Methylphenol	µg/L	0.38 U	0.19 U	0.33 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	2.3 U	1.1 U	2.0 U	1.2 U
3-Nitroaniline	µg/L	1.1 U	0.55 U	0.98 U	0.57 U
4,6-Dinitro-2-methylphenol	µg/L	5.6 U	2.8 U	4.9 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	1.0 U	0.49 U	0.86 U	0.50 U
4-Chloro-3-methylphenol	µg/L	0.59 U	0.29 U	0.51 U	0.30 U
4-Chloroaniline	µg/L	0.63 U	0.31 U	0.54 U	0.32 U
4-Chlorophenyl phenyl ether	µg/L	1.1 U	0.54 U	0.95 U	0.55 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Nitroaniline	µg/L	1.8 U	0.90 U	1.6 U	0.92 U
4-Nitrophenol	µg/L	4.3 U	2.1 U	3.7 U	2.2 U
Acenaphthene	µg/L	0.34 U	0.17 U	0.30 U	0.17 U
Acenaphthylene	µg/L	0.25 U	0.12 U	0.22 U	0.13 U
Acetophenone	µg/L	0.73 U	0.36 U	0.63 U	0.37 U
Anthracene	µg/L	0.27 U	0.13 U	0.23 U	0.14 U
Atrazine	µg/L	1.9 U	0.93 U	1.6 U	0.95 U
Benzaldehyde	µg/L	1.5 U	0.74 U	1.3 U	0.76 U
Benzo(a)anthracene	µg/L	0.34 U	0.17 U	0.29 U	0.17 U
Benzo(a)pyrene	µg/L	0.35 U	0.17 U	0.30 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.31 U	0.15 U	0.27 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.36 U	0.17 U	0.31 U	0.18 U
Benzo(k)fluoranthene	µg/L	0.28 U	0.14 U	0.24 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.98 U	0.48 U	0.85 U	0.49 U
bis(2-Chloroethoxy)methane	µg/L	0.91 U	0.45 U	0.78 U	0.46 U
bis(2-Chloroethyl)ether	µg/L	0.80 U	0.39 U	0.69 U	0.40 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	4.4 U	2.2 U	3.8 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	1.3 U	0.65 U	1.1 U	0.67 U
Caprolactam	µg/L	1.9 U	0.92 U	1.6 U	0.93 U
Carbazole	µg/L	0.98 U	0.48 U	0.84 U	0.49 U
Chrysene	µg/L	0.37 U	0.18 U	0.32 U	0.19 U
Di-n-butylphthalate (DBP)	µg/L	3.6 U	1.8 U	3.1 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	1.6 U	0.80 U	1.4 U	0.82 U
Dibenz(a,h)anthracene	µg/L	0.30 U	0.15 U	0.26 U	0.15 U
Dibenzofuran	µg/L	1.1 U	0.55 U	0.97 U	0.56 U
Diethyl phthalate	µg/L	7.6 U	3.7 U	6.6 U	3.8 U
Dimethyl phthalate	µg/L	1.0 U	0.50 U	0.89 U	0.52 U
Fluoranthene	µg/L	0.32 U	0.16 U	0.28 U	0.16 U
Fluorene	µg/L	0.34 U	0.17 U	0.29 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Hexachlorobenzene	µg/L	0.32 U	0.16 U	0.28 U	0.16 U
Hexachlorobutadiene	µg/L	1.1 U	0.53 U	0.94 U	0.54 U
Hexachlorocyclopentadiene	µg/L	3.5 U	1.7 U	3.0 U	1.8 U
Hexachloroethane	µg/L	0.79 U	0.39 U	0.68 U	0.40 U
Indeno(1,2,3-cd)pyrene	µg/L	0.27 U	0.13 U	0.23 U	0.14 U
Isophorone	µg/L	0.65 U	0.32 U	0.56 U	0.32 U
N-Nitrosodi-n-propylamine	µg/L	0.51 U	0.25 U	0.44 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.88 U	0.43 U	0.76 U	0.44 U
Naphthalene	µg/L	0.22 U	0.11 U	0.19 U	0.11 U
Nitrobenzene	µg/L	1.0 U	0.50 U	0.89 U	0.51 U
Pentachlorophenol	µg/L	6.2 U	3.0 U	5.4 U	3.1 U
Phenanthrene	µg/L	0.33 U	0.16 U	0.29 U	0.17 U
Phenol	µg/L	0.26 U	0.13 U	0.22 U	0.32 J
Pyrene	µg/L	0.35 U	0.17 U	0.30 U	0.18 U
Herbicides					
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 U	2.2 U
PCBs					
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	0.055 U	0.054 U	0.054 U
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	0.056 U	0.055 U	0.055 U
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	0.072 U	0.071 U	0.071 U
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	0.074 U	0.073 U	0.073 U
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	0.049 U	0.048 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	0.039 U	0.038 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	0.045 U	0.044 U	0.044 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Pesticides					
4,4'-DDD	µg/L	0.0050 U	0.0052 U	0.0051 U	0.25 U
4,4'-DDE	µg/L	0.0041 U	0.0042 U	0.0041 U	0.0041 U
4,4'-DDT	µg/L	0.0046 U	0.0047 U	0.0046 U	0.23 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0023 U	0.0023 U
alpha-BHC	µg/L	0.0019 U	0.0020 U	0.0019 U	0.096 U
alpha-Chlordane	µg/L	0.0030 U	0.0031 U	0.0031 U	0.0031 U
beta-BHC	µg/L	0.0044 U	0.0045 U	0.0044 U	0.0044 U
delta-BHC	µg/L	0.0041 U	0.0042 U	0.0041 U	0.21 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan I	µg/L	0.0035 U	0.0036 U	0.0036 U	0.0036 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan sulfate	µg/L	0.0035 U	0.0036 U	0.0036 U	0.18 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0024 U	0.0024 U
Endrin aldehyde	µg/L	0.0044 U	0.0045 U	0.0044 U	0.22 U
Endrin ketone	µg/L	0.0038 U	0.0039 U	0.0038 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0024 U	0.12 U
gamma-Chlordane	µg/L	0.0048 U	0.0049 U	0.0048 U	0.0048 U
Heptachlor	µg/L	0.0031 U	0.0032 U	0.0032 U	0.0032 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0045 U	0.0046 U	0.0045 U	0.0045 U
Toxaphene	µg/L	0.055 U	0.057 U	0.056 U	0.056 U
Metals					
Mercury	ng/L	0.46 U	0.46 U	0.14 U	1.8
Aluminum	µg/L	34 U	34 U	34 U	49 J
Aluminum (dissolved)	µg/L	34 U	34 U	34 U	34 U
Antimony	µg/L	0.78 J	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.92 J	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	1.9 J	2.7 J	2.0 J	5.8
Arsenic (dissolved)	µg/L	1.9 J	2.3 J	1.6 J	4.8 J
Barium	µg/L	88	93	87	230
Barium (dissolved)	µg/L	87	82	92	230
Beryllium	µg/L	0.57 J	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.78 J	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Metals					
Calcium	µg/L	36000	49000	36000	76000
Calcium (dissolved)	µg/L	36000	49000	37000	77000
Chromium	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U	0.67 J
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U	0.42 J
Copper	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	150	47 U	3400
Iron (dissolved)	µg/L	47 U	47 U	47 U	3400
Lead	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	25000	26000	25000	31000
Magnesium (dissolved)	µg/L	24000	26000	25000	31000
Manganese	µg/L	4.1 J	50	3.6 J	3000
Manganese (dissolved)	µg/L	3.5 J	8.1	2.1 U	2800
Mercury	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U	1.6 J
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U	1.5 U
Potassium	µg/L	5200	5400	5100	6100
Potassium (dissolved)	µg/L	5200	5300	5300	6000
Selenium	µg/L	0.89 U	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	1.1 J	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U	0.053 U
Sodium	µg/L	18000	19000	18000	24000
Sodium (dissolved)	µg/L	18000	19000	19000	24000
Thallium	µg/L	0.55 J	0.23 J	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.73 J	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U	0.89 J
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U	15 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-1**	**SW-1**	**SW-2**	**SW-2**
	Sample Name:	**SW-38443-100219-JPF-001**	**SW-38443-100219-JPF-002**	**SW-38443-100219-JPF-003**	**SW-38443-100219-JPF-004**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
General Chemistry					
Chloride	mg/L	--	--	--	--
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	--	--	--	--
Hardness	mg/L	190	230	190	320
Hardness, carbonate	mg/L	91	120	90	190
Hardness, magnesium	mg/L	100	110	100	130
Sulfate	mg/L	--	--	--	--
Sulfide	mg/L	0.58 U	0.58 U	0.80 J	0.58 U
Total dissolved solids (TDS)	mg/L	250	280	230	390
Chloride	µg/L	27000	28000	27000	34000
Fluoride	µg/L	180	180	170	180
Nitrate (as N)	µg/L	R	R	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U	14 U
Sulfate	µg/L	20000	19000	20000	2700
Fumigant					
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 U	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.53 U	0.55 U	0.53 U
2,4,5-Trichlorophenol	µg/L	1.9 U	2.0 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	1.8 U	1.7 U
2,4-Dichlorophenol	µg/L	0.25 U	0.26 U	0.25 U
2,4-Dimethylphenol	µg/L	0.50 U	0.51 U	0.50 U
2,4-Dinitrophenol	µg/L	6.0 U	6.1 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U	2.1 U	2.1 U
2-Chloronaphthalene	µg/L	0.46 U	0.48 U	0.47 U
2-Chlorophenol	µg/L	0.26 U	0.27 U	0.27 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.21 U	0.20 U
2-Nitroaniline	µg/L	0.49 U	0.50 U	0.50 U
2-Nitrophenol	µg/L	0.54 U	0.56 U	0.55 U
3&4-Methylphenol	µg/L	0.18 U	0.19 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	0.54 U	0.56 U	0.55 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	2.8 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.49 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.28 U	0.29 U	0.29 U
4-Chloroaniline	µg/L	0.30 U	0.31 U	0.31 U
4-Chlorophenyl phenyl ether	µg/L	0.53 U	0.55 U	0.53 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitroaniline	µg/L	0.88 U	0.91 U	0.89 U
4-Nitrophenol	µg/L	2.1 U	2.2 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.12 U
Acetophenone	µg/L	0.35 U	0.36 U	0.36 U
Anthracene	µg/L	0.13 U	0.13 U	0.13 U
Atrazine	µg/L	0.92 U	0.94 U	0.92 U
Benzaldehyde	µg/L	0.73 U	0.75 U	0.74 U
Benzo(a)anthracene	µg/L	0.16 U	0.17 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.18 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U	0.14 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U	0.49 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	0.44 U	0.45 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.39 U	0.40 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U	2.2 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.64 U	0.66 U	0.65 U
Caprolactam	µg/L	0.90 U	0.92 U	0.91 U
Carbazole	µg/L	0.47 U	0.49 U	0.48 U
Chrysene	µg/L	0.18 U	0.18 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U	1.8 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.79 U	0.81 U	0.80 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.54 U	0.56 U	0.54 U
Diethyl phthalate	µg/L	3.7 U	3.8 U	3.7 U
Dimethyl phthalate	µg/L	0.50 U	0.51 U	0.50 U
Fluoranthene	µg/L	0.15 U	0.16 U	0.16 U
Fluorene	µg/L	0.16 U	0.17 U	0.16 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Hexachlorobenzene	µg/L	0.15 U	0.16 U	0.16 U
Hexachlorobutadiene	µg/L	0.52 U	0.54 U	0.53 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.39 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.13 U
Isophorone	µg/L	0.31 U	0.32 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.42 U	0.44 U	0.43 U
Naphthalene	µg/L	0.10 U	0.11 U	0.35
Nitrobenzene	µg/L	0.49 U	0.51 U	0.50 U
Pentachlorophenol	µg/L	3.0 U	3.1 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.17 U	0.16 U
Phenol	µg/L	0.12 U	0.13 U	0.12 U
Pyrene	µg/L	0.17 U	0.17 U	0.17 U
Herbicides				
2,4,5-T	µg/L	0.57 U	0.57 U	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 U	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 U	2.2 UJ
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	0.054 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	0.055 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	0.072 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	0.074 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	0.049 U	0.050 U
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	0.039 U	0.040 U
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	0.045 U	0.046 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Pesticides				
4,4'-DDD	µg/L	0.0050 U	0.0051 U	0.0052 U
4,4'-DDE	µg/L	0.0041 U	0.0042 U	0.0043 U
4,4'-DDT	µg/L	0.0046 U	0.0047 U	0.0048 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0024 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0020 U
alpha-Chlordane	µg/L	0.0030 U	0.0031 U	0.0032 U
beta-BHC	µg/L	0.0044 U	0.0045 U	0.0046 U
delta-BHC	µg/L	0.0041 U	0.0042 U	0.0043 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan I	µg/L	0.0035 U	0.0036 U	0.0037 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan sulfate	µg/L	0.0035 U	0.0036 U	0.0037 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0025 U
Endrin aldehyde	µg/L	0.0044 U	0.0045 U	0.0046 U
Endrin ketone	µg/L	0.0038 U	0.0039 U	0.0040 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0025 U
gamma-Chlordane	µg/L	0.0048 U	0.0049 U	0.0050 U
Heptachlor	µg/L	0.0031 U	0.0032 U	0.0033 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0026 U
Methoxychlor	µg/L	0.0045 U	0.0046 U	0.0047 U
Toxaphene	µg/L	0.055 U	0.056 U	0.058 U
Metals				
Mercury	ng/L	0.14 U	0.14 U	0.14 U
Aluminum	µg/L	34 U	38 J	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	1.7 J	2.1 J	1.7 J
Arsenic (dissolved)	µg/L	1.8 J	2.0 J	1.8 J
Barium	µg/L	88	88	87
Barium (dissolved)	µg/L	93	88	90
Beryllium	µg/L	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
Metals				
Calcium	µg/L	36000	39000	36000
Calcium (dissolved)	µg/L	38000	39000	37000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	150	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	24000	25000	24000
Magnesium (dissolved)	µg/L	26000	26000	25000
Manganese	µg/L	4.4 J	20	4.9 J
Manganese (dissolved)	µg/L	2.1 U	2.5 J	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U
Potassium	µg/L	5100	5200	5100
Potassium (dissolved)	µg/L	5400	5400	5200
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	18000	18000	17000
Sodium (dissolved)	µg/L	19000	19000	18000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-3**	**SW-3**	**SW-4**
	Sample Name:	**SW-38443-100219-JPF-005**	**SW-38443-100219-JPF-006**	**SW-38443-100319-JPF-016**
	Sample Date:	**10/02/2019**	**10/02/2019**	**10/03/2019**
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	--	--	27
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	--	--	0.16
Hardness	mg/L	190	200	190
Hardness, carbonate	mg/L	90	97	90
Hardness, magnesium	mg/L	100	100	99
Sulfate	mg/L	--	--	20
Sulfide	mg/L	0.60 J	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	240	240	250
Chloride	µg/L	27000	27000	--
Fluoride	µg/L	170	170	--
Nitrate (as N)	µg/L	R	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U
Sulfate	µg/L	20000	19000	--
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 U	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 U	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.52 U	0.53 U	0.52 U
2,4,5-Trichlorophenol	µg/L	1.9 U	1.9 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	1.7 U	1.7 U
2,4-Dichlorophenol	µg/L	0.25 U	0.25 U	0.25 U
2,4-Dimethylphenol	µg/L	0.49 U	0.50 U	0.49 U
2,4-Dinitrophenol	µg/L	5.9 U	6.0 U	5.9 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U	2.1 U	2.0 U
2-Chloronaphthalene	µg/L	0.46 U	0.47 U	0.46 U
2-Chlorophenol	µg/L	0.26 U	0.27 U	0.26 U
2-Methylnaphthalene	µg/L	0.11 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.20 U	0.20 U
2-Nitroaniline	µg/L	0.49 U	0.50 U	0.49 U
2-Nitrophenol	µg/L	0.54 U	0.55 U	0.54 U
3&4-Methylphenol	µg/L	0.18 U	0.19 U	0.18 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	0.54 U	0.55 U	0.54 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	2.7 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.48 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.28 U	0.29 U	0.28 U
4-Chloroaniline	µg/L	0.30 U	0.31 U	R
4-Chlorophenyl phenyl ether	µg/L	0.52 U	0.53 U	0.52 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitroaniline	µg/L	0.87 U	0.89 U	0.87 U
4-Nitrophenol	µg/L	2.1 U	2.1 U	2.1 U
Acenaphthene	µg/L	0.16 U	0.17 U	0.16 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.12 U
Acetophenone	µg/L	0.35 U	0.36 U	0.35 U
Anthracene	µg/L	0.13 U	0.13 U	0.13 U
Atrazine	µg/L	0.91 U	0.92 U	0.91 U
Benzaldehyde	µg/L	0.72 U	0.74 U	0.72 U
Benzo(a)anthracene	µg/L	0.16 U	0.17 U	0.16 U
Benzo(a)pyrene	µg/L	0.16 U	0.17 U	0.16 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U	0.14 U	0.13 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U	0.48 U	0.47 U
bis(2-Chloroethoxy)methane	µg/L	0.43 U	0.44 U	0.43 U
bis(2-Chloroethyl)ether	µg/L	0.38 U	0.39 U	0.38 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U	2.2 U	2.1 U
Butyl benzylphthalate (BBP)	µg/L	0.63 U	0.65 U	0.63 U
Caprolactam	µg/L	0.89 U	0.91 U	R
Carbazole	µg/L	0.47 U	0.48 U	0.47 U
Chrysene	µg/L	0.18 U	0.18 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U	1.8 U	1.7 U
Di-n-octyl phthalate (DnOP)	µg/L	0.78 U	0.80 U	0.78 U
Dibenz(a,h)anthracene	µg/L	0.14 U	0.15 U	0.14 U
Dibenzofuran	µg/L	0.53 U	0.54 U	0.53 U
Diethyl phthalate	µg/L	3.6 U	3.7 U	3.6 U
Dimethyl phthalate	µg/L	0.49 U	0.50 U	0.49 U
Fluoranthene	µg/L	0.15 U	0.16 U	0.15 U
Fluorene	µg/L	0.16 U	0.16 U	0.16 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Semivolatile Organic Compounds				
Hexachlorobenzene	µg/L	0.15 U	0.16 U	0.15 U
Hexachlorobutadiene	µg/L	0.52 U	0.53 U	0.52 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.38 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.13 U
Isophorone	µg/L	0.31 U	0.31 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U	0.25 U	0.24 U
N-Nitrosodiphenylamine	µg/L	0.42 U	0.43 U	0.42 U
Naphthalene	µg/L	0.25	0.34	0.10 U
Nitrobenzene	µg/L	0.49 U	0.50 U	0.49 U
Pentachlorophenol	µg/L	3.0 U	3.0 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.16 U	0.16 U
Phenol	µg/L	0.12 U	0.12 U	0.12 U
Pyrene	µg/L	0.17 U	0.17 U	0.17 U
Herbicides				
2,4,5-T	µg/L	0.57 UJ	0.57 UJ	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 UJ	0.43 UJ	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 UJ	2.2 UJ	2.2 UJ
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.054 U	0.054 U	0.053 U
Aroclor-1221 (PCB-1221)	µg/L	0.055 U	0.055 U	0.054 U
Aroclor-1232 (PCB-1232)	µg/L	0.072 U	0.071 U	0.070 U
Aroclor-1242 (PCB-1242)	µg/L	0.074 U	0.073 U	0.072 U
Aroclor-1248 (PCB-1248)	µg/L	0.049 U	0.048 U	0.048 U
Aroclor-1254 (PCB-1254)	µg/L	0.039 U	0.038 U	0.038 U
Aroclor-1260 (PCB-1260)	µg/L	0.045 U	0.044 U	0.044 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Pesticides				
4,4'-DDD	µg/L	0.0051 U	0.0051 U	0.0050 U
4,4'-DDE	µg/L	0.0042 U	0.0041 U	0.0041 U
4,4'-DDT	µg/L	0.0047 U	0.0046 U	0.0046 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0023 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0019 U
alpha-Chlordane	µg/L	0.0031 U	0.0031 U	0.0030 U
beta-BHC	µg/L	0.0045 U	0.0044 U	0.0044 U
delta-BHC	µg/L	0.0042 U	0.0041 U	0.0041 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0022 U
Endosulfan I	µg/L	0.0036 U	0.0036 U	0.0035 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0022 U
Endosulfan sulfate	µg/L	0.0036 U	0.0036 U	0.0035 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0024 U
Endrin aldehyde	µg/L	0.0045 U	0.0044 U	0.0044 U
Endrin ketone	µg/L	0.0039 U	0.0038 U	0.0038 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0024 U
gamma-Chlordane	µg/L	0.0049 U	0.0048 U	0.0048 U
Heptachlor	µg/L	0.0032 U	0.0032 U	0.0031 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0046 U	0.0045 U	0.0045 U
Toxaphene	µg/L	0.056 U	0.056 U	0.055 U
Metals				
Mercury	ng/L	0.25 U	0.14 U	0.27 J
Aluminum	µg/L	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.82 J
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.83 J
Arsenic	µg/L	1.8 J	1.7 J	1.8 J
Arsenic (dissolved)	µg/L	1.5 J	1.9 J	1.6 J
Barium	µg/L	90	88	89
Barium (dissolved)	µg/L	86	89	85
Beryllium	µg/L	0.31 U	0.31 U	0.63 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.72 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Metals				
Calcium	µg/L	36000	36000	36000
Calcium (dissolved)	µg/L	35000	36000	35000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	1.1 J	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	47 U	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	25000	24000	24000
Magnesium (dissolved)	µg/L	24000	24000	24000
Manganese	µg/L	4.9 J	5.8	3.7 J
Manganese (dissolved)	µg/L	2.1 U	2.9 J	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U
Potassium	µg/L	5100	5000	5000
Potassium (dissolved)	µg/L	4900	5000	4900
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	1.0 J
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	18000	18000	18000
Sodium (dissolved)	µg/L	17000	17000	17000
Thallium	µg/L	0.20 U	0.20 U	0.82 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.75 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 J	15 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-4**	**SW-5**	**SW-6**
	Sample Name:	**SW-38443-100319-JPF-017**	**SW-38443-100319-JPF-015**	**SW-38443-100319-JPF-014**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	27	27	27
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.17	0.17	0.16
Hardness	mg/L	190	190	190
Hardness, carbonate	mg/L	91	90	90
Hardness, magnesium	mg/L	100	100	98
Sulfate	mg/L	20	20	20
Sulfide	mg/L	0.58 U	0.93 J	0.58 U
Total dissolved solids (TDS)	mg/L	260	250	260
Chloride	µg/L	--	--	--
Fluoride	µg/L	--	--	--
Nitrate (as N)	µg/L	R	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U
Sulfate	µg/L	--	--	--
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 UJ	5.4 UJ	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 UJ	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.53 U	0.53 U	0.53 U
2,4,5-Trichlorophenol	µg/L	1.9 U	1.9 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	1.7 U	1.7 U
2,4-Dichlorophenol	µg/L	0.25 U	0.25 U	0.25 U
2,4-Dimethylphenol	µg/L	0.50 U	0.50 U	0.50 U
2,4-Dinitrophenol	µg/L	6.0 U	6.0 U	6.0 U
2,4-Dinitrotoluene	µg/L	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U	2.1 U	2.1 U
2-Chloronaphthalene	µg/L	0.46 U	0.47 U	0.47 U
2-Chlorophenol	µg/L	0.26 U	0.27 U	0.27 U
2-Methylnaphthalene	µg/L	0.15 J	0.11 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.20 U	0.20 U
2-Nitroaniline	µg/L	0.49 U	0.50 U	0.50 U
2-Nitrophenol	µg/L	0.54 U	0.55 U	0.55 U
3&4-Methylphenol	µg/L	0.18 U	0.19 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	0.54 U	0.55 U	0.55 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	2.7 U	2.7 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.48 U	0.48 U
4-Chloro-3-methylphenol	µg/L	0.28 U	0.29 U	0.29 U
4-Chloroaniline	µg/L	0.30 U	0.31 U	0.31 U
4-Chlorophenyl phenyl ether	µg/L	0.53 U	0.53 U	0.53 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitroaniline	µg/L	0.88 U	0.89 U	0.89 U
4-Nitrophenol	µg/L	2.1 U	2.1 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.12 U	0.12 U
Acetophenone	µg/L	0.35 U	0.36 U	0.36 U
Anthracene	µg/L	0.13 U	0.13 U	0.13 U
Atrazine	µg/L	0.92 U	0.92 U	0.92 U
Benzaldehyde	µg/L	0.73 U	0.74 U	0.74 U
Benzo(a)anthracene	µg/L	0.16 U	0.17 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.17 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U	0.14 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U	0.48 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	0.44 U	0.44 U	0.44 U
bis(2-Chloroethyl)ether	µg/L	0.39 U	0.39 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U	2.2 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.64 U	0.65 U	0.65 U
Caprolactam	µg/L	0.90 U	0.91 U	0.91 U
Carbazole	µg/L	0.47 U	0.48 U	0.48 U
Chrysene	µg/L	0.18 U	0.18 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U	1.8 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.79 U	0.80 U	0.80 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.15 U	0.15 U
Dibenzofuran	µg/L	0.54 U	0.54 U	0.54 U
Diethyl phthalate	µg/L	3.7 U	3.7 U	3.7 U
Dimethyl phthalate	µg/L	0.50 U	0.50 U	0.50 U
Fluoranthene	µg/L	0.15 U	0.16 U	0.16 U
Fluorene	µg/L	0.16 U	0.16 U	0.16 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Hexachlorobenzene	µg/L	0.15 U	0.16 U	0.16 U
Hexachlorobutadiene	µg/L	0.52 U	0.53 U	0.53 U
Hexachlorocyclopentadiene	µg/L	1.7 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.38 U	0.38 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.13 U	0.13 U
Isophorone	µg/L	0.31 U	0.31 U	0.31 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.42 U	0.43 U	0.43 U
Naphthalene	µg/L	1.1	1.1	0.11 U
Nitrobenzene	µg/L	0.49 U	0.50 U	0.50 U
Pentachlorophenol	µg/L	3.0 U	3.0 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.16 U	0.16 U
Phenol	µg/L	0.12 U	0.12 U	0.12 U
Pyrene	µg/L	0.17 U	0.17 U	0.17 U
Herbicides				
2,4,5-T	µg/L	0.57 UJ	0.57 UJ	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 UJ	0.43 UJ	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 UJ	2.2 UJ	2.2 UJ
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.054 U	0.054 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.055 U	0.055 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.072 U	0.072 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.074 U	0.074 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.049 U	0.049 U	0.050 U
Aroclor-1254 (PCB-1254)	µg/L	0.039 U	0.039 U	0.040 U
Aroclor-1260 (PCB-1260)	µg/L	0.045 U	0.045 U	0.046 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Pesticides				
4,4'-DDD	µg/L	0.0051 U	0.0051 U	0.0052 U
4,4'-DDE	µg/L	0.0042 U	0.0042 U	0.0043 U
4,4'-DDT	µg/L	0.0047 U	0.0047 U	0.0048 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0024 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0020 U
alpha-Chlordane	µg/L	0.0031 U	0.0031 U	0.0032 U
beta-BHC	µg/L	0.0045 U	0.0045 U	0.0046 U
delta-BHC	µg/L	0.0042 U	0.0042 U	0.0043 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan I	µg/L	0.0036 U	0.0036 U	0.0037 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan sulfate	µg/L	0.0036 U	0.0036 U	0.0037 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0025 U
Endrin aldehyde	µg/L	0.0045 U	0.0045 U	0.0046 U
Endrin ketone	µg/L	0.0039 U	0.0039 U	0.0040 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0025 U
gamma-Chlordane	µg/L	0.0049 U	0.0049 U	0.0050 U
Heptachlor	µg/L	0.0032 U	0.0032 U	0.0033 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0026 U
Methoxychlor	µg/L	0.0046 U	0.0046 U	0.0047 U
Toxaphene	µg/L	0.056 U	0.056 U	0.058 U
Metals				
Mercury	ng/L	0.14 U	0.25 U	0.25 U
Aluminum	µg/L	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.80 J
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.62 J
Arsenic	µg/L	1.8 J	2.0 J	2.0 J
Arsenic (dissolved)	µg/L	1.5 J	2.0 J	1.8 J
Barium	µg/L	90	93	86
Barium (dissolved)	µg/L	82	87	87
Beryllium	µg/L	0.31 U	0.31 U	0.65 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Metals				
Calcium	µg/L	36000	38000	35000
Calcium (dissolved)	µg/L	33000	37000	36000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 U	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 U	140	47 U
Iron (dissolved)	µg/L	47 U	49 J	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	24000	25000	23000
Magnesium (dissolved)	µg/L	22000	25000	24000
Manganese	µg/L	6.8	36	3.7 J
Manganese (dissolved)	µg/L	2.1 U	11	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 U	1.5 U	1.5 U
Potassium	µg/L	5000	5300	4900
Potassium (dissolved)	µg/L	4600	5200	5100
Selenium	µg/L	0.89 U	0.89 U	1.0 J
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	18000	18000	17000
Sodium (dissolved)	µg/L	16000	18000	18000
Thallium	µg/L	0.20 U	0.20 U	0.82 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.63 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 U	15 U	15 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-7**	**SW-7**	**SW-8**
	Sample Name:	**SW-38443-100319-JPF-012**	**SW-38443-100319-JPF-013**	**SW-38443-100319-JPF-010**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	27	27	27
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.17	0.17	0.18
Hardness	mg/L	190	200	180
Hardness, carbonate	mg/L	91	95	88
Hardness, magnesium	mg/L	100	100	96
Sulfate	mg/L	20	19	20
Sulfide	mg/L	0.58 U	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	270	270	240
Chloride	µg/L	--	--	--
Fluoride	µg/L	--	--	--
Nitrate (as N)	µg/L	R	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U
Sulfate	µg/L	--	--	--
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 UJ	0.13 U	0.13 U
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 UJ	5.4 U	5.4 U
Benzene	µg/L	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 UJ	0.76 U	0.76 U
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.15 J	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.53 U	1.0 U	0.54 U
2,4,5-Trichlorophenol	µg/L	1.9 U	3.7 U	1.9 U
2,4,6-Trichlorophenol	µg/L	1.7 U	3.3 U	1.8 U
2,4-Dichlorophenol	µg/L	0.25 U	0.49 U	0.26 U
2,4-Dimethylphenol	µg/L	0.50 U	0.96 U	0.51 U
2,4-Dinitrophenol	µg/L	6.0 U	12 U	6.1 U
2,4-Dinitrotoluene	µg/L	2.0 U	3.8 U	2.0 U
2,6-Dinitrotoluene	µg/L	2.0 U	3.9 U	2.1 U
2-Chloronaphthalene	µg/L	0.46 U	0.89 U	0.47 U
2-Chlorophenol	µg/L	0.26 U	0.51 U	0.27 U
2-Methylnaphthalene	µg/L	0.12 J	0.21 U	0.11 U
2-Methylphenol	µg/L	0.20 U	0.39 U	0.20 U
2-Nitroaniline	µg/L	0.49 U	0.94 U	0.50 U
2-Nitrophenol	µg/L	0.54 U	1.0 U	0.55 U
3&4-Methylphenol	µg/L	0.18 U	0.35 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	1.1 U	2.1 U	1.1 U
3-Nitroaniline	µg/L	0.54 U	1.0 U	0.55 U
4,6-Dinitro-2-methylphenol	µg/L	2.7 U	5.2 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.48 U	0.92 U	0.49 U
4-Chloro-3-methylphenol	µg/L	0.28 U	0.55 U	0.29 U
4-Chloroaniline	µg/L	0.30 U	0.59 U	0.31 U
4-Chlorophenyl phenyl ether	µg/L	0.53 U	1.0 U	0.54 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitroaniline	µg/L	0.88 U	1.7 U	0.90 U
4-Nitrophenol	µg/L	2.1 U	4.0 U	2.1 U
Acenaphthene	µg/L	0.17 U	0.32 U	0.17 U
Acenaphthylene	µg/L	0.12 U	0.23 U	0.12 U
Acetophenone	µg/L	0.35 U	0.68 U	0.36 U
Anthracene	µg/L	0.13 U	0.25 U	0.13 U
Atrazine	µg/L	0.92 U	1.8 U	0.93 U
Benzaldehyde	µg/L	0.73 U	1.4 U	0.74 U
Benzo(a)anthracene	µg/L	0.16 U	0.32 U	0.17 U
Benzo(a)pyrene	µg/L	0.17 U	0.32 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.15 U	0.29 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.17 U	0.33 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.13 U	0.26 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.47 U	0.91 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	0.44 U	0.84 U	0.45 U
bis(2-Chloroethyl)ether	µg/L	0.39 U	0.74 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.1 U	4.1 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	0.64 U	1.2 U	0.65 U
Caprolactam	µg/L	0.90 U	1.7 U	0.92 U
Carbazole	µg/L	0.47 U	0.91 U	0.48 U
Chrysene	µg/L	0.18 U	0.34 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	1.7 U	3.3 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	0.79 U	1.5 U	0.80 U
Dibenz(a,h)anthracene	µg/L	0.15 U	0.28 U	0.15 U
Dibenzofuran	µg/L	0.54 U	1.0 U	0.55 U
Diethyl phthalate	µg/L	3.7 U	7.1 U	3.7 U
Dimethyl phthalate	µg/L	0.50 U	0.95 U	0.50 U
Fluoranthene	µg/L	0.15 U	0.30 U	0.16 U
Fluorene	µg/L	0.16 U	0.31 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Hexachlorobenzene	µg/L	0.15 U	0.30 U	0.16 U
Hexachlorobutadiene	µg/L	0.52 U	1.0 U	0.53 U
Hexachlorocyclopentadiene	µg/L	1.7 U	3.3 U	1.7 U
Hexachloroethane	µg/L	0.38 U	0.73 U	0.39 U
Indeno(1,2,3-cd)pyrene	µg/L	0.13 U	0.25 U	0.13 U
Isophorone	µg/L	0.31 U	0.60 U	0.32 U
N-Nitrosodi-n-propylamine	µg/L	0.24 U	0.47 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.42 U	0.81 U	0.43 U
Naphthalene	µg/L	0.86	0.20 U	0.11 U
Nitrobenzene	µg/L	0.49 U	0.95 U	0.50 U
Pentachlorophenol	µg/L	3.0 U	5.7 U	3.0 U
Phenanthrene	µg/L	0.16 U	0.31 U	0.16 U
Phenol	µg/L	0.12 U	0.24 U	0.13 U
Pyrene	µg/L	0.17 U	0.32 U	0.17 U
Herbicides				
2,4,5-T	µg/L	0.57 UJ	0.57 U	0.57 U
2,4,5-TP (Silvex)	µg/L	0.43 UJ	0.43 U	0.43 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 UJ	2.2 U	2.2 U
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	0.053 U	0.054 U
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	0.054 U	0.055 U
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	0.070 U	0.072 U
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	0.072 U	0.074 U
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	0.048 U	0.049 U
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	0.038 U	0.039 U
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	0.044 U	0.045 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Pesticides				
4,4'-DDD	µg/L	0.0050 U	0.0050 U	0.0051 U
4,4'-DDE	µg/L	0.0041 U	0.0041 U	0.0042 U
4,4'-DDT	µg/L	0.0046 U	0.0046 U	0.0047 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0023 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0019 U
alpha-Chlordane	µg/L	0.0030 U	0.0030 U	0.0031 U
beta-BHC	µg/L	0.0044 U	0.0044 U	0.0045 U
delta-BHC	µg/L	0.0041 U	0.0041 U	0.0042 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0022 U
Endosulfan I	µg/L	0.0035 U	0.0035 U	0.0036 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0022 U
Endosulfan sulfate	µg/L	0.0035 U	0.0035 U	0.0036 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0024 U
Endrin aldehyde	µg/L	0.0044 U	0.0044 U	0.0045 U
Endrin ketone	µg/L	0.0038 U	0.0038 U	0.0039 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0024 U
gamma-Chlordane	µg/L	0.0048 U	0.0048 U	0.0049 U
Heptachlor	µg/L	0.0031 U	0.0031 U	0.0032 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0045 U	0.0045 U	0.0046 U
Toxaphene	µg/L	0.055 U	0.055 U	0.056 U
Metals				
Mercury	ng/L	0.25 U	0.23 U	0.33 U
Aluminum	µg/L	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	2.0 J	1.8 J	1.6 J
Arsenic (dissolved)	µg/L	1.8 J	1.8 J	1.8 J
Barium	µg/L	89	91	85
Barium (dissolved)	µg/L	89	91	86
Beryllium	µg/L	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
Metals				
Calcium	µg/L	39000	37000	35000
Calcium (dissolved)	µg/L	38000	37000	36000
Chromium	µg/L	0.98 U	0.98 U	0.98 UJ
Chromium (dissolved)	µg/L	0.98 U	0.98 U	6.4 J
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	66 J	47 U	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	25000	25000	24000
Magnesium (dissolved)	µg/L	24000	26000	25000
Manganese	µg/L	7.8	3.9 J	5.3 J
Manganese (dissolved)	µg/L	2.1 U	2.1 U	8.1 J
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 UJ
Nickel (dissolved)	µg/L	1.5 U	1.5 U	4.0 J
Potassium	µg/L	5100	5200	5000
Potassium (dissolved)	µg/L	5100	5300	5300
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	18000	19000	18000
Sodium (dissolved)	µg/L	18000	19000	18000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 UJ
Zinc (dissolved)	µg/L	15 U	15 U	89 J

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-8**	**SW-9**	**SW-10**
	Sample Name:	**SW-38443-100319-JPF-011**	**SW-38443-100219-JPF-009**	**SW-38443-100219-JPF-007**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	27	--	--
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	0.17	--	--
Hardness	mg/L	200	200	190
Hardness, carbonate	mg/L	97	92	87
Hardness, magnesium	mg/L	100	100	99
Sulfate	mg/L	20	--	--
Sulfide	mg/L	0.58 U	0.80 J	1.6
Total dissolved solids (TDS)	mg/L	270	250	220
Chloride	µg/L	--	27000	27000
Fluoride	µg/L	--	170	170
Nitrate (as N)	µg/L	R	14 U	14 U
Nitrite (as N)	µg/L	14 U	14 U	14 U
Sulfate	µg/L	--	20000	20000
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	0.13 UJ	0.13 UJ
1,1,2-Trichloroethane	µg/L	0.090 U	0.090 U	0.090 U
1,1-Dichloroethane	µg/L	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
1,2,4-Trichlorobenzene	µg/L	0.26 U	0.26 U	0.26 U
1,2-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,2-Dichloroethane	µg/L	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	µg/L	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	µg/L	0.15 U	0.15 U	0.15 U
1,4-Dichlorobenzene	µg/L	0.16 U	0.16 U	0.16 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	1.2 U	1.2 U
2-Hexanone	µg/L	0.54 U	0.54 U	0.54 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	0.42 U	0.42 U
Acetone	µg/L	5.4 U	5.4 UJ	5.4 UJ
Benzene	µg/L	0.13 U	0.13 U	0.13 U
Bromodichloromethane	µg/L	0.17 U	0.17 U	0.17 U
Bromoform	µg/L	0.76 U	0.76 UJ	0.76 UJ
Bromomethane (Methyl bromide)	µg/L	0.42 U	0.42 U	0.42 U
Carbon disulfide	µg/L	0.28 U	0.28 U	0.28 U
Carbon tetrachloride	µg/L	0.26 U	0.26 U	0.26 U
Chlorobenzene	µg/L	0.14 U	0.14 U	0.14 U
Chloroethane	µg/L	0.83 U	0.83 U	0.83 U
Chloroform (Trichloromethane)	µg/L	0.13 U	0.13 U	0.13 U
Chloromethane (Methyl chloride)	µg/L	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	µg/L	0.16 U	0.16 U	0.16 U
cis-1,3-Dichloropropene	µg/L	0.61 U	0.61 U	0.61 U
Cyclohexane	µg/L	0.24 U	0.24 U	0.24 U
Dibromochloromethane	µg/L	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	0.11 U	0.11 U	0.11 U
Isopropyl benzene	µg/L	0.090 U	0.090 U	0.090 U
m&p-Xylenes	µg/L	0.080 U	0.080 U	0.080 U
Methyl acetate	µg/L	1.7 U	1.7 U	1.7 U
Methyl cyclohexane	µg/L	0.33 U	0.33 U	0.33 U
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	0.070 U	0.070 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
Methylene chloride	µg/L	2.6 U	2.6 U	2.6 U
o-Xylene	µg/L	0.090 U	0.090 U	0.090 U
Styrene	µg/L	0.10 U	0.10 U	0.10 U
Tetrachloroethene	µg/L	0.15 U	0.15 U	0.15 U
Toluene	µg/L	0.14 U	0.14 U	0.14 U
trans-1,2-Dichloroethene	µg/L	0.19 U	0.19 U	0.19 U
trans-1,3-Dichloropropene	µg/L	0.67 U	0.67 U	0.67 U
Trichloroethene	µg/L	0.10 U	0.10 U	0.10 U
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	0.45 U	0.45 U
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	0.41 U	0.41 U
Vinyl chloride	µg/L	0.20 U	0.20 U	0.20 U
Xylenes (total)	µg/L	0.15 U	0.15 U	0.15 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	1.0 U	0.53 U	0.54 U
2,4,5-Trichlorophenol	µg/L	3.6 U	1.9 U	1.9 U
2,4,6-Trichlorophenol	µg/L	3.3 U	1.7 U	1.8 U
2,4-Dichlorophenol	µg/L	0.48 U	0.25 U	0.26 U
2,4-Dimethylphenol	µg/L	0.94 U	0.50 U	0.51 U
2,4-Dinitrophenol	µg/L	11 U	6.0 U	6.1 U
2,4-Dinitrotoluene	µg/L	3.8 U	2.0 U	2.0 U
2,6-Dinitrotoluene	µg/L	3.9 U	2.0 U	2.1 U
2-Chloronaphthalene	µg/L	0.88 U	0.46 U	0.47 U
2-Chlorophenol	µg/L	0.50 U	0.26 U	0.27 U
2-Methylnaphthalene	µg/L	0.20 U	0.11 U	0.11 U
2-Methylphenol	µg/L	0.38 U	0.20 U	0.20 U
2-Nitroaniline	µg/L	0.93 U	0.49 U	0.50 U
2-Nitrophenol	µg/L	1.0 U	0.54 U	0.55 U
3&4-Methylphenol	µg/L	0.35 U	0.18 U	0.19 U
3,3'-Dichlorobenzidine	µg/L	2.1 U	1.1 U	1.1 U
3-Nitroaniline	µg/L	1.0 U	0.54 U	0.55 U
4,6-Dinitro-2-methylphenol	µg/L	5.1 U	2.7 U	2.8 U
4-Bromophenyl phenyl ether	µg/L	0.91 U	0.48 U	0.49 U
4-Chloro-3-methylphenol	µg/L	0.54 U	0.28 U	0.29 U
4-Chloroaniline	µg/L	0.57 U	0.30 U	0.31 U
4-Chlorophenyl phenyl ether	µg/L	1.0 U	0.53 U	0.54 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Semivolatile Organic Compounds				
4-Nitroaniline	µg/L	1.7 U	0.88 U	0.90 U
4-Nitrophenol	µg/L	4.0 U	2.1 U	2.1 U
Acenaphthene	µg/L	0.31 U	0.17 U	0.17 U
Acenaphthylene	µg/L	0.23 U	0.12 U	0.12 U
Acetophenone	µg/L	0.67 U	0.35 U	0.36 U
Anthracene	µg/L	0.25 U	0.13 U	0.13 U
Atrazine	µg/L	1.7 U	0.92 U	0.93 U
Benzaldehyde	µg/L	1.4 U	0.73 U	0.74 U
Benzo(a)anthracene	µg/L	0.31 U	0.16 U	0.17 U
Benzo(a)pyrene	µg/L	0.31 U	0.17 U	0.17 U
Benzo(b)fluoranthene	µg/L	0.28 U	0.15 U	0.15 U
Benzo(g,h,i)perylene	µg/L	0.32 U	0.17 U	0.17 U
Benzo(k)fluoranthene	µg/L	0.25 U	0.13 U	0.14 U
Biphenyl (1,1-Biphenyl)	µg/L	0.89 U	0.47 U	0.48 U
bis(2-Chloroethoxy)methane	µg/L	0.83 U	0.44 U	0.45 U
bis(2-Chloroethyl)ether	µg/L	0.73 U	0.39 U	0.39 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	4.0 U	2.1 U	2.2 U
Butyl benzylphthalate (BBP)	µg/L	1.2 U	0.64 U	0.65 U
Caprolactam	µg/L	1.7 U	0.90 U	0.92 U
Carbazole	µg/L	0.89 U	0.47 U	0.48 U
Chrysene	µg/L	0.34 U	0.18 U	0.18 U
Di-n-butylphthalate (DBP)	µg/L	3.3 U	1.7 U	1.8 U
Di-n-octyl phthalate (DnOP)	µg/L	1.5 U	0.79 U	0.80 U
Dibenz(a,h)anthracene	µg/L	0.27 U	0.15 U	0.15 U
Dibenzofuran	µg/L	1.0 U	0.54 U	0.55 U
Diethyl phthalate	µg/L	6.9 U	3.7 U	3.7 U
Dimethyl phthalate	µg/L	0.94 U	0.50 U	0.50 U
Fluoranthene	µg/L	0.29 U	0.15 U	0.16 U
Fluorene	µg/L	0.31 U	0.16 U	0.17 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Semivolatile Organic Compounds				
Hexachlorobenzene	µg/L	0.29 U	0.15 U	0.16 U
Hexachlorobutadiene	µg/L	0.99 U	0.52 U	0.53 U
Hexachlorocyclopentadiene	µg/L	3.2 U	1.7 U	1.7 U
Hexachloroethane	µg/L	0.72 U	0.38 U	0.39 U
Indeno(1,2,3-cd)pyrene	µg/L	0.25 U	0.13 U	0.13 U
Isophorone	µg/L	0.59 U	0.31 U	0.32 U
N-Nitrosodi-n-propylamine	µg/L	0.46 U	0.24 U	0.25 U
N-Nitrosodiphenylamine	µg/L	0.80 U	0.42 U	0.43 U
Naphthalene	µg/L	0.20 U	0.10 U	0.17 J
Nitrobenzene	µg/L	0.93 U	0.49 U	0.50 U
Pentachlorophenol	µg/L	5.6 U	3.0 U	3.0 U
Phenanthrene	µg/L	0.30 U	0.16 U	0.16 U
Phenol	µg/L	0.23 U	0.12 U	0.13 U
Pyrene	µg/L	0.32 U	0.17 U	0.17 U
Herbicides				
2,4,5-T	µg/L	0.57 U	0.57 UJ	0.57 UJ
2,4,5-TP (Silvex)	µg/L	0.43 U	0.43 UJ	0.43 UJ
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	2.2 UJ	2.2 UJ
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	0.054 U	0.055 U
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	0.055 U	0.056 U
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	0.071 U	0.073 U
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	0.073 U	0.075 U
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	0.048 U	0.049 U
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	0.038 U	0.039 U
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	0.044 U	0.045 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Pesticides				
4,4'-DDD	µg/L	0.0050 U	0.0051 U	0.0052 U
4,4'-DDE	µg/L	0.0041 U	0.0041 U	0.0042 U
4,4'-DDT	µg/L	0.0046 U	0.0046 U	0.0047 U
Aldrin	µg/L	0.0023 U	0.0023 U	0.0024 U
alpha-BHC	µg/L	0.0019 U	0.0019 U	0.0020 U
alpha-Chlordane	µg/L	0.0030 U	0.0031 U	0.0031 U
beta-BHC	µg/L	0.0044 U	0.0044 U	0.0045 U
delta-BHC	µg/L	0.0041 U	0.0041 U	0.0042 U
Dieldrin	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan I	µg/L	0.0035 U	0.0036 U	0.0036 U
Endosulfan II	µg/L	0.0022 U	0.0022 U	0.0023 U
Endosulfan sulfate	µg/L	0.0035 U	0.0036 U	0.0036 U
Endrin	µg/L	0.0024 U	0.0024 U	0.0025 U
Endrin aldehyde	µg/L	0.0044 U	0.0044 U	0.0045 U
Endrin ketone	µg/L	0.0038 U	0.0038 U	0.0039 U
gamma-BHC (lindane)	µg/L	0.0024 U	0.0024 U	0.0025 U
gamma-Chlordane	µg/L	0.0048 U	0.0048 U	0.0049 U
Heptachlor	µg/L	0.0031 U	0.0032 U	0.0032 U
Heptachlor epoxide	µg/L	0.0025 U	0.0025 U	0.0025 U
Methoxychlor	µg/L	0.0045 U	0.0045 U	0.0046 U
Toxaphene	µg/L	0.055 U	0.056 U	0.057 U
Metals				
Mercury	ng/L	0.23 U	0.14 U	0.14 U
Aluminum	µg/L	34 U	34 U	34 U
Aluminum (dissolved)	µg/L	34 U	34 U	34 U
Antimony	µg/L	0.57 U	0.57 U	0.57 U
Antimony (dissolved)	µg/L	0.57 U	0.57 U	0.57 U
Arsenic	µg/L	1.8 J	1.6 J	1.7 J
Arsenic (dissolved)	µg/L	1.7 J	1.7 J	1.7 J
Barium	µg/L	92	90	91
Barium (dissolved)	µg/L	92	87	88
Beryllium	µg/L	0.31 U	0.31 U	0.31 U
Beryllium (dissolved)	µg/L	0.31 U	0.31 U	0.31 U
Cadmium	µg/L	0.20 U	0.20 U	0.20 U
Cadmium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U

Table 2A

Analytical Results Summary
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Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
Metals				
Calcium	µg/L	37000	37000	37000
Calcium (dissolved)	µg/L	38000	36000	36000
Chromium	µg/L	0.98 U	0.98 U	0.98 U
Chromium (dissolved)	µg/L	0.98 UJ	0.98 U	0.98 U
Cobalt	µg/L	0.19 U	0.19 U	0.19 U
Cobalt (dissolved)	µg/L	0.19 U	0.19 U	0.19 U
Copper	µg/L	1.7 U	1.7 U	1.7 U
Copper (dissolved)	µg/L	1.7 U	1.7 U	1.7 U
Iron	µg/L	47 J	47 U	47 U
Iron (dissolved)	µg/L	47 U	47 U	47 U
Lead	µg/L	0.45 U	0.45 U	0.45 U
Lead (dissolved)	µg/L	0.45 U	0.45 U	0.45 U
Magnesium	µg/L	26000	24000	25000
Magnesium (dissolved)	µg/L	26000	24000	25000
Manganese	µg/L	5.2	5.0	5.4
Manganese (dissolved)	µg/L	2.1 U	2.1 U	2.1 U
Mercury	µg/L	0.13 U	0.13 U	0.13 U
Mercury (dissolved)	µg/L	0.13 U	0.13 U	0.13 U
Nickel	µg/L	1.5 U	1.5 U	1.5 U
Nickel (dissolved)	µg/L	1.5 UJ	1.5 U	1.5 U
Potassium	µg/L	5300	5100	5200
Potassium (dissolved)	µg/L	5400	5000	5100
Selenium	µg/L	0.89 U	0.89 U	0.89 U
Selenium (dissolved)	µg/L	0.89 U	0.89 U	0.89 U
Silver	µg/L	0.053 U	0.053 U	0.053 U
Silver (dissolved)	µg/L	0.053 U	0.053 U	0.053 U
Sodium	µg/L	19000	18000	18000
Sodium (dissolved)	µg/L	19000	18000	18000
Thallium	µg/L	0.20 U	0.20 U	0.20 U
Thallium (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Vanadium	µg/L	0.82 U	0.82 U	0.82 U
Vanadium (dissolved)	µg/L	0.82 U	0.82 U	0.82 U
Zinc	µg/L	15 U	15 U	15 U
Zinc (dissolved)	µg/L	15 UJ	15 U	15 U

Table 2A

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**SW-10**	**SW-11**	**SW-12**
	Sample Name:	**SW-38443-100219-JPF-008**	**SW-38443-100319-JPF-018**	**SW-38443-100319-JPF-019**
	Sample Date:	**10/02/2019**	**10/03/2019**	**10/03/2019**
		Duplicate		
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	--	27	27
Cyanide (total)	mg/L	0.0060 U	0.0060 U	0.0060 U
Fluoride	mg/L	--	0.17	0.16
Hardness	mg/L	200	190	190
Hardness, carbonate	mg/L	93	92	92
Hardness, magnesium	mg/L	110	100	100
Sulfate	mg/L	--	20	20
Sulfide	mg/L	0.60 J	0.58 U	0.58 U
Total dissolved solids (TDS)	mg/L	240	260	270
Chloride	µg/L	27000	--	--
Fluoride	µg/L	170	--	--
Nitrate (as N)	µg/L	14 U	R	R
Nitrite (as N)	µg/L	14 U	14 U	14 U
Sulfate	µg/L	20000	--	--
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	0.0086 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	0.0087 U

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
R - Rejected
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene
PCBs - Polychlorinated Biphenyls

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
1,1,1-Trichloroethane	µg/L	0.24 U	--	0.24 U	--
1,1,2,2-Tetrachloroethane	µg/L	0.13 U	--	0.13 U	--
1,1,2-Trichloroethane	µg/L	0.090 U	--	0.090 U	--
1,1-Dichloroethane	µg/L	0.17 U	--	0.17 U	--
1,1-Dichloroethene	µg/L	0.19 U	--	0.19 U	--
1,2,4-Trichlorobenzene	µg/L	0.26 U	--	0.26 U	--
1,2-Dichlorobenzene	µg/L	0.15 U	--	0.15 U	--
1,2-Dichloroethane	µg/L	0.21 U	--	0.21 U	--
1,2-Dichloropropane	µg/L	0.15 U	--	0.15 U	--
1,3-Dichlorobenzene	µg/L	0.15 U	--	0.15 U	--
1,4-Dichlorobenzene	µg/L	0.16 U	--	0.16 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.2 U	--	1.2 U	--
2-Hexanone	µg/L	0.54 U	--	0.54 U	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	0.42 U	--	0.42 U	--
Acetone	µg/L	5.4 U	--	5.4 U	--
Benzene	µg/L	0.13 U	--	0.13 U	--
Bromodichloromethane	µg/L	0.17 U	--	0.17 U	--
Bromoform	µg/L	0.76 U	--	0.76 U	--
Bromomethane (Methyl bromide)	µg/L	0.42 U	--	0.42 U	--
Carbon disulfide	µg/L	0.28 U	--	0.28 U	--
Carbon tetrachloride	µg/L	0.26 U	--	0.26 U	--
Chlorobenzene	µg/L	0.14 U	--	0.14 U	--
Chloroethane	µg/L	0.83 U	--	0.83 U	--
Chloroform (Trichloromethane)	µg/L	0.13 U	--	0.13 U	--
Chloromethane (Methyl chloride)	µg/L	0.20 U	--	0.20 U	--
cis-1,2-Dichloroethene	µg/L	0.16 U	--	0.16 U	--
cis-1,3-Dichloropropene	µg/L	0.61 U	--	0.61 U	--
Cyclohexane	µg/L	0.24 U	--	0.24 U	--
Dibromochloromethane	µg/L	0.39 U	--	0.39 U	--
Dichlorodifluoromethane (CFC-12)	µg/L	0.35 U	--	0.35 U	--
Ethylbenzene	µg/L	0.11 U	--	0.11 U	--
Isopropyl benzene	µg/L	0.090 U	--	0.090 U	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Volatile Organic Compounds, BTEX					
m&p-Xylenes	µg/L	0.080 U	--	0.080 U	--
Methyl acetate	µg/L	1.7 U	--	1.7 U	--
Methyl cyclohexane	µg/L	0.33 U	--	0.33 U	--
Methyl tert butyl ether (MTBE)	µg/L	0.070 U	--	0.070 U	--
Methylene chloride	µg/L	2.6 U	--	2.6 U	--
o-Xylene	µg/L	0.090 U	--	0.090 U	--
Styrene	µg/L	0.10 U	--	0.10 U	--
Tetrachloroethene	µg/L	0.15 U	--	0.15 U	--
Toluene	µg/L	0.14 U	--	0.14 U	--
trans-1,2-Dichloroethene	µg/L	0.19 U	--	0.19 U	--
trans-1,3-Dichloropropene	µg/L	0.67 U	--	0.67 U	--
Trichloroethene	µg/L	0.10 U	--	0.10 U	--
Trichlorofluoromethane (CFC-11)	µg/L	0.45 U	--	0.45 U	--
Trifluorotrichloroethane (CFC-113)	µg/L	0.41 U	--	0.41 U	--
Vinyl chloride	µg/L	0.20 U	--	0.20 U	--
Xylenes (total)	µg/L	0.15 U	--	0.15 U	--
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.55 U	--	--	--
2,4,5-Trichlorophenol	µg/L	2.0 U	--	--	--
2,4,6-Trichlorophenol	µg/L	1.8 U	--	--	--
2,4-Dichlorophenol	µg/L	0.26 U	--	--	--
2,4-Dimethylphenol	µg/L	0.52 U	--	--	--
2,4-Dinitrophenol	µg/L	6.2 U	--	--	--
2,4-Dinitrotoluene	µg/L	2.1 U	--	--	--
2,6-Dinitrotoluene	µg/L	2.1 U	--	--	--
2-Chloronaphthalene	µg/L	0.48 U	--	--	--
2-Chlorophenol	µg/L	0.27 U	--	--	--
2-Methylnaphthalene	µg/L	0.11 U	--	--	--
2-Methylphenol	µg/L	0.21 U	--	--	--
2-Nitroaniline	µg/L	0.51 U	--	--	--
2-Nitrophenol	µg/L	0.56 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
3&4-Methylphenol	µg/L	0.19 U	--	--	--
3,3'-Dichlorobenzidine	µg/L	1.2 U	--	--	--
3-Nitroaniline	µg/L	0.57 U	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	2.8 U	--	--	--
4-Bromophenyl phenyl ether	µg/L	0.50 U	--	--	--
4-Chloro-3-methylphenol	µg/L	0.30 U	--	--	--
4-Chloroaniline	µg/L	0.32 U	--	--	--
4-Chlorophenyl phenyl ether	µg/L	0.55 U	--	--	--
4-Nitroaniline	µg/L	0.92 U	--	--	--
4-Nitrophenol	µg/L	2.2 U	--	--	--
Acenaphthene	µg/L	0.17 U	--	--	--
Acenaphthylene	µg/L	0.13 U	--	--	--
Acetophenone	µg/L	0.37 U	--	--	--
Anthracene	µg/L	0.14 U	--	--	--
Atrazine	µg/L	0.95 U	--	--	--
Benzaldehyde	µg/L	0.76 U	--	--	--
Benzo(a)anthracene	µg/L	0.17 U	--	--	--
Benzo(a)pyrene	µg/L	0.17 U	--	--	--
Benzo(b)fluoranthene	µg/L	0.15 U	--	--	--
Benzo(g,h,i)perylene	µg/L	0.18 U	--	--	--
Benzo(k)fluoranthene	µg/L	0.14 U	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	0.49 U	--	--	--
bis(2-Chloroethoxy)methane	µg/L	0.46 U	--	--	--
bis(2-Chloroethyl)ether	µg/L	0.40 U	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	2.2 U	--	--	--
Butyl benzylphthalate (BBP)	µg/L	0.67 U	--	--	--
Caprolactam	µg/L	0.93 U	--	--	--
Carbazole	µg/L	0.49 U	--	--	--
Chrysene	µg/L	0.19 U	--	--	--
Di-n-butylphthalate (DBP)	µg/L	1.8 U	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	0.82 U	--	--	--
Dibenz(a,h)anthracene	µg/L	0.15 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Semivolatile Organic Compounds					
Dibenzofuran	µg/L	0.56 U	--	--	--
Diethyl phthalate	µg/L	3.8 U	--	--	--
Dimethyl phthalate	µg/L	0.52 U	--	--	--
Fluoranthene	µg/L	0.16 U	--	--	--
Fluorene	µg/L	0.17 U	--	--	--
Hexachlorobenzene	µg/L	0.16 U	--	--	--
Hexachlorobutadiene	µg/L	0.54 U	--	--	--
Hexachlorocyclopentadiene	µg/L	1.8 U	--	--	--
Hexachloroethane	µg/L	0.40 U	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	0.14 U	--	--	--
Isophorone	µg/L	0.32 U	--	--	--
N-Nitrosodi-n-propylamine	µg/L	0.25 U	--	--	--
N-Nitrosodiphenylamine	µg/L	0.44 U	--	--	--
Naphthalene	µg/L	0.11 U	--	--	--
Nitrobenzene	µg/L	0.51 U	--	--	--
Pentachlorophenol	µg/L	3.1 U	--	--	--
Phenanthrene	µg/L	0.17 U	--	--	--
Phenol	µg/L	0.13 U	--	--	--
Pyrene	µg/L	0.18 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:		Field Blank	Trip Blank	Trip Blank	Trip Blank
Sample Name:		SW-38443-100319-JPF-020	TB-100219-001	TB-100219-003	TB-100219-004
Sample Date:		10/03/2019	10/02/2019	10/02/2019	10/02/2019
Parameters	**Unit**				
Herbicides					
2,4,5-T	µg/L	0.57 U	--	--	--
2,4,5-TP (Silvex)	µg/L	0.43 U	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	2.2 U	--	--	--
PCBs					
Aroclor-1016 (PCB-1016)	µg/L	0.053 U	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	0.054 U	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	0.070 U	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	0.072 U	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	0.048 U	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	0.038 U	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	0.044 U	--	--	--
Pesticides					
4,4'-DDD	µg/L	0.0050 U	--	--	--
4,4'-DDE	µg/L	0.0041 U	--	--	--
4,4'-DDT	µg/L	0.0046 U	--	--	--
Aldrin	µg/L	0.0023 U	--	--	--
alpha-BHC	µg/L	0.0019 U	--	--	--
alpha-Chlordane	µg/L	0.0030 U	--	--	--
beta-BHC	µg/L	0.0044 U	--	--	--
delta-BHC	µg/L	0.0041 U	--	--	--
Dieldrin	µg/L	0.0022 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:		Field Blank	Trip Blank	Trip Blank	Trip Blank
Sample Name:		SW-38443-100319-JPF-020	TB-100219-001	TB-100219-003	TB-100219-004
Sample Date:		10/03/2019	10/02/2019	10/02/2019	10/02/2019
Parameters	**Unit**				
Pesticides					
Endosulfan I	µg/L	0.0035 U	--	--	--
Endosulfan II	µg/L	0.0022 U	--	--	--
Endosulfan sulfate	µg/L	0.0035 U	--	--	--
Endrin	µg/L	0.0024 U	--	--	--
Endrin aldehyde	µg/L	0.0044 U	--	--	--
Endrin ketone	µg/L	0.0038 U	--	--	--
gamma-BHC (lindane)	µg/L	0.0024 U	--	--	--
gamma-Chlordane	µg/L	0.0048 U	--	--	--
Heptachlor	µg/L	0.0031 U	--	--	--
Heptachlor epoxide	µg/L	0.0025 U	--	--	--
Methoxychlor	µg/L	0.0045 U	--	--	--
Toxaphene	µg/L	0.055 U	--	--	--
Metals					
Mercury	ng/L	0.14 U	--	--	0.14 U
Aluminum	µg/L	34 U	--	--	--
Aluminum (dissolved)	µg/L	34 U	--	--	--
Antimony	µg/L	0.57 U	--	--	--
Antimony (dissolved)	µg/L	0.57 U	--	--	--
Arsenic	µg/L	0.75 U	--	--	--
Arsenic (dissolved)	µg/L	0.75 U	--	--	--
Barium	µg/L	2.2 U	--	--	--
Barium (dissolved)	µg/L	2.2 U	--	--	--
Beryllium	µg/L	0.63 J	--	--	--
Beryllium (dissolved)	µg/L	0.53 J	--	--	--
Cadmium	µg/L	0.20 U	--	--	--
Cadmium (dissolved)	µg/L	0.20 U	--	--	--
Calcium	µg/L	580 U	--	--	--
Calcium (dissolved)	µg/L	580 U	--	--	--
Chromium	µg/L	0.98 U	--	--	--
Chromium (dissolved)	µg/L	0.98 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
Metals					
Cobalt	µg/L	0.19 U	--	--	--
Cobalt (dissolved)	µg/L	0.19 U	--	--	--
Copper	µg/L	1.7 U	--	--	--
Copper (dissolved)	µg/L	1.7 U	--	--	--
Iron	µg/L	47 U	--	--	--
Iron (dissolved)	µg/L	47 U	--	--	--
Lead	µg/L	0.45 U	--	--	--
Lead (dissolved)	µg/L	0.45 U	--	--	--
Magnesium	µg/L	200 U	--	--	--
Magnesium (dissolved)	µg/L	200 U	--	--	--
Manganese	µg/L	2.1 U	--	--	--
Manganese (dissolved)	µg/L	2.1 U	--	--	--
Mercury	µg/L	0.13 U	--	--	--
Mercury (dissolved)	µg/L	0.13 U	--	--	--
Nickel	µg/L	1.5 U	--	--	--
Nickel (dissolved)	µg/L	1.5 U	--	--	--
Potassium	µg/L	220 U	--	--	--
Potassium (dissolved)	µg/L	220 U	--	--	--
Selenium	µg/L	0.89 U	--	--	--
Selenium (dissolved)	µg/L	0.89 U	--	--	--
Silver	µg/L	0.053 U	--	--	--
Silver (dissolved)	µg/L	0.053 U	--	--	--
Sodium	µg/L	330 U	--	--	--
Sodium (dissolved)	µg/L	330 U	--	--	--
Thallium	µg/L	0.82 J	--	--	--
Thallium (dissolved)	µg/L	0.63 J	--	--	--
Vanadium	µg/L	0.82 U	--	--	--
Vanadium (dissolved)	µg/L	0.82 U	--	--	--
Zinc	µg/L	15 U	--	--	--
Zinc (dissolved)	µg/L	15 U	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Field Blank**	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**SW-38443-100319-JPF-020**	**TB-100219-001**	**TB-100219-003**	**TB-100219-004**
	Sample Date:	**10/03/2019**	**10/02/2019**	**10/02/2019**	**10/02/2019**
Parameters	**Unit**				
General Chemistry					
Chloride	mg/L	0.28 U	--	--	--
Cyanide (total)	mg/L	0.0060 U	--	--	--
Fluoride	mg/L	0.024 U	--	--	--
Hardness	mg/L	33 U	--	--	--
Hardness, carbonate	mg/L	12 U	--	--	--
Hardness, magnesium	mg/L	21 U	--	--	--
Sulfate	mg/L	0.35 U	--	--	--
Sulfide	mg/L	0.58 U	--	--	--
Total dissolved solids (TDS)	mg/L	7.8 U	--	--	--
Nitrate (as N)	µg/L	14 U	--	--	--
Nitrite (as N)	µg/L	14 U	--	--	--
Fumigant					
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	0.0086 U	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	0.0087 U	--	--

Notes:

U - Not detected at the associated reporting limit
-- - Not applicable
PCBs - Polychlorinated Biphenyls
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
1,1,1-Trichloroethane	µg/L	--	0.24 U	--
1,1,2,2-Tetrachloroethane	µg/L	--	0.13 U	--
1,1,2-Trichloroethane	µg/L	--	0.090 U	--
1,1-Dichloroethane	µg/L	--	0.17 U	--
1,1-Dichloroethene	µg/L	--	0.19 U	--
1,2,4-Trichlorobenzene	µg/L	--	0.26 U	--
1,2-Dichlorobenzene	µg/L	--	0.15 U	--
1,2-Dichloroethane	µg/L	--	0.21 U	--
1,2-Dichloropropane	µg/L	--	0.15 U	--
1,3-Dichlorobenzene	µg/L	--	0.15 U	--
1,4-Dichlorobenzene	µg/L	--	0.16 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	1.2 U	--
2-Hexanone	µg/L	--	0.54 U	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	--	0.42 U	--
Acetone	µg/L	--	5.4 U	--
Benzene	µg/L	--	0.13 U	--
Bromodichloromethane	µg/L	--	0.17 U	--
Bromoform	µg/L	--	0.76 U	--
Bromomethane (Methyl bromide)	µg/L	--	0.42 U	--
Carbon disulfide	µg/L	--	0.28 U	--
Carbon tetrachloride	µg/L	--	0.26 U	--
Chlorobenzene	µg/L	--	0.14 U	--
Chloroethane	µg/L	--	0.83 U	--
Chloroform (Trichloromethane)	µg/L	--	0.13 U	--
Chloromethane (Methyl chloride)	µg/L	--	0.20 U	--
cis-1,2-Dichloroethene	µg/L	--	0.16 U	--
cis-1,3-Dichloropropene	µg/L	--	0.61 U	--
Cyclohexane	µg/L	--	0.24 U	--
Dibromochloromethane	µg/L	--	0.39 U	--
Dichlorodifluoromethane (CFC-12)	µg/L	--	0.35 U	--
Ethylbenzene	µg/L	--	0.11 U	--
Isopropyl benzene	µg/L	--	0.090 U	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Location ID:		**Trip Blank**	**Trip Blank**	**Trip Blank**
Sample Name:		**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
Sample Date:		**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Volatile Organic Compounds, BTEX				
m&p-Xylenes	µg/L	--	0.080 U	--
Methyl acetate	µg/L	--	1.7 U	--
Methyl cyclohexane	µg/L	--	0.33 U	--
Methyl tert butyl ether (MTBE)	µg/L	--	0.070 U	--
Methylene chloride	µg/L	--	2.6 U	--
o-Xylene	µg/L	--	0.090 U	--
Styrene	µg/L	--	0.10 U	--
Tetrachloroethene	µg/L	--	0.15 U	--
Toluene	µg/L	--	0.14 U	--
trans-1,2-Dichloroethene	µg/L	--	0.19 U	--
trans-1,3-Dichloropropene	µg/L	--	0.67 U	--
Trichloroethene	µg/L	--	0.10 U	--
Trichlorofluoromethane (CFC-11)	µg/L	--	0.45 U	--
Trifluorotrichloroethane (CFC-113)	µg/L	--	0.41 U	--
Vinyl chloride	µg/L	--	0.20 U	--
Xylenes (total)	µg/L	--	0.15 U	--
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--
2,4,5-Trichlorophenol	µg/L	--	--	--
2,4,6-Trichlorophenol	µg/L	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--
2,4-Dinitrotoluene	µg/L	--	--	--
2,6-Dinitrotoluene	µg/L	--	--	--
2-Chloronaphthalene	µg/L	--	--	--
2-Chlorophenol	µg/L	--	--	--
2-Methylnaphthalene	µg/L	--	--	--
2-Methylphenol	µg/L	--	--	--
2-Nitroaniline	µg/L	--	--	--
2-Nitrophenol	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
3&4-Methylphenol	µg/L	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--
3-Nitroaniline	µg/L	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--
4-Bromophenyl phenyl ether	µg/L	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--
4-Chloroaniline	µg/L	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--
4-Nitroaniline	µg/L	--	--	--
4-Nitrophenol	µg/L	--	--	--
Acenaphthene	µg/L	--	--	--
Acenaphthylene	µg/L	--	--	--
Acetophenone	µg/L	--	--	--
Anthracene	µg/L	--	--	--
Atrazine	µg/L	--	--	--
Benzaldehyde	µg/L	--	--	--
Benzo(a)anthracene	µg/L	--	--	--
Benzo(a)pyrene	µg/L	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--
Caprolactam	µg/L	--	--	--
Carbazole	µg/L	--	--	--
Chrysene	µg/L	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Semivolatile Organic Compounds				
Dibenzofuran	µg/L	--	--	--
Diethyl phthalate	µg/L	--	--	--
Dimethyl phthalate	µg/L	--	--	--
Fluoranthene	µg/L	--	--	--
Fluorene	µg/L	--	--	--
Hexachlorobenzene	µg/L	--	--	--
Hexachlorobutadiene	µg/L	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--
Hexachloroethane	µg/L	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--
Isophorone	µg/L	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--
Naphthalene	µg/L	--	--	--
Nitrobenzene	µg/L	--	--	--
Pentachlorophenol	µg/L	--	--	--
Phenanthrene	µg/L	--	--	--
Phenol	µg/L	--	--	--
Pyrene	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Herbicides				
2,4,5-T	µg/L	--	--	--
2,4,5-TP (Silvex)	µg/L	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--	--
PCBs				
Aroclor-1016 (PCB-1016)	µg/L	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--	--
Pesticides				
4,4'-DDD	µg/L	--	--	--
4,4'-DDE	µg/L	--	--	--
4,4'-DDT	µg/L	--	--	--
Aldrin	µg/L	--	--	--
alpha-BHC	µg/L	--	--	--
alpha-Chlordane	µg/L	--	--	--
beta-BHC	µg/L	--	--	--
delta-BHC	µg/L	--	--	--
Dieldrin	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Pesticides				
Endosulfan I	µg/L	--	--	--
Endosulfan II	µg/L	--	--	--
Endosulfan sulfate	µg/L	--	--	--
Endrin	µg/L	--	--	--
Endrin aldehyde	µg/L	--	--	--
Endrin ketone	µg/L	--	--	--
gamma-BHC (lindane)	µg/L	--	--	--
gamma-Chlordane	µg/L	--	--	--
Heptachlor	µg/L	--	--	--
Heptachlor epoxide	µg/L	--	--	--
Methoxychlor	µg/L	--	--	--
Toxaphene	µg/L	--	--	--
Metals				
Mercury	ng/L	--	--	0.14 U
Aluminum	µg/L	--	--	--
Aluminum (dissolved)	µg/L	--	--	--
Antimony	µg/L	--	--	--
Antimony (dissolved)	µg/L	--	--	--
Arsenic	µg/L	--	--	--
Arsenic (dissolved)	µg/L	--	--	--
Barium	µg/L	--	--	--
Barium (dissolved)	µg/L	--	--	--
Beryllium	µg/L	--	--	--
Beryllium (dissolved)	µg/L	--	--	--
Cadmium	µg/L	--	--	--
Cadmium (dissolved)	µg/L	--	--	--
Calcium	µg/L	--	--	--
Calcium (dissolved)	µg/L	--	--	--
Chromium	µg/L	--	--	--
Chromium (dissolved)	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
Metals				
Cobalt	µg/L	--	--	--
Cobalt (dissolved)	µg/L	--	--	--
Copper	µg/L	--	--	--
Copper (dissolved)	µg/L	--	--	--
Iron	µg/L	--	--	--
Iron (dissolved)	µg/L	--	--	--
Lead	µg/L	--	--	--
Lead (dissolved)	µg/L	--	--	--
Magnesium	µg/L	--	--	--
Magnesium (dissolved)	µg/L	--	--	--
Manganese	µg/L	--	--	--
Manganese (dissolved)	µg/L	--	--	--
Mercury	µg/L	--	--	--
Mercury (dissolved)	µg/L	--	--	--
Nickel	µg/L	--	--	--
Nickel (dissolved)	µg/L	--	--	--
Potassium	µg/L	--	--	--
Potassium (dissolved)	µg/L	--	--	--
Selenium	µg/L	--	--	--
Selenium (dissolved)	µg/L	--	--	--
Silver	µg/L	--	--	--
Silver (dissolved)	µg/L	--	--	--
Sodium	µg/L	--	--	--
Sodium (dissolved)	µg/L	--	--	--
Thallium	µg/L	--	--	--
Thallium (dissolved)	µg/L	--	--	--
Vanadium	µg/L	--	--	--
Vanadium (dissolved)	µg/L	--	--	--
Zinc	µg/L	--	--	--
Zinc (dissolved)	µg/L	--	--	--

Table 2B

Analytical Results Summary
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

	Location ID:	**Trip Blank**	**Trip Blank**	**Trip Blank**
	Sample Name:	**TB-100319-005**	**TB-100319-007**	**TB-100319-008**
	Sample Date:	**10/03/2019**	**10/03/2019**	**10/03/2019**
Parameters	**Unit**			
General Chemistry				
Chloride	mg/L	--	--	--
Cyanide (total)	mg/L	--	--	--
Fluoride	mg/L	--	--	--
Hardness	mg/L	--	--	--
Hardness, carbonate	mg/L	--	--	--
Hardness, magnesium	mg/L	--	--	--
Sulfate	mg/L	--	--	--
Sulfide	mg/L	--	--	--
Total dissolved solids (TDS)	mg/L	--	--	--
Nitrate (as N)	µg/L	--	--	--
Nitrite (as N)	µg/L	--	--	--
Fumigant				
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.0086 U	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0087 U	--	--

Notes:

U - Not detected at the associated reporting limit
-- - Not applicable
PCBs - Polychlorinated Biphenyls
BTEX - Benzene, Toluene, Ethylbenzene, and Xylene

Table 3

Analytical Methods
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Method	Matrix	Holding Time: Collection to Extraction (Days)	Holding Time: Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Water	-	14
Fumigants	SW-846 8011	Water	-	14
Semi-Volatile Organic Compounds (SVOCs)	SW-846 8270C	Water	7	40
Organochlorine Pesticides	SW-846 8081A	Water	7	40
Polychlorinated Biphenyls (PCBs)	SW-846 8082A	Water	up to one year	40
Chlorinated Herbicides	SW-846 8151A	Water	7	40
Total & Dissolved Metals	SW-846 6020	Water	-	180
Total & Dissolved Mercury	SW-846 7470A	Water	-	28
Low Level Mercury	EPA 1631	Water	-	28
Anions	EPA 300.0	Water	-	28 Nitrate and Nitrite - 48 hours
Total Cyanide	SW-846 9012A	Water	-	14
Sulfide	SM4500-S2	Water	-	7
Total Dissolved Solids (TDS)	SM2540C	Water	-	7
Hardness	SM2340	Water	-	180

Notes:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions
EPA - "Methods for Chemical Analysis of Water and Waste," EPA-600/4-79-020, revised March 1983, with subsequent revisions
SM - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
-- - Not applicable

Table 4

Qualified Sample Results Due to Holding Time Exceedance
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
Herbicides	SW-38443-100319-JPF-010	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-011	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-012	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-013	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-014	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L

Table 4

Qualified Sample Results Due to Holding Time Exceedance
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
Herbicides	SW-38443-100319-JPF-010	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
Herbicides	SW-38443-100319-JPF-015	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-016	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-017	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-018	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L
Herbicides	SW-38443-100319-JPF-019	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
				2,4-Dichlorophenoxyacetic acid (2,4-D)	2.2 UJ	µg/L

Table 4

Qualified Sample Results Due to Holding Time Exceedance
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
Herbicides	SW-38443-100319-JPF-010	8	7	2,4,5-T	0.57 UJ	µg/L
				2,4,5-TP (Silvex)	0.43 UJ	µg/L
General Chemistry	SW-38443-100219-JPF-001	8	2	Nitrate (as N)	R	
	SW-38443-100219-JPF-002	8	2	Nitrate (as N)	R	
	SW-38443-100219-JPF-003	8	2	Nitrate (as N)	R	
	SW-38443-100219-JPF-004	8	2	Nitrate (as N)	R	
	SW-38443-100219-JPF-005	8	2	Nitrate (as N)	R	
	SW-38443-100219-JPF-006	8	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-010	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-016	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-017	7	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-011	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-012	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-013	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-014	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-015	6	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-018	7	2	Nitrate (as N)	R	
	SW-38443-100319-JPF-019	7	2	Nitrate (as N)	R	

Notes:

R - Rejected
UJ - Not detected; associated reporting limit is estimated
N - Nitrogen

Table 5

Qualified Sample Results Due to Outlying Continuing Calibration Results
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
VOCs	1,1,2,2-Tetrachloroethane	10/15/2019	43	SW-38443-100319-JPF-010	0.13 UJ	µg/L
				SW-38443-100319-JPF-011	0.13 UJ	µg/L
				SW-38443-100319-JPF-012	0.13 UJ	µg/L
				SW-38443-100319-JPF-013	0.13 UJ	µg/L
				SW-38443-100319-JPF-014	0.13 UJ	µg/L
				SW-38443-100319-JPF-016	0.13 UJ	µg/L
				SW-38443-100319-JPF-018	0.13 UJ	µg/L
				SW-38443-100319-JPF-019	0.13 UJ	µg/L
VOCs	Acetone	10/15/2019	49	SW-38443-100319-JPF-010	5.4 UJ	µg/L
				SW-38443-100319-JPF-011	5.4 UJ	µg/L
				SW-38443-100319-JPF-012	5.4 UJ	µg/L
				SW-38443-100319-JPF-013	5.4 UJ	µg/L
				SW-38443-100319-JPF-014	5.4 UJ	µg/L
				SW-38443-100319-JPF-016	5.4 UJ	µg/L
				SW-38443-100319-JPF-018	5.4 UJ	µg/L
				SW-38443-100319-JPF-019	5.4 UJ	µg/L
VOCs	Bromoform	10/15/2019	26	SW-38443-100319-JPF-010	0.76 UJ	µg/L
				SW-38443-100319-JPF-011	0.76 UJ	µg/L
				SW-38443-100319-JPF-012	0.76 UJ	µg/L
				SW-38443-100319-JPF-013	0.76 UJ	µg/L
				SW-38443-100319-JPF-014	0.76 UJ	µg/L
				SW-38443-100319-JPF-016	0.76 UJ	µg/L
				SW-38443-100319-JPF-018	0.76 UJ	µg/L
				SW-38443-100319-JPF-019	0.76 UJ	µg/L

Table 5

Qualified Sample Results Due to Outlying Continuing Calibration Results
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
VOCs	1,1,2,2-Tetrachloroethane	10/16/2019	26	SW-38443-100319-JPF-015	0.13 UJ	µg/L
				SW-38443-100319-JPF-017	0.13 UJ	µg/L
Herbicides	2,4,5-T	10/14/2019	32	SW-38443-100319-JPF-010	0.57 UJ	µg/L
				SW-38443-100319-JPF-011	0.57 UJ	µg/L
				SW-38443-100319-JPF-012	0.57 UJ	µg/L
				SW-38443-100319-JPF-013	0.57 UJ	µg/L
				SW-38443-100319-JPF-014	0.57 UJ	µg/L
				SW-38443-100319-JPF-015	0.57 UJ	µg/L
				SW-38443-100319-JPF-016	0.57 UJ	µg/L
				SW-38443-100319-JPF-017	0.57 UJ	µg/L
				SW-38443-100319-JPF-018	0.57 UJ	µg/L
				SW-38443-100319-JPF-019	0.57 UJ	µg/L
Herbicides	2,4-Dichlorophenoxyacetic acid (2,4-D)	10/14/2019	32	SW-38443-100319-JPF-010	2.2 UJ	µg/L
				SW-38443-100319-JPF-011	2.2 UJ	µg/L
				SW-38443-100319-JPF-012	2.2 UJ	µg/L
				SW-38443-100319-JPF-013	2.2 UJ	µg/L
				SW-38443-100319-JPF-014	2.2 UJ	µg/L
				SW-38443-100319-JPF-015	2.2 UJ	µg/L
				SW-38443-100319-JPF-016	2.2 UJ	µg/L
				SW-38443-100319-JPF-017	2.2 UJ	µg/L
				SW-38443-100319-JPF-018	2.2 UJ	µg/L
				SW-38443-100319-JPF-019	2.2 UJ	µg/L

Notes:

%D - Percent difference
UJ - Not detected; associated reporting limit is estimated
VOCs - Volatile Organic Compounds

Table 6

Qualified Sample Results Due to Analyte Concentrations in the Instrument Blanks
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Analyte	Blank ID	Analysis Date (mm/dd/yyyy)	Blank Result	Sample ID	Original Result	Qualified Result	Units
Metals	Mercury	CCB	10/17/2019	0.46 J	SW-38443-100219-JPF-001	0.14 J	0.46 U	ng/L
					SW-38443-100219-JPF-002	0.17 J	0.46 U	ng/L
Metals	Mercury	CCB	10/18/2019	0.18 J	SW-38443-100219-JPF-007	0.33 J	0.33 U	ng/L
					SW-38443-100219-JPF-008	0.23 J	0.23 U	ng/L
					SW-38443-100219-JPF-009	0.23 J	0.23 U	ng/L
Metals	Mercury	CCB	10/11/2019	0.25 J	SW-38443-100319-JPF-010	0.15 J	0.25 U	ng/L
					SW-38443-100319-JPF-013	0.15 J	0.25 U	ng/L
					SW-38443-100319-JPF-017	0.15 J	0.25 U	ng/L
					SW-38443-100319-JPF-011	0.17 J	0.25 U	ng/L

Notes:

CCB - Continuing Calibration Blank
J - Estimated concentration
U - Not detected at the associated reporting limit

Table 7

Qualified Sample Results Due to Outlying MS/MSD Results
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
SVOCs	SW-38443-100319-JPF-014	4-Chloroaniline	NA	6	NA	10-120	35	R	
		Caprolactam	NA	6	NA	10-120	35	R	

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
R - Rejected
NA - Not Applicable
SVOCs - Semi-volatile Organic Compounds

Table 8

Qualified Sample Data Due to Analyte Concentrations in the Field Blanks
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Field Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Metals	SW-38443-100319-JPF-020	10/03/2019	Beryllium	0.63 J	SW-38443-100319-JPF-010	0.65 J	0.65 U	µg/L
					SW-38443-100319-JPF-014	0.46 J	0.63 U	µg/L
Metals	SW-38443-100319-JPF-020	10/03/2019	Beryllium (dissolved)	0.53 J	SW-38443-100319-JPF-014	0.72 J	0.72 U	µg/L
Metals	SW-38443-100319-JPF-020	10/03/2019	Thallium	0.82 J	SW-38443-100319-JPF-010	0.70 J	0.82 U	µg/L
					SW-38443-100319-JPF-014	0.46 J	0.82 U	µg/L
Metals	SW-38443-100319-JPF-020	10/03/2019	Thallium (dissolved)	0.63 J	SW-38443-100319-JPF-010	0.20 J	0.63 U	µg/L
					SW-38443-100319-JPF-014	0.75 J	0.75 U	µg/L

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 9

Qualified Sample Data Due to Variability in Field Duplicate Results
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Analyte	RPD	Diff	RL	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
Metals	Chromium (dissolved)	147	5.4	2.0	SW-38443-100219-JPF-007	6.4 J	SW-38443-100219-JPF-008	0.98 UJ	µg/L
	Nickel (dissolved)	91	2.5	2.0		4.0 J		1.5 UJ	µg/L
	Zinc (dissolved)	142	74	20		89 J		15 UJ	µg/L

Notes:

Diff - Difference (>1X RL for waters)
J - Estimated concentration
RL - Reporting Limit
RPD - Relative Percent Difference
UJ - Not detected; associated reporting limit is estimated

Table 10

Qualified Sample Data Due to Discrepancies Between Total and Dissolved Results
Quarry Pond Surface Water Sampling
ITW Corporate-South Dayton Dump and Landfill
Moraine, Ohio
October 2019

Parameter	Sample ID	Analyte	%D	Criteria (percent)	Qualified Total Result	Qualified Dissolved Result	Units
Metals	SW-38443-100219-JPF-001	Beryllium	37	20	0.57 J	0.78 J	µg/L
		Thallium	33		0.55 J	0.73 J	µg/L
Metals	SW-38443-100219-JPF-007	Chromium	553	20	0.98 UJ	6.4 J	µg/L
		Manganese	53		5.3 J	8.1 J	µg/L
		Nickel	167		1.5 UJ	4.0 J	µg/L
		Zinc	493		15 UJ	89 J	µg/L

Notes:

%D - Percent Difference
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Appendix E
Potential Fish Consumption Assessment

Memorandum

March 18, 2020

To:	Julian Hayward	Ref. No.:	038443-410
From:	April Gowing/we/76		
cc:	Daniel Smith		
Subject:	**Preliminary Human Health Risk Assessment for Quarry Pond Fish Consumption South Dayton Dump and Landfill Site, Moraine, Ohio**		

1. Introduction

This memorandum presents GHD's preliminary assessment of potential human health risks associated with consumption of fish from the Quarry Pond at the South Dayton Dump and Landfill Site. The assessment is based on analytical results of surface water and sediment samples collected in 2018/2019 as part of the Remedial Investigation/Feasibility Study (RI/FS). The purpose of this assessment is to determine the need for characterization of fish tissue in accordance with the RI/FS Work Plan (Section 7, page 97) which states the following:

> "The analytical results for surface water and sediment samples will allow conservative estimation of COC concentrations in fish tissue. Proposed sampling of Quarry Pond sediments will include estimation of both organic carbon and black carbon, which will allow estimation of bioavailable concentrations of PCBs and other substances in the sediments. Using typical methods (e.g., biota sediment accumulation factors or BSAFs), concentrations of bioaccumulative substances can then be estimated in fish tissue, for use in the risk assessment (ecological and HHRA). During field investigations information will be collected to estimate the quantity and type of fish present in the Quarry Pond, also for input to the risk assessment. This will be based on available information regarding size and depth of the pond and the morphoedaphic index (e.g., Ryder 1965)."

2. Surface Water and Sediment Data and COPC Identification

Surface Water Data

A comparison of the Quarry Pond surface water data to the surface water screening levels for consumption of organisms (National Recommended Water Quality Criteria - Human Health Criteria Table, Human Health for Consumption of Organisms only, (https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table),

accessed November 2019), identified the following parameters with maximum concentrations above the screening levels (as shown on Table 1):

- 1,2,4-trichlorobenzene
- Butyl benzlphthalate
- Arsenic
- Manganese
- Thallium
- Aroclor-1254

Three organic parameters (1,2,4-trichlorobenzene, butyl benzlphthalate, and Aroclor-1254) were detected as estimated values in 2018 surface water samples. However, these compounds were not detected in 2019 samples from the 32 surface water samples collected within the Quarry Pond. Given the low frequency of detection of these three parameters and since they have not been identified in the 2019 sampling event, these parameters should not be considered as chemicals of potential concern (COPCs) for the consumption of the organisms based on surface water quality in the Quarry Pond.

The screening level for manganese is based on organoleptic (taste and odor) effects and not based on ingestion of organisms in the surface water. Manganese was detected at concentrations above the screening levels at only three sample locations, and all other surface water concentrations were well below the screening level. GHD notes that the elevated concentrations of manganese occur only at depth within the Quarry Pond, due to sub-oxic conditions. Because fish avoid water with low dissolved oxygen, they would not come into contact with these high manganese concentrations. Therefore, manganese is not expected to be a concern for ingestion of fish. However, manganese has been conservatively carried forward as a surface water COPC for the consumption of organisms.

As a result, arsenic, manganese, and thallium are considered to be COPCs for the consumption of the organisms related to surface water conditions.

The surface water screening levels for consumption of organisms are very conservative for the Quarry Pond, given that they assume that an individual is consuming 17.5 grams per day (g/d) to 22 g/d of fish every day of the year (6,388 g/year [14 lbs/year] to 8,030 g/year [18 lbs/year]). Given the size of the Quarry Pond, there is not likely sufficient fish in the Pond to sustain this ingestion rate by multiple individuals as discussed further in Section 4.

Sediment Data

There are no sediment screening values for the consumption of fish exposure pathway. Therefore, all substances detected in sediment that were identified as bioaccumulative in Table 4-2 of USEPA (USEPA, 2000) were carried forward as COPCs. Table 2 presents the COPCs that were carried forward for the sediment to fish ingestion exposure pathway.

3. Risk Calculations and Results

As the Quarry Pond is located on private property, it is not expected that the pond would be routinely used for recreational fishing. However, due to the location of the Quarry Pond, a nearby adolescent or adult resident may be considered a trespasser. This trespasser could potentially catch fish from the Quarry Pond while trespassing and bring the fish home for the family to eat.

Exposure via ingestion of the fish from the Quarry Pond, would assume that the fish eater receptor includes both a child and adult who consumes fish caught from within the Quarry Pond by a trespasser. The fish eater is considered to consume these fish at a low frequency and not for subsistence purposes. A frequency of one meal of fish per month (0.4 pounds per meal for an adult and 0.2 pounds per meal for a child) during April to November is assumed given that the Quarry Pond is on private property, and trespassing to catch the fish may occur during warm weather conditions. The exposure assumption used to evaluate the fish eater are presented in Table 3. Based on these assumptions, an adult would consume 3 pounds per year and a child would consume 1.5 pounds per year, therefore a family of four would consume 9 pounds of fish per year. Potential fish tissue concentrations were calculated for both surface water and sediment. The fish tissue concentrations were estimated using a bioconcentration factor (BCF) and the 95 percent upper confidence limit of the mean concentration of the surface water as shown in Table 4. The fish tissue concentrations were estimated using a biota-sediment accumulation factor (BSAF) and the 95 percent upper confidence limit of the mean concentration of the sediment as shown in Table 5.

Based on these exposure assumption for a child and adult fish eater, the cancer risk and hazard quotient values are presented in Table 6. As shown in Table 6, the cancer risk (5E-05) is within the acceptable risk range of 1E-06 to 1E-04 and the hazard index (2) is above the acceptable target level of 1. The risk and hazards are summarized in Table 7, along with the summary of the target organs. As shown in Table 7, none of the individual HI values for the target organs are above 1. This demonstrates that the surface water screening levels are conservative for the Quarry Pond and that ingestion of the fish (related to uptake from surface water and sediment) from the Quarry Pond should not result in unacceptable risks and hazards.

It should be noted that the estimates of fish concentrations of PAH, PCBs, and chlordane due to sediment uptake are likely conservative. These concentrations were estimated with BSAFs that were based on the average sediment total organic carbon (TOC) concentration of 2.6%. However, in addition to regular organic carbon derived from decaying organic matter, Quarry Pond sediments have significant concentrations, about 1.06% on average, of soot black carbon (BC). As described in the literature and USEPA guidance (e.g., see Xia, 1998; Cornelissen et al., 2005; Driscoll et al., 2009; Lohman et al., 2005; Werner et al., 2010; USEPA, 2012), compared to regular organic carbon, BC has much higher binding capacity, an order of magnitude or more higher, to hydrophobic organic substances than other forms of TOC. Assuming that the BC had 10 times the binding capacity of regular organic carbon would suggest that the sediments behave as if the TOC concentration was 12%[1], instead of 2.6% used in estimating fish tissue concentrations with the BSAF. Using this effective TOC concentration would reduce estimated concentrations of PCBs, chlordane, and PAHs by about 78%. The calculated risk levels would be reduced similarly.

[1] Since TOC includes BC, the effective TOC concentration is (TOC-BC) + 1 0 * BC. This simplifies to TOC + 9 * BC, or 2.59% + 1.06% * 9 = 12.2%.

The second conservative element of estimating fish concentrations with BSAF is that much, probably most of the fish stocks in the Quarry Pond will not routinely feed on the bottom. Given the limnology of the Quarry Pond, the dominant recreational fish in this pond are likely sunfishes and bass. These species will feed primarily on the water column and the macrophyte (aquatic weed) food chains, rather than the sediment food chain. Fish bioaccumulation of chemicals from the water column and macrophyte food chains will be lower than for fish feeding on sediment food chain.

Therefore, the risks and hazard presented based on the average TOC concentration of 2.6% presented in Tables 6 and 7 are conservative and likely overestimate the risk and hazards to the receptors consuming fish from the Quarry Pond.

4. Estimate of Quarry Pond Fish Production

The potential yield of edible fish from the Quarry Pond was estimated with the widely used morphoedaphic index method (MEI) (Ryder, 1965; Ryder et al., 1974). The MEI is a simple ratio of average total dissolved solids (TDS), in mg/L, divided by average depth, in feet or meters. The relationship between the MEI and recreational fish yield was originally based on the fish yields of about 50 northern temperate lakes (Ryder, 1965). Since then, the method has been applied to estimate recreational fish yields in lakes and reservoirs across the world (e.g., see Henderson and Welcomme, 1974). The index has been criticized as a less effective predictor than other empirical prediction methods (e.g., see Downing et al., 1990, Hanson and Legget, 1982). However, these alternative models are generally more complicated and/or use predictors that, while having more obvious biological relevance (e.g., algal biomass, benthic biomass) are considerably more complicated to obtain. The MEI models are very valuable because of their simplicity and the relative ease of obtaining the necessary data to run the model. That is, measurements of total dissolved solids are much easier to obtain, and much more stable over time, than those for, for instance, chlorophyll a and macrobenthos biomass.

In the original paper, Ryder (1965) produced two models, one for lakes that were moderately to intensively fished by recreational anglers and a second model for lakes that had "restricted harvests or incomplete catch records". As predicted by the author, the two groups has distinct distributions in the relationship between fish yield (FY) vs. MEI. Linear best fit prediction models for both groups were developed. The model for fish yield, in lbs/acre/year, in the intensively fished lakes was as follows:

$$FY = 2.09 \times MEI^{0.4461} \qquad \text{Equation 1}$$

According to Ryder (1965), the best fit equation for the lakes with restrictions on fishing was essentially a parallel line as shown below:

$$FY = 0.1397 \times MEI^{0.4435} \qquad \text{Equation 2}$$

This would suggest that fish yield in the restricted fishing lakes would be about 1/20th that of moderately to heavily fished lakes. However, the latter equation apparently has a typographical error of some sort because

best fit regression of the actual data provided (and also depicted on Figure 1 of that document showing the data) produce the following equation.

$$FY = 0.68 \times MEI^{0.4744} \qquad \text{Equation 3}$$

Equation 3 suggests that fish yield in restricted fishing lakes would be about 1/3rd of that in intensively fished lakes. As Equation 3 is more conservative and, we believe, more correct, it will be used in the discussion below.

Equations 1 and 3 were applied to estimate potential recreational fish yield for the Quarry Pond. The Quarry Pond depths and area vary with hydrological conditions, but available data suggest a surface water area of about 13 acres and an average depth of about 16 feet deep. Total dissolved solid (TDS) was measured in both 2018 and 2019 surface water samples. The TDS results did not vary much across samples and sampling events, although TDS was somewhat higher in water samples collected from the deepest parts of the pond. The mean TDS for 2018 and 2019 samples were about 250 mg/L and 240 mg/L, respectively. Using the higher TDS value (250 mg/L), the MEI is equal to 15.6 mg/(L*ft). That is 250 mg/L divided by 16 feet.

Based on the surface water area of 13 acres, this MEI predicts recreational fish yields of about 92.8 and 32.7 lbs per year (FY of 7.11 lbs/acre/yr and 2.5 lbs/acre/yr), depending on whether the pond is intensively fished or restricted. These estimates pertain to fish on the fin, and cleaning and cooking losses reduce that mass by about 2/3rds or more (Zabik et al. 1993). Thus, the actual fish available for consumption are reduced to about 31 lbs and 11 lbs of fish/year on the table.

These estimates are affected by various sources of uncertainty. Thus, for example, lake productivity is largely due to inputs of phosphorus, which are typically dominated by fluvial inputs. The Quarry Pond is fed by groundwater, suggesting that its productivity will be low. The relatively low productivity of the Quarry Pond is also supported by visual observation – the pond's waters are relatively clear. On the other hand, small size a pond or lake (Scarborough and Peters, 1994; Downing, 2010) and presence of weed beds (e.g., see Wiley et al. 1984) might predict increased fish productivity. Given the small size of the Quarry Pond and presence of moderate but not high densities weed beds around the pond would suggest that the pond could have a higher fish production than is estimated by the above equations.

However, the primary factor controlling fish yield from the Quarry Pond is clearly its limited access. Access to the pond is severely limited by fencing and other constraints, and even trespassers' angling efficiency will be limited by exclusion of boats and interference with shoreline angling by the macrophyte beds. As such, only the perimeter of the Quarry Pond can be fished effectively, and much of the perimeter will be difficult to fish because of the high banks and dense terrestrial vegetation, along with line-tangling of the aquatic weeds.

Given this background, the lower estimate, for the corrected restricted fishing lakes is assumed to be a good, but still conservative estimate of potential fish yields from the Quarry Pond. As noted above, this model predicts a total yield for the Quarry Pond of about 11 lbs per year, of cooked fish. This value is lower than default ingestion rate of 14 lbs to 18 lbs per year, for a single person, used in the development of the surface water screening levels for consumption of organisms, which are therefore conservative.

The fish consumption values assumed in this risk assessment are also conservative. According the assumed ration of fish, an adult would consume 3 pounds per year and a child would consume 1.5 pounds per year. Hence, a single "typical" family of four would consume 9 pounds of fish per year, almost all of the fish that the Quarry Pond is predicted to produce. This illustrates the very limited amount of exposure that may exist related to potential fish tissue consumption.

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Table 1

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Surface Water Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Surface Water
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	ND	ND	µg/L	--	0/32	0.24	N/A	200000	N	N	ND
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/L	--	0/32	0.13	N/A	3	C	N	ND
79-00-5	1,1,2-Trichloroethane	ND	ND	µg/L	--	0/32	0.09	N/A	8.9	N	N	ND
75-34-3	1,1-Dichloroethane	ND	ND	µg/L	--	0/32	0.17	N/A	--	C	N	ND
75-35-4	1,1-Dichloroethene	ND	ND	µg/L	--	0/32	0.19	N/A	20000	N	N	ND
120-82-1	**1,2,4-Trichlorobenzene**	**0.41 J**	**0.41 J**	**µg/L**	**SW-1 (9/18/2018)**	**1/32**	**0.26**	**0.41**	**0.076**	**N**	**Y**	**ASV**
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/L	--	0/32	0.0086	N/A	--	C	N	ND
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	ND	ND	µg/L	--	0/32	0.0087	N/A	--	C	N	ND
95-50-1	1,2-Dichlorobenzene	ND	ND	µg/L	--	0/32	0.15	N/A	3000	N	N	ND
107-06-2	1,2-Dichloroethane	ND	ND	µg/L	--	0/32	0.21	N/A	650	C	N	ND
78-87-5	1,2-Dichloropropane	ND	ND	µg/L	--	0/32	0.15	N/A	31	N	N	ND
541-73-1	1,3-Dichlorobenzene	ND	ND	µg/L	--	0/32	0.15	N/A	10	N	N	ND
106-46-7	1,4-Dichlorobenzene	ND	ND	µg/L	--	0/32	0.16	N/A	900	C	N	ND
78-93-3	2-Butanone (Methyl ethyl ketone) (MEK)	2.9 J	2.9 J	µg/L	SW-1 (9/18/2018)	1/32	1.2	2.9	--	N	N	NOT BIO
591-78-6	2-Hexanone	1.1 J	1.1 J	µg/L	SW-1 (9/18/2018)	1/32	0.54	1.1	--	N	N	NOT BIO
108-10-1	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	0.88 J	0.88 J	µg/L	SW-1 (9/18/2018)	1/32	0.42	0.88	--	N	N	NOT BIO
67-64-1	Acetone	5.4 J	36	µg/L	SW-7 (9/20/2018)	3/32	5.4 - 13	36	--	N	N	NOT BIO
71-43-2	Benzene	0.21 J	0.21 J	µg/L	SW-1 (9/18/2018)	1/32	0.13 - 0.36	0.21	16	C	N	BSV
75-27-4	Bromodichloromethane	ND	ND	µg/L	--	0/32	0.17	N/A	27	C	N	ND
75-25-2	Bromoform	ND	ND	µg/L	--	0/32	0.76	N/A	120	C	N	ND
74-83-9	Bromomethane (Methyl bromide)	ND	ND	µg/L	--	0/32	0.42	N/A	10000	N	N	ND
75-15-0	Carbon disulfide	ND	ND	µg/L	--	0/32	0.28	N/A	--	N	N	ND
56-23-5	Carbon tetrachloride	ND	ND	µg/L	--	0/32	0.26	N/A	5	C	N	ND
108-90-7	Chlorobenzene	ND	ND	µg/L	--	0/32	0.14	N/A	800	N	N	ND
75-00-3	Chloroethane	ND	ND	µg/L	--	0/32	0.83	N/A	--	N	N	ND
67-66-3	Chloroform (Trichloromethane)	ND	ND	µg/L	--	0/32	0.13	N/A	2000	C	N	ND
74-87-3	Chloromethane (Methyl chloride)	ND	ND	µg/L	--	0/32	0.2	N/A	--	N	N	ND
156-59-2	cis-1,2-Dichloroethene	0.21 J	0.23 J	µg/L	SW-2 (10/2/2019)	3/32	0.16	0.23	--	N	N	NOT BIO
10061-01-5	cis-1,3-Dichloropropene	ND	ND	µg/L	--	0/32	0.61	N/A	12	C	N	ND
110-82-7	Cyclohexane	ND	ND	µg/L	--	0/32	0.24	N/A	--	N	N	ND
124-48-1	Dibromochloromethane	ND	ND	µg/L	--	0/32	0.39	N/A	21	C	N	ND
75-71-8	Dichlorodifluoromethane (CFC-12)	ND	ND	µg/L	--	0/32	0.35	N/A	--	N	N	ND
100-41-4	Ethylbenzene	0.11 J	0.34 J	µg/L	SW-1 (9/18/2018)	4/32	0.11	0.34	130	C	N	BSV
98-82-8	Isopropyl benzene	ND	ND	µg/L	--	0/32	0.09	N/A	--	N	N	ND
79-20-9	Methyl acetate	ND	ND	µg/L	--	0/32	1.7	N/A	--	N	N	ND
108-87-2	Methyl cyclohexane	ND	ND	µg/L	--	0/32	0.33	N/A	--	N	N	ND
1634-04-4	Methyl tert butyl ether (MTBE)	ND	ND	µg/L	--	0/32	0.07	N/A	--	C	N	ND
75-09-2	Methylene chloride	ND	ND	µg/L	--	0/32	2.6	N/A	1000	C	N	ND
100-42-5	Styrene	ND	ND	µg/L	--	0/32	0.1	N/A	--	N	N	ND
127-18-4	Tetrachloroethene	ND	ND	µg/L	--	0/32	0.15	N/A	29	C	N	ND

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CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Volatile Organic Compounds (cont.'d)											
108-88-3	Toluene	0.15 J	3.6	µg/L	SW-2 (9/19/2018)	17/32	0.14	3.6	520	N	N	BSV
156-60-5	trans-1,2-Dichloroethene	ND	ND	µg/L	--	0/32	0.19	N/A	4000	N	N	ND
10061-02-6	trans-1,3-Dichloropropene	ND	ND	µg/L	--	0/32	0.67	N/A	12	C	N	ND
79-01-6	Trichloroethene	0.14 J	0.35 J	µg/L	SW-2 (10/2/2019)	6/32	0.1	0.35	7	N	N	BSV
75-69-4	Trichlorofluoromethane (CFC-11)	ND	ND	µg/L	--	0/32	0.45	N/A	--	N	N	ND
76-13-1	Trifluorotrichloroethane (CFC-113)	ND	ND	µg/L	--	0/32	0.41	N/A	--	N	N	ND
75-01-4	Vinyl chloride	ND	ND	µg/L	--	0/32	0.2	N/A	1.6	C	N	ND
1330-20-7	Xylenes (total)	0.15 J	1.8 J	µg/L	SW-1 (9/18/2018)	15/32	0.15	1.8	--	N	N	NOT BIO
	Semi-Volatiles Organic Compounds											
108-60-1	2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ND	ND	µg/L	--	0/32	0.52 - 1.1	N/A	4000	N	N	ND
95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/L	--	0/32	1.9 - 4	N/A	600	N	N	ND
88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/L	--	0/32	1.7 - 3.6	N/A	2.8	N	N	ND
120-83-2	2,4-Dichlorophenol	ND	ND	µg/L	--	0/32	0.25 - 0.52	N/A	60	N	N	ND
105-67-9	2,4-Dimethylphenol	ND	ND	µg/L	--	0/32	0.49 - 1	N/A	3000	N	N	ND
51-28-5	2,4-Dinitrophenol	ND	ND	µg/L	--	0/32	5.9 - 12	N/A	300	N	N	ND
121-14-2	2,4-Dinitrotoluene	ND	ND	µg/L	--	0/32	2 - 4.1	N/A	1.7	C	N	ND
606-20-2	2,6-Dinitrotoluene	ND	ND	µg/L	--	0/32	2 - 4.3	N/A	--	C	N	ND
91-58-7	2-Chloronaphthalene	ND	ND	µg/L	--	0/32	0.46 - 0.97	N/A	1000	N	N	ND
95-57-8	2-Chlorophenol	ND	ND	µg/L	--	0/32	0.26 - 0.55	N/A	800	N	N	ND
91-57-6	2-Methylnaphthalene	0.12 J	0.15 J	µg/L	SW-7 (10/3/2019)	4/32	0.11 - 0.22	0.15	--	N	N	NOT BIO
95-48-7	2-Methylphenol	ND	ND	µg/L	--	0/32	0.2 - 0.42	N/A	--	N	N	ND
88-74-4	2-Nitroaniline	ND	ND	µg/L	--	0/32	0.49 - 1	N/A	--	N	N	ND
88-75-5	2-Nitrophenol	ND	ND	µg/L	--	0/32	0.54 - 1.1	N/A	--		N	ND
3/4-Cresol	3&4-Methylphenol	ND	ND	µg/L	--	0/32	0.18 - 0.38	N/A	--	N	N	ND
91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/L	--	0/32	1.1 - 2.3	N/A	0.15	C	N	ND
99-09-2	3-Nitroaniline	ND	ND	µg/L	--	0/32	0.54 - 1.1	N/A	--		N	ND
534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/L	--	0/32	2.7 - 5.6	N/A	30	N	N	ND
101-55-3	4-Bromophenyl phenyl ether	ND	ND	µg/L	--	0/32	0.48 - 1	N/A	--		N	ND
59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/L	--	0/32	0.28 - 0.59	N/A	2000	N	N	ND
106-47-8	4-Chloroaniline	ND	ND	µg/L	--	0/31	0.3 - 0.63	N/A	--	C	N	ND
7005-72-3	4-Chlorophenyl phenyl ether	ND	ND	µg/L	--	0/32	0.52 - 1.1	N/A	--		N	ND
100-01-6	4-Nitroaniline	ND	ND	µg/L	--	0/32	0.87 - 1.8	N/A	--	N	N	ND
100-02-7	4-Nitrophenol	ND	ND	µg/L	--	0/32	2.1 - 4.3	N/A	--		N	ND
83-32-9	Acenaphthene	ND	ND	µg/L	--	0/32	0.16 - 0.34	N/A	90	N	N	ND
208-96-8	Acenaphthylene	ND	ND	µg/L	--	0/32	0.12 - 0.25	N/A	90 (5)	N	N	ND
98-86-2	Acetophenone	ND	ND	µg/L	--	0/32	0.35 - 0.73	N/A	--	N	N	ND
120-12-7	Anthracene	ND	ND	µg/L	--	0/32	0.13 - 0.27	N/A	400	N	N	ND
1912-24-9	Atrazine	ND	ND	µg/L	--	0/32	0.91 - 1.9	N/A	--	C	N	ND
100-52-7	Benzaldehyde	ND	ND	µg/L	--	0/32	0.72 - 1.5	N/A	--	N	N	ND

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	Semi-Volatiles Organic Compounds (cont.'d)											
56-55-3	Benzo(a)anthracene	ND	ND	µg/L	--	0/32	0.16 - 0.34	N/A	0.0013	C	N	ND
50-32-8	Benzo(a)pyrene	ND	ND	µg/L	--	0/32	0.16 - 0.35	N/A	0.00013	C	N	ND
205-99-2	Benzo(b)fluoranthene	ND	ND	µg/L	--	0/32	0.15 - 0.31	N/A	0.0013	C	N	ND
191-24-2	Benzo(g,h,i)perylene	ND	ND	µg/L	--	0/32	0.17 - 0.36	N/A	30 (5)	N	N	ND
207-08-9	Benzo(k)fluoranthene	ND	ND	µg/L	--	0/32	0.13 - 0.28	N/A	0.013	C	N	ND
92-52-4	Biphenyl (1,1-Biphenyl)	ND	ND	µg/L	--	0/32	0.47 - 0.98	N/A	--	N	N	ND
111-91-1	bis(2-Chloroethoxy)methane	ND	ND	µg/L	--	0/32	0.43 - 0.91	N/A	--	N	N	ND
111-44-4	bis(2-Chloroethyl)ether	ND	ND	µg/L	--	0/32	0.38 - 0.8	N/A	2.2	C	N	ND
117-81-7	bis(2-Ethylhexyl)phthalate (DEHP)	ND	ND	µg/L	--	0/32	2.1 - 4.4	N/A	0.37	C	N	ND
85-68-7	**Butyl benzylphthalate (BBP)**	**7.9 J**	**7.9 J**	**µg/L**	**SW-10 (9/18/2018)**	**1/32**	**0.63 - 1.3**	**7.9**	**0.1**	**C**	**Y**	**ASV**
105-60-2	Caprolactam	ND	ND	µg/L	--	0/30	0.89 - 1.9	N/A	--	N	N	ND
86-74-8	Carbazole	ND	ND	µg/L	--	0/32	0.47 - 0.98	N/A	--		N	ND
218-01-9	Chrysene	ND	ND	µg/L	--	0/32	0.18 - 0.37	N/A	0.13	C	N	ND
53-70-3	Dibenz(a,h)anthracene	ND	ND	µg/L	--	0/32	0.14 - 0.3	N/A	0.00013	C	N	ND
132-64-9	Dibenzofuran	ND	ND	µg/L	--	0/32	0.53 - 1.1	N/A	--	N	N	ND
84-66-2	Diethyl phthalate	ND	ND	µg/L	--	0/32	3.6 - 7.6	N/A	600	N	N	ND
131-11-3	Dimethyl phthalate	ND	ND	µg/L	--	0/32	0.49 - 1	N/A	2000	N	N	ND
84-74-2	Di-n-butylphthalate (DBP)	ND	ND	µg/L	--	0/32	1.7 - 3.6	N/A	30	N	N	ND
117-84-0	Di-n-octyl phthalate (DnOP)	ND	ND	µg/L	--	0/32	0.78 - 1.6	N/A	--	N	N	ND
206-44-0	Fluoranthene	ND	ND	µg/L	--	0/32	0.15 - 0.32	N/A	20	N	N	ND
86-73-7	Fluorene	ND	ND	µg/L	--	0/32	0.16 - 0.34	N/A	70	N	N	ND
118-74-1	Hexachlorobenzene	ND	ND	µg/L	--	0/32	0.15 - 0.32	N/A	0.000079	C	N	ND
87-68-3	Hexachlorobutadiene	ND	ND	µg/L	--	0/32	0.52 - 1.1	N/A	0.01	C	N	ND
77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/L	--	0/32	1.7 - 3.5	N/A	4	N	N	ND
67-72-1	Hexachloroethane	ND	ND	µg/L	--	0/32	0.38 - 0.79	N/A	0.1	C	N	ND
193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	µg/L	--	0/32	0.13 - 0.27	N/A	0.0013	C	N	ND
78-59-1	Isophorone	ND	ND	µg/L	--	0/32	0.31 - 0.65	N/A	1800	C	N	ND
91-20-3	Naphthalene	0.15 J	1.1	µg/L	SW-7 (10/3/2019)	9/32	0.1 - 0.22	1.1	--	C	N	NOT BIO
98-95-3	Nitrobenzene	ND	ND	µg/L	--	0/32	0.49 - 1	N/A	600	C	N	ND
621-64-7	N-Nitrosodi-n-propylamine	ND	ND	µg/L	--	0/32	0.24 - 0.51	N/A	0.51	C	N	ND
86-30-6	N-Nitrosodiphenylamine	ND	ND	µg/L	--	0/32	0.42 - 0.88	N/A	6	C	N	ND
87-86-5	Pentachlorophenol	ND	ND	µg/L	--	0/32	3 - 6.2	N/A	0.04	C	N	ND
85-01-8	Phenanthrene	ND	ND	µg/L	--	0/32	0.16 - 0.33	N/A	30 (5)	N	N	ND
108-95-2	Phenol	0.32 J	0.32 J	µg/L	SW-2 (10/2/2019)	1/32	0.12 - 0.26	0.32	300000	N	N	BSV
129-00-0	Pyrene	ND	ND	µg/L	--	0/32	0.17 - 0.35	N/A	30	N	N	ND
	Metals											
7429-90-5	Aluminum	37 J	110	µg/L	SW-3 (9/20/2018)	6/32	34	110	--	N	N	NOT BIO
7440-36-0	Antimony	0.78 J	0.82 J	µg/L	SW-6 (10/3/2019)	3/32	0.57	0.82	640	N	N	BSV
7440-38-2	**Arsenic**	**1.6 J**	**14**	**µg/L**	**SW-2 (9/19/2018)**	**32/32**	**--**	**14**	**0.14**	**C**	**Y**	**ASV**
7440-39-3	Barium	65	250	µg/L	SW-2 (9/19/2018)	32/32	--	250	--	N	N	NOT BIO

Table 1

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Surface Water Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Surface Water
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Metals (cont.'d)											
7440-41-7	Beryllium	0.47 J	0.67 J	µg/L	SW-1 (9/18/2018)	5/32	0.31 - 0.65	0.67	--	N	N	NOT BIO
7440-43-9	Cadmium	ND	ND	µg/L	--	0/32	0.2 - 0.21	N/A	--	N	N	ND
7440-70-2	Calcium	35000	80000	µg/L	SW-2 (9/19/2018)	32/32	--	80000	--		N	NAT
7440-47-3	Chromium	ND	ND	µg/L	--	0/32	0.98	N/A	--	C	N	ND
7440-48-4	Cobalt	0.60 J	0.67 J	µg/L	SW-2 (10/2/2019)	3/32	0.19	0.67	--	N	N	NOT BIO
7440-50-8	Copper	ND	ND	µg/L	--	0/32	1.7	N/A	--	N	N	ND
57-12-5	Cyanide (total)	ND	ND	µg/L	--	0/32	0.006	N/A	400	N	N	ND
7439-89-6	Iron	47 J	7400	µg/L	SW-2 (9/19/2018)	14/32	47	7400	--	N	N	NOT BIO
7439-92-1	Lead	ND	ND	µg/L	--	0/32	0.45	N/A	--	C	N	ND
7439-95-4	Magnesium	23000	32000	µg/L	SW-2 (9/19/2018)	32/32	--	32000	--		N	NAT
7439-96-5	**Manganese**	**3.6 J**	**3000**	**µg/L**	**SW-2 (10/2/2019)**	**32/32**	**--**	**3000**	**100**	**N**	**Y**	**ASV**
7439-97-6	Mercury	ND	ND	µg/L	--	0/32	0.13	N/A	--	N	N	BIO
7440-02-0	Nickel	1.6 J	1.6 J	µg/L	SW-2 (10/2/2019)	1/32	1.5	1.6	4600	N	N	BSV
7440-09-7	Potassium	4900	6500	µg/L	SW-2 (9/19/2018)	32/32	--	6500	--		N	NAT
7782-49-2	Selenium	1.0 J	1.0 J	µg/L	SW-8 (10/3/2019)	1/32	0.89	1	4200	N	N	BSV
7440-22-4	Silver	ND	ND	µg/L	--	0/32	0.053	N/A	--	N	N	ND
7440-23-5	Sodium	17000	27000	µg/L	SW-2 (9/19/2018)	32/32	--	27000	--		N	NAT
7440-28-0	**Thallium**	**0.23 J**	**0.55 J**	**µg/L**	**SW-1 (10/2/2019)**	**2/32**	**0.2 - 0.82**	**0.55**	**0.47**	**N**	**Y**	**ASV**
7440-62-2	Vanadium	0.89 J	1.4 J	µg/L	SW-2 (9/19/2018)	3/32	0.82	1.4	--	N	N	NOT BIO
7440-66-6	Zinc	ND	ND	µg/L	--	0/32	15	N/A	26000	N	N	ND
	Polychlorinated Biphenyls											
12674-11-2	Aroclor-1016 (PCB-1016)	ND	ND	µg/L	--	0/32	0.053 - 0.58	N/A	0.000064	N	N	ND
11104-28-2	Aroclor-1221 (PCB-1221)	ND	ND	µg/L	--	0/32	0.054 - 0.59	N/A	0.000064	C	N	ND
11141-16-5	Aroclor-1232 (PCB-1232)	ND	ND	µg/L	--	0/32	0.07 - 0.76	N/A	0.000064	C	N	ND
53469-21-9	Aroclor-1242 (PCB-1242)	ND	ND	µg/L	--	0/32	0.072 - 0.78	N/A	0.000064	C	N	ND
12672-29-6	Aroclor-1248 (PCB-1248)	ND	ND	µg/L	--	0/32	0.048 - 0.52	N/A	0.000064	C	N	ND
11097-69-1	**Aroclor-1254 (PCB-1254)**	**0.074 J**	**0.074 J**	**µg/L**	**SW-2 (9/19/2018)**	**1/32**	**0.038 - 0.41**	**0.074**	**0.000064**	**C**	**Y**	**ASV**
11096-82-5	Aroclor-1260 (PCB-1260)	ND	ND	µg/L	--	0/32	0.044 - 0.47	N/A	0.000064	C	N	ND
	Pesticides											
72-54-8	4,4'-DDD	ND	ND	µg/L	--	0/32	0.005 - 0.27	N/A	0.00012	C	N	ND
72-55-9	4,4'-DDE	ND	ND	µg/L	--	0/32	0.0041 - 0.22	N/A	0.000018	C	N	ND
50-29-3	4,4'-DDT	ND	ND	µg/L	--	0/32	0.0046 - 0.25	N/A	0.00003	C	N	ND
309-00-2	Aldrin	ND	ND	µg/L	--	0/32	0.0023 - 0.12	N/A	0.00000077	C	N	ND
319-84-6	alpha-BHC	ND	ND	µg/L	--	0/32	0.0019 - 0.1	N/A	0.00039	C	N	ND
5103-71-9	alpha-Chlordane	ND	ND	µg/L	--	0/32	0.003 - 0.16	N/A	0.00032	C	N	ND
319-85-7	beta-BHC	ND	ND	µg/L	--	0/32	0.0044 - 0.24	N/A	0.014	C	N	ND
319-86-8	delta-BHC	ND	ND	µg/L	--	0/32	0.0041 - 0.22	N/A	0.01	C	N	ND
60-57-1	Dieldrin	ND	ND	µg/L	--	0/32	0.0022 - 0.11	N/A	0.0000012	C	N	ND

Table 1

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Surface Water Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Surface Water
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Pesticides (cont.'d)											
959-98-8	Endosulfan I	ND	ND	µg/L	--	0/32	0.0035 - 0.18	N/A	30	N	N	ND
33213-65-9	Endosulfan II	ND	ND	µg/L	--	0/32	0.0022 - 0.12	N/A	40	N	N	ND
1031-07-8	Endosulfan sulfate	ND	ND	µg/L	--	0/32	0.0035 - 0.19	N/A	40	N	N	ND
72-20-8	Endrin	ND	ND	µg/L	--	0/32	0.0024 - 0.12	N/A	0.03	N	N	ND
7421-93-4	Endrin aldehyde	ND	ND	µg/L	--	0/32	0.0044 - 0.24	N/A	1	N	N	ND
53494-70-5	Endrin ketone	ND	ND	µg/L	--	0/32	0.0038 - 0.21	N/A	--	N	N	ND
58-89-9	gamma-BHC (lindane)	ND	ND	µg/L	--	0/32	0.0024 - 0.13	N/A	4.4	C	N	ND
5103-74-2	gamma-Chlordane	ND	ND	µg/L	--	0/32	0.0048 - 0.25	N/A	0.00032	C	N	ND
76-44-8	Heptachlor	ND	ND	µg/L	--	0/32	0.0031 - 0.16	N/A	0.0000059	C	N	ND
1024-57-3	Heptachlor epoxide	ND	ND	µg/L	--	0/32	0.0025 - 0.13	N/A	0.000032	C	N	ND
72-43-5	Methoxychlor	ND	ND	µg/L	--	0/32	0.0045 - 0.24	N/A	0.02	N	N	ND
8001-35-2	Toxaphene	ND	ND	µg/L	--	0/32	0.055 - 2.8	N/A	0.0071	C	N	ND
	Herbicides											
93-76-5	2,4,5-T	ND	ND	µg/L	--	0/32	0.057 - 0.57	N/A	--	N	N	ND
93-72-1	2,4,5-TP (Silvex)	ND	ND	µg/L	--	0/32	0.43	N/A	400	N	N	ND
94-75-7	2,4-Dichlorophenoxyacetic acid (2,4-D)	ND	ND	µg/L	--	0/32	2.2	N/A	12000	N	N	ND

Notes:

(1) Minimum/maximum detected concentration.
(2) Based on data collected from 2013 - 2018 in sampling locations: SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10.
(3) National Recommended Water Quality Criteria - Human Health Criteria Table, Human Health for Consumption of Organisms only, (https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table), accessed November 2019.
(4) Rationale Codes

Selection Reason: Maximum detected above Screening Value (ASV)
Chemical detected and considered bioaccumulative according to OEPA (2017) (BIO).
Deletion Reason: Maximum detected below Screening Value (BSV)
Analyte not considered bioaccumulative according to OEPA (2017) (NOTBIO).
Analyte Not Detected (ND)
Naturally Occurring (NAT)

(5) No screening value available, surrogate screening value implemented as follows:

Chemical		Surrogate
acenaphthylene	-	acenaphthene
benzo(g,h,i)perylene	-	pyrene
phenanthrene	-	pyrene

Defintions:

N/A = Not Applicable
-- = Not Available
N = Noncarcinogen
C = Carcinogen
Y = Yes
N = No
J - Estimated concentration.
N - Tentatively identified compound.

Reference:

OEPA, 2017. Ohio Environmental Protection Agency (OEPA) Chapter 3745-1 Water Quality Standards, February 2017.

Table 2

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Sediment Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Sediment
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Volatile Organic Compounds											
71-55-6	1,1,1-Trichloroethane	ND	ND	µg/kg	--	0/27	1 - 6.9	N/A	--	N	N	ND
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/kg	--	0/27	1.8 - 12	N/A	--	C	N	ND
79-00-5	1,1,2-Trichloroethane	ND	ND	µg/kg	--	0/27	1.4 - 9.5	N/A	--	N	N	ND
75-34-3	1,1-Dichloroethane	ND	ND	µg/kg	--	0/27	0.86 - 5.8	N/A	--	C	N	ND
75-35-4	1,1-Dichloroethene	ND	ND	µg/kg	--	0/27	1.1 - 7.6	N/A	--	N	N	ND
120-82-1	1,2,4-Trichlorobenzene	ND	ND	µg/kg	--	0/27	0.71 - 4.8	N/A	--	N	N	ND
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/kg	--	0/27	4.4 - 30	N/A	--	C	N	ND
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	ND	ND	µg/kg	--	0/27	0.95 - 6.5	N/A	--	C	N	ND
95-50-1	1,2-Dichlorobenzene	ND	ND	µg/kg	--	0/27	1.4 - 9.3	N/A	--	N	N	ND
107-06-2	1,2-Dichloroethane	ND	ND	µg/kg	--	0/27	0.95 - 6.5	N/A	--	C	N	ND
78-87-5	1,2-Dichloropropane	ND	ND	µg/kg	--	0/27	1.1 - 7.1	N/A	--	N	N	ND
541-73-1	1,3-Dichlorobenzene	ND	ND	µg/kg	--	0/27	1 - 6.8	N/A	--	N	N	ND
106-46-7	1,4-Dichlorobenzene	ND	ND	µg/kg	--	0/27	1.1 - 7.4	N/A	--	C	N	ND
78-93-3	2-Butanone (Methyl ethyl ketone) (MEK)	5.2 J	73 J	µg/kg	SD-19: 0-0.5 ft BGS (9/24/2018)	21/27	4.4 - 13	73	--	N	N	NOTBIO
591-78-6	2-Hexanone	ND	ND	µg/kg	--	0/27	5 - 34	N/A	--	N	N	ND
108-10-1	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ND	ND	µg/kg	--	0/27	4.6 - 31	N/A	--	N	N	ND
67-64-1	Acetone	65	210	µg/kg	SD-19: 0-0.5 ft BGS (9/24/2018)	4/27	26 - 180	210	--	N	N	NOTBIO
71-43-2	Benzene	3.9 J	6.4 J	µg/kg	SD-20: 0-0.5 ft BGS (9/21/2018)	3/27	0.86 - 5.9	6.4	--	C	N	NOTBIO
75-27-4	Bromodichloromethane	ND	ND	µg/kg	--	0/27	0.84 - 5.7	N/A	--	C	N	ND
75-25-2	Bromoform	ND	ND	µg/kg	--	0/27	3 - 20	N/A	--	C	N	ND
74-83-9	Bromomethane (Methyl bromide)	ND	ND	µg/kg	--	0/27	1.2 - 8.3	N/A	--	N	N	ND
75-15-0	Carbon disulfide	ND	ND	µg/kg	--	0/27	1.4 - 9.8	N/A	--	N	N	ND
56-23-5	Carbon tetrachloride	ND	ND	µg/kg	--	0/27	4 - 27	N/A	--	C	N	ND
108-90-7	Chlorobenzene	ND	ND	µg/kg	--	0/27	1.1 - 7.7	N/A	--	N	N	ND
75-00-3	Chloroethane	ND	ND	µg/kg	--	0/27	1.5 - 10	N/A	--	N	N	ND
67-66-3	Chloroform (Trichloromethane)	ND	ND	µg/kg	--	0/27	0.97 - 6.6	N/A	--	C	N	ND
74-87-3	Chloromethane (Methyl chloride)	ND	ND	µg/kg	--	0/27	1.3 - 8.7	N/A	--	N	N	ND
156-59-2	cis-1,2-Dichloroethene	ND	ND	µg/kg	--	0/27	0.8 - 5.5	N/A	--	N	N	ND
10061-01-5	cis-1,3-Dichloropropene	ND	ND	µg/kg	--	0/27	1.8 - 12	N/A	--	C	N	ND
110-82-7	Cyclohexane	ND	ND	µg/kg	--	0/27	1.7 - 12	N/A	--	N	N	ND
124-48-1	Dibromochloromethane	ND	ND	µg/kg	--	0/27	3.4 - 23	N/A	--	C	N	ND
75-71-8	Dichlorodifluoromethane (CFC-12)	ND	ND	µg/kg	--	0/27	1.2 - 7.9	N/A	--	N	N	ND
100-41-4	Ethylbenzene	ND	ND	µg/kg	--	0/27	1.3 - 8.8	N/A	--	C	N	ND
98-82-8	Isopropyl benzene	ND	ND	µg/kg	--	0/27	1 - 7	N/A	--	N	N	ND
79-20-9	Methyl acetate	ND	ND	µg/kg	--	0/27	4.2 - 29	N/A	--	N	N	ND
108-87-2	Methyl cyclohexane	ND	ND	µg/kg	--	0/27	1.5 - 10	N/A	--	N	N	ND
1634-04-4	Methyl tert butyl ether (MTBE)	ND	ND	µg/kg	--	0/27	1 - 6.9	N/A	--	C	N	ND
75-09-2	Methylene chloride	ND	ND	µg/kg	--	0/27	15 - 100	N/A	--	N	N	ND
100-42-5	Styrene	ND	ND	µg/kg	--	0/27	1.4 - 9.7	N/A	--	N	N	ND
127-18-4	Tetrachloroethene	ND	ND	µg/kg	--	0/27	0.9 - 6.1	N/A	--	N	N	ND
108-88-3	Toluene	1.5 J	5.8 J	µg/kg	SD-01: 0-0.5 ft BGS (9/25/2018)	3/27	0.95 - 6.5	5.8	--	N	N	NOTBIO
156-60-5	trans-1,2-Dichloroethene	ND	ND	µg/kg	--	0/27	0.57 - 3.9	N/A	--	N	N	ND

Table 2

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Sediment Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Sediment
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Volatile Organic Compounds (cont.'d)											
10061-02-6	trans-1,3-Dichloropropene	4.7 J	4.7 J	µg/kg	SD-07: 0-0.5 ft BGS (9/25/2018)	1/27	1.3 - 8.7	4.7	--	C	N	NOTBIO
79-01-6	Trichloroethene	ND	ND	µg/kg	--	0/27	0.78 - 5.3	N/A	--	N	N	ND
75-69-4	Trichlorofluoromethane (CFC-11)	ND	ND	µg/kg	--	0/27	1.3 - 9	N/A	--	N	N	ND
76-13-1	Trifluorotrichloroethane (CFC-113)	ND	ND	µg/kg	--	0/27	1.6 - 11	N/A	--	N	N	ND
75-01-4	Vinyl chloride	ND	ND	µg/kg	--	0/27	1 - 7	N/A	--	C	N	ND
1330-20-7	Xylenes (total)	ND	ND	µg/kg	--	0/27	2 - 13	N/A	--	N	N	ND
	Semi-Volatiles Organic Compounds											
108-60-1	2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ND	ND	µg/kg	--	0/37	12 - 650	N/A	--	N	N	ND
95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/kg	--	0/37	86 - 4500	N/A	--	N	N	ND
88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/kg	--	0/37	79 - 4100	N/A	--	N	N	ND
120-83-2	2,4-Dichlorophenol	ND	ND	µg/kg	--	0/37	55 - 2900	N/A	--	N	N	ND
105-67-9	2,4-Dimethylphenol	ND	ND	µg/kg	--	0/37	50 - 2600	N/A	--	N	N	ND
51-28-5	2,4-Dinitrophenol	ND	ND	µg/kg	--	0/36	180 - 9200	N/A	--	N	N	ND
121-14-2	2,4-Dinitrotoluene	ND	ND	µg/kg	--	0/37	77 - 4000	N/A	--	C	N	ND
606-20-2	2,6-Dinitrotoluene	ND	ND	µg/kg	--	0/37	69 - 3600	N/A	--	C	N	ND
91-58-7	2-Chloronaphthalene	ND	ND	µg/kg	--	0/37	17 - 910	N/A	--	N	N	ND
95-57-8	2-Chlorophenol	ND	ND	µg/kg	--	0/37	12 - 650	N/A	--	N	N	ND
91-57-6	2-Methylnaphthalene	7.4 J	260 J	µg/kg	SD-17: 0-0.5 ft BGS (9/21/2018)	18/37	2.4 - 11	260 J	--	N	N	NOTBIO
95-48-7	2-Methylphenol	ND	ND	µg/kg	--	0/37	38 - 2000	N/A	--	N	N	ND
88-74-4	2-Nitroaniline	ND	ND	µg/kg	--	0/37	50 - 2600	N/A	--	n	N	ND
88-75-5	2-Nitrophenol	ND	ND	µg/kg	--	0/37	16 - 840	N/A	--		N	ND
3/4-Cresol	3&4-Methylphenol	ND	ND	µg/kg	--	0/37	36 - 1900	N/A	--	N	N	ND
91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/kg	--	0/37	53 - 2800	N/A	--	c	N	ND
99-09-2	3-Nitroaniline	ND	ND	µg/kg	--	0/37	61 - 3200	N/A	--		N	ND
534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/kg	--	0/37	99 - 5200	N/A	--	N	N	ND
101-55-3	4-Bromophenyl phenyl ether	ND	ND	µg/kg	--	0/37	17 - 910	N/A	--		N	ND
59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/kg	--	0/37	56 - 2900	N/A	--	N	N	ND
106-47-8	4-Chloroaniline	ND	ND	µg/kg	--	0/37	37 - 1900	N/A	--	C	N	ND
7005-72-3	4-Chlorophenyl phenyl ether	ND	ND	µg/kg	--	0/37	17 - 910	N/A	--		N	ND
100-01-6	4-Nitroaniline	ND	ND	µg/kg	--	0/37	74 - 3900	N/A	--	N	N	ND
100-02-7	4-Nitrophenol	ND	ND	µg/kg	--	0/37	120 - 6100	N/A	--		N	ND
83-32-9	**Acenaphthene**	**4.8 J**	**2900**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**22/37**	**3.5 - 16**	**2900**	**--**	**N**	**Y**	**BIO**
208-96-8	**Acenaphthylene**	**11 J**	**120**	**µg/kg**	**SD-05: 0.5-1.5 ft BGS (9/21/2018)**	**14/37**	**5 - 260**	**120**	**--**	**N**	**Y**	**BIO**
98-86-2	Acetophenone	ND	ND	µg/kg	--	0/37	14 - 710	N/A	--	N	N	ND
120-12-7	**Anthracene**	**5.7 J**	**7800**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**35/37**	**5.5 - 8.6**	**7800**	**--**	**N**	**Y**	**BIO**
1912-24-9	Atrazine	ND	ND	µg/kg	--	0/37	45 - 2300	N/A	--	C	N	ND
100-52-7	Benzaldehyde	ND	ND	µg/kg	--	0/37	28 - 1500	N/A	--	N	N	ND
56-55-3	**Benzo(a)anthracene**	**31 J**	**26000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**26000**	**--**	**C**	**Y**	**BIO**
50-32-8	**Benzo(a)pyrene**	**38**	**22000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**22000**	**--**	**C**	**Y**	**BIO**
205-99-2	**Benzo(b)fluoranthene**	**50**	**33000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**33000**	**--**	**C**	**Y**	**BIO**

Table 2

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Sediment Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Sediment
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Semi-Volatiles Organic Compounds (cont.'d)											
191-24-2	**Benzo(g,h,i)perylene**	**20 J**	**11000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**11000**	**--**	**N**	**Y**	**BIO**
207-08-9	**Benzo(k)fluoranthene**	**14 J**	**9300**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**9300**	**--**	**C**	**Y**	**BIO**
92-52-4	Biphenyl (1,1-Biphenyl)	ND	ND	µg/kg	--	0/37	21 - 1100	N/A	--	N	N	ND
111-91-1	bis(2-Chloroethoxy)methane	ND	ND	µg/kg	--	0/37	15 - 780	N/A	--	N	N	ND
111-44-4	bis(2-Chloroethyl)ether	ND	ND	µg/kg	--	0/37	15 - 780	N/A	--	C	N	ND
117-81-7	bis(2-Ethylhexyl)phthalate (DEHP)	120	560	µg/kg	SD-03: 0-0.5 ft BGS (9/21/2018)	9/37	63 - 3300	560	--	C	N	NOTBIO
85-68-7	Butyl benzylphthalate (BBP)	72	72	µg/kg	SD-13: 0-0.5 ft BGS (9/25/2018)	1/37	27 - 1400	72	--	C	N	NOTBIO
105-60-2	Caprolactam	ND	ND	µg/kg	--	0/37	93 - 4900	N/A	--	N	N	ND
86-74-8	Carbazole	35 J	5400	µg/kg	SD-17: 0-0.5 ft BGS (9/21/2018)	12/37	24 - 110	5400	--		N	NOTBIO
218-01-9	**Chrysene**	**38**	**29000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**29000**	**--**	**C**	**Y**	**BIO**
53-70-3	**Dibenz(a,h)anthracene**	**20 J**	**3700**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**21/37**	**8.6 - 40**	**3700**	**--**	**C**	**Y**	**BIO**
132-64-9	Dibenzofuran	22 J	1600 J	µg/kg	SD-17: 0-0.5 ft BGS (9/21/2018)	10/37	16 - 74	1600 J	--	N	N	NOTBIO
84-66-2	Diethyl phthalate	ND	ND	µg/kg	--	0/37	38 - 2000	N/A	--	N	N	ND
131-11-3	Dimethyl phthalate	ND	ND	µg/kg	--	0/37	17 - 910	N/A	--	N	N	ND
84-74-2	Di-n-butylphthalate (DBP)	2900	2900	µg/kg	SD-17D: 0.5-0.92 ft BSS (10/4/2019)	1/37	27 - 1400	2900	--	N	N	NOTBIO
117-84-0	Di-n-octyl phthalate (DnOP)	ND	ND	µg/kg	--	0/37	35 - 1800	N/A	--	N	N	ND
206-44-0	**Fluoranthene**	**67**	**59000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**59000**	**--**	**N**	**Y**	**BIO**
86-73-7	**Fluorene**	**5.1 J**	**3000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**26/37**	**3.8 - 16**	**3000**	**--**	**N**	**Y**	**BIO**
118-74-1	Hexachlorobenzene	ND	ND	µg/kg	--	0/37	3.5 - 180	N/A	--	C	N	ND
87-68-3	Hexachlorobutadiene	ND	ND	µg/kg	--	0/37	15 - 780	N/A	--	C	N	ND
77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/kg	--	0/34	77 - 4000	N/A	--	N	N	ND
67-72-1	Hexachloroethane	ND	ND	µg/kg	--	0/37	11 - 580	N/A	--	C	N	ND
193-39-5	**Indeno(1,2,3-cd)pyrene**	**20 J**	**11000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**36/37**	**15**	**11000**	**--**	**C**	**Y**	**BIO**
78-59-1	Isophorone	ND	ND	µg/kg	--	0/37	15 - 780	N/A	--	C	N	ND
91-20-3	Naphthalene	7.1 J	300 J	µg/kg	SD-17: 0-0.5 ft BGS (9/21/2018)	18/37	3 - 14	300 J	--	C	N	NOTBIO
98-95-3	Nitrobenzene	ND	ND	µg/kg	--	0/37	16 - 840	N/A	--	C	N	ND
621-64-7	N-Nitrosodi-n-propylamine	ND	ND	µg/kg	--	0/37	14 - 710	N/A	--	C	N	ND
86-30-6	N-Nitrosodiphenylamine	ND	ND	µg/kg	--	0/37	15 - 780	N/A	--	C	N	ND
87-86-5	Pentachlorophenol	ND	ND	µg/kg	--	0/37	72 - 3800	N/A	--	C	N	ND
85-01-8	**Phenanthrene**	**25**	**37000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**37000**	**--**	**N**	**Y**	**BIO**
108-95-2	Phenol	ND	ND	µg/kg	--	0/37	9.9 - 520	N/A	--	N	N	ND
129-00-0	**Pyrene**	**57**	**41000**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**37/37**	**--**	**41000**	**--**	**N**	**Y**	**BIO**
	Metals											
7429-90-5	Aluminum	1500	12000 J	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	27/27	--	12000	--	N	N	NOTBIO
7440-36-0	Antimony	0.12 J	0.76	mg/kg	SD-05: 0.5-1.5 ft BGS (9/21/2018)	24/27	0.16 - 0.66	0.76	--	N	N	NOTBIO
7440-38-2	**Arsenic**	**3**	**24**	**mg/kg**	**SD-10: 0-0.5 ft BGS (9/25/2018)**	**27/27**	**--**	**24**	**--**	**C**	**Y**	**BIO**
7440-39-3	Barium	19	290	mg/kg	SD-03: 0-0.5 ft BGS (9/21/2018)	27/27	--	290	--	N	N	NOTBIO
7440-41-7	Beryllium	0.12 J	0.89	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	22/27	0.13 - 0.47	0.89	--	N	N	NOTBIO
7440-43-9	**Cadmium**	**0.059 J**	**0.86**	**mg/kg**	**SD-06: 0.5-1.5 ft BGS (9/25/2018)**	**27/27**	**--**	**0.86**	**--**	**N**	**Y**	**BIO**
7440-70-2	Calcium	49000	210000	mg/kg	SD-15: 0-0.5 ft BGS (9/26/2018)	27/27	--	210000	--		N	NOTBIO, NAT
7440-47-3	**Chromium**	**3.7**	**20**	**mg/kg**	**SD-06: 0.5-1.5 ft BGS (9/25/2018)**	**27/27**	**--**	**20**	**--**	**C**	**Y**	**BIO**
7440-48-4	Cobalt	2.4	11	mg/kg	SD-11: 0.5-1.5 ft BGS (9/25/2018)	27/27	--	11	--	N	N	NOTBIO

Table 2

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Sediment Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Sediment
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Metals (cont.'d)											
7440-50-8	**Copper**	**2.9**	**39**	**mg/kg**	**SD-06: 0.5-1.5 ft BGS (9/25/2018)**	**27/27**	**--**	**39**	**--**	**N**	**Y**	**BIO**
57-12-5	Cyanide (total)	0.58 J	2.6	mg/kg	SD-15: 0-0.5 ft BGS (9/26/2018)	6/27	0.24 - 1.1	2.6	--	N	N	NOTBIO
7439-89-6	Iron	5600	25000	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	27/27	--	25000	--	N	N	NOTBIO
7439-92-1	**Lead**	**3.2**	**140**	**mg/kg**	**SD-01: 0-0.5 ft BGS (9/25/2018)**	**27/27**	**--**	**140**	**--**	**C**	**Y**	**BIO**
7439-95-4	Magnesium	14000	63000	mg/kg	SD-16: 0-0.5 ft BGS (9/26/2018)	27/27	--	63000	--		N	NOTBIO, NAT
7439-96-5	Manganese	240	1000	mg/kg	SD-11: 0.5-1.5 ft BGS (9/25/2018)	27/27	--	1000	--	N	N	NOTBIO
7439-97-6	Mercury	0.049 J	0.17 J	mg/kg	SD-04: 0.5-1.5 ft BGS (9/21/2018)	20/27	0.021 - 0.1	0.17	--	N	N	NOTBIO
22967-92-6	**Methyl mercury**	**0.00014 J**	**0.00069**	**mg/kg**	**SD-14: 0-0.5 ft BGS (9/26/2018)**	**15/27**	**.000087 - 0.0004**	**0.00069**	**--**	**N**	**Y**	**BIO**
7440-02-0	**Nickel**	**4.1**	**26**	**mg/kg**	**SD-11: 0.5-1.5 ft BGS (9/25/2018)**	**27/27**	**--**	**26**	**--**	**N**	**Y**	**BIO**
7440-09-7	Potassium	28	2000 J	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	27/27	--	2000	--		N	NOTBIO, NAT
7782-49-2	**Selenium**	**0.14 J**	**1.8 J**	**mg/kg**	**SD-03: 0-0.5 ft BGS (9/21/2018)**	**26/27**	**0.12 - 0.16**	**1.8**	**--**	**N**	**Y**	**BIO**
7440-22-4	**Silver**	**0.049 J**	**0.35 J**	**mg/kg**	**SD-07: 0-0.5 ft BGS (9/25/2018)**	**22/27**	**0.022 - 0.12**	**0.35**	**--**	**N**	**Y**	**BIO**
7440-23-5	Sodium	120 J	380 J	mg/kg	SD-03: 0-0.5 ft BGS (9/21/2018)	27/27	--	380	--		N	NOTBIO, NAT
7440-28-0	Thallium	0.073 J	0.55 J	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	27/27	--	0.55	--	N	N	NOTBIO
7440-62-2	Vanadium	6.1	29	mg/kg	SD-10: 0-0.5 ft BGS (9/25/2018)	27/27	--	29	--	N	N	NOTBIO
7440-66-6	**Zinc**	**13**	**390**	**mg/kg**	**SD-06: 0.5-1.5 ft BGS (9/25/2018)**	**27/27**	**--**	**390**	**--**	**N**	**Y**	**BIO**
	Polychlorinated Biphenyls											
12674-11-2	Aroclor-1016 (PCB-1016)	ND	ND	µg/kg	--	0/27	26 - 120	N/A	--	N	N	ND
11104-28-2	Aroclor-1221 (PCB-1221)	ND	ND	µg/kg	--	0/27	29 - 130	N/A	--	C	N	ND
11141-16-5	Aroclor-1232 (PCB-1232)	ND	ND	µg/kg	--	0/27	28 - 130	N/A	--	C	N	ND
53469-21-9	**Aroclor-1242 (PCB-1242)**	**43 J**	**130 J**	**µg/kg**	**SD-13: 0-0.5 ft BGS (9/25/2018)**	**10/27**	**23 - 100**	**130**	**--**	**C**	**Y**	**BIO**
12672-29-6	Aroclor-1248 (PCB-1248)	ND	ND	µg/kg	--	0/27	29 - 130	N/A	--	C	N	ND
11097-69-1	**Aroclor-1254 (PCB-1254)**	**69 J**	**420**	**µg/kg**	**SD-17: 0-0.5 ft BGS (9/21/2018)**	**4/27**	**28 - 130**	**420**	**--**	**C**	**Y**	**BIO**
11096-82-5	Aroclor-1260 (PCB-1260)	ND	ND	µg/kg	--	0/27	26 - 120	N/A	--	C	N	ND
	Pesticides											
72-54-8	4,4'-DDD	ND	ND	µg/kg	--	0/27	2 - 540	N/A	--	C	N	ND
72-55-9	4,4'-DDE	ND	ND	µg/kg	--	0/27	1.8 - 49	N/A	--	C	N	ND
50-29-3	4,4'-DDT	ND	ND	µg/kg	--	0/27	1.5 - 410	N/A	--	C	N	ND
309-00-2	Aldrin	ND	ND	µg/kg	--	0/27	0.92 - 25	N/A	--	C	N	ND
319-84-6	alpha-BHC	ND	ND	µg/kg	--	0/27	1.2 - 330	N/A	--	C	N	ND
5103-71-9	**alpha-Chlordane**	**5.5 J**	**5.5 J**	**µg/kg**	**SD-05: 0.5-1.5 ft BGS (9/21/2018)**	**1/27**	**1.8 - 48**	**5.5**	**--**	**C**	**Y**	**BIO**
319-85-7	beta-BHC	ND	ND	µg/kg	--	0/27	2.1 - 56	N/A	--	C	N	ND
319-86-8	delta-BHC	ND	ND	µg/kg	--	0/26	40 - 970	N/A	--	C	N	ND
60-57-1	Dieldrin	ND	ND	µg/kg	--	0/27	1.3 - 35	N/A	--	C	N	ND
959-98-8	Endosulfan I	ND	ND	µg/kg	--	0/27	1.4 - 39	N/A	--	N	N	ND
33213-65-9	Endosulfan II	ND	ND	µg/kg	--	0/27	1.8 - 48	N/A	--	N	N	ND
1031-07-8	Endosulfan sulfate	ND	ND	µg/kg	--	0/27	1.7 - 470	N/A	--	N	N	ND
72-20-8	Endrin	ND	ND	µg/kg	--	0/27	2.3 - 61	N/A	--	N	N	ND
7421-93-4	Endrin aldehyde	ND	ND	µg/kg	--	0/27	1.6 - 760	N/A	--	N	N	ND
53494-70-5	Endrin ketone	ND	ND	µg/kg	--	0/27	1.1 - 180	N/A	--	N	N	ND

Table 2

Occurrence, Distribution, and Identification of Chemicals of Potential Concern (COPCs) in Quarry Pond Sediment Bioaccumulation to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Quarry Pond Sediment
Exposure Medium: Fish Tissue

CAS Number	Chemical	Minimum Concentration (1, 2)	Maximum Concentration (1, 2)	Units	Location of Maximum Concentration	Detection Frequency (2)	Range of Detection Limits (2)	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
	Pesticides (cont.'d)											
58-89-9	gamma-BHC (lindane)	ND	ND	µg/kg	--	0/27	2.4 - 650	N/A	--	C	N	ND
5103-74-2	**gamma-Chlordane**	**2.3 J**	**12 J**	**µg/kg**	**SD-14: 0-0.5 ft BGS (9/26/2018)**	**5/27**	**1.5 - 40**	**12**	**--**	**C**	**Y**	**BIO**
76-44-8	Heptachlor	ND	ND	µg/kg	--	0/27	1.9 - 51	N/A	--	C	N	ND
1024-57-3	Heptachlor epoxide	ND	ND	µg/kg	--	0/27	1.7 - 46	N/A	--	C	N	ND
72-43-5	Methoxychlor	ND	ND	µg/kg	--	0/27	7.9 - 1300	N/A	--	N	N	ND
8001-35-2	Toxaphene	ND	ND	µg/kg	--	0/27	30 - 800	N/A	--	C	N	ND
	Herbicides											
93-76-5	2,4,5-T	ND	ND	µg/kg	--	0/27	16 - 74	N/A	--	N	N	ND
93-72-1	2,4,5-TP (Silvex)	ND	ND	µg/kg	--	0/27	17 - 80	N/A	--	N	N	ND
94-75-7	2,4-Dichlorophenoxyacetic acid (2,4-D)	ND	ND	µg/kg	--	0/27	59 - 280	N/A	--	N	N	ND

Notes:

(1) Minimum/maximum detected concentration.
(2) Based on data collected from sampling locations: SD-01, SD-02, SD-03, SD-04, SD-05, SD-06, SD-07, SD-08, SD-10, SD-11, SD-12, SD-13, SD-14, SD-15, SD-16, SD-17, SD-18, SD-19, SD-20.
(3) Rationale Codes

Selection Reason : Chemical detected and considered bioaccumulative according to USEPA (2000) (BIO).
Deletion Reason : Analyte not considered bioaccumulative according to USEPA (2000) (NOTBIO).
Analyte Not Detected (ND)
Naturally Occurring (NAT)

Defintions:

N/A = Not Applicable
-- = Not Available
N = Noncarcinogen
C = Carcinogen
Y = Yes
N = No
J - Estimated concentration.

References:

USEPA. 2000. Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment. Table 4-2.

Table 3

Values Used for Daily Intake Calculations - Angler Exposure to Fish
South Dayton Dump Site
Moraine, Ohio

Medium: Sediment/ Surface Water
Exposure Medium: Fish Tissue
Receptor Population: Fisher Eater
Receptor Age: Child and Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cfish	Concentration in Fish Tissue	mg/kg	(1)	(1)	Chronic Daily Intake (CDI) (mg/kg-day) =
	CRfish - child	Consumption Rate of Fish	kg/meal	0.085	OEPA, 2019 (3)	Ifish x EF x ED x 1/BW x 1/AT
	CRfish - adult	Consumption Rate of Fish	kg/meal	0.17	OEPA, 2019	
	M-CRfish	Mutagenic Consumption Rate of Fish	yr/meal	0.27	USEPA, 2005 (4)	Ifish (mg/day) =
	F	Fraction of Fish Consumed that is Contaminated	unitless	1	USEPA, 2005a	Cfish x CRfish x F
	EF	Exposure Frequency	meals/year	8	Professional Judgment (2)	
	ED - child	Exposure Duration	years	6	USEPA, 2004	Mutagenic CDI (mg/kg-day) =
	ED - adult	Exposure Duration	years	20	USEPA, 2014	M-Ifish x EF x 1/AT
	BW - child	Body Weight	kg	15	USEPA, 2002	
	BW - adult	Body Weight	kg	80	USEPA, 2014	where M-Ifish (mg-yr/kg-meal) =
	AT-C	Averaging Time (cancer)	days	25,550	USEPA, 1989	Cfish x M-CRfish
	AT-N (child)	Averaging Time (non-cancer) (ED-child x 365 days/year)	days	2,190	USEPA, 1989	
	AT-N (adult)	Averaging Time (non-cancer) (ED-adult x 365 days/year)	days	7,300	USEPA, 1989	

Notes:

(1) For surface water bioaccumulation to fish concentrations, refer to Table 4. For sediment bioaccumulation to fish concentrations, refer to Table 5.
(2) Professional Judgement; based on 1 meal per month for the months of April throught to October (OPEA, 2019).
(3) Based on half the OEPA recommended fish serving size for an adult (6 oz).
(4) Mutagenic fish ingestion factor calculated using default age-dependent adjustment factor of 10 for ages 0-2 year, 3 for ages >2 to 16 years, and 1 for ages >16 years as applied for carcinogens that act via a mutagenic mode of action.

References:

OEPA, 2019: Ohio Sport Fish Consumption Advisory, Ohio Environmental Protection Agency, March 2019.
USEPA, 1989: Risk Assessment Guidance for Superfund (RAGS): Volume 1 – Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December 1989.
USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, OSWER 9355.4-24, December 2002.
USEPA, 2004: Risk Assessment Guidance for Superfund (RAGS):Volume 1 - Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), EPA/540/R/99/005, July 2004.
USEPA, 2005a: Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities, EPA/530-R-05-006, September 2005.
USEPA, 2005: Guidelines for Carcinogenic Risk Assessment and Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens, March 2005.
USEPA, 2014: Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors, OSWER Directive 9200.1-120, February 2014.

Table 4

Fish Concentration from Bioaccumulation Factors Using Surface Water Concentrations
South Dayton Dump Site
Moraine, Ohio

Inorganics = $C_{fish} = (C_{sw} \times BCF)$

Chemical of Potential Concern	Surface Water Concentration C_{sw} (mg/L)	Bioconcentration Factor BCF_{fish} (L/kg)	Ref	Fish Tissue Concentration C_{fish} (mg/kg)
Metals				
Arsenic	5.00E-03	4.00E+00	USEPA, 1980	2.00E-02
Manganese	7.52E-01	2.20E+02 (1)	ODEQ, 2010	1.65E+02
Thallium	2.83E-04	3.40E+01	USEPA, 1980	9.62E-03

Note:

(1) BCF is the maximum freshwater BCF as presented in Table 5 (ODEQ, 2010).

Reference:

USEPA, 1980: Ambient Water Quality Criteria, October 1980.
ODEQ, 2010: Attachment D, Water Quality Standards Review and Recommendations: Iron and Manganese, Oregon DEQ, December 9, 2010 EQC Meeting (https://www.oregon.gov/deq/FilterDocs/AttDIssuePaperFeMn.pdf).

Table 5

Fish Concentration from Bioaccumulation Factors Using Sediment Concentrations
South Dayton Dump Site
Moraine, Ohio

Organics = $C_{fish} = (C_{sb} \times f_{lipid} \times BSAF) / OC_{sed}$ Inorganics = $C_{fish} = (C_{sb} \times BSAF)$

Chemical of Potential Concern	Sediment Concentration C_{sb} (mg/kg)	Biota-Sediment Accumulation Factor $BSAF_{fish}$ ((mg/kg)/(mg/kg))	Ref	Fish Lipid Content (1) f_{lipid} -	Fraction of Organic Carbon in Bottom Sediment OC_{sed} -	Fish Tissue Concentration (2,3) C_{fish} (mg/kg)
SVOCs						
Acenaphthene	1.28E-01	1.49E-02	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.46E-03
Acenaphthylene	2.25E-02	7.23E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.25E-04
Anthracene	1.23E+00	9.80E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	9.28E-03
Benzo(a)anthracene	4.20E+00	2.31E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	7.46E-03
Benzo(a)pyrene	3.63E+00	5.74E-04	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.60E-03
Benzo(b)fluoranthene	5.36E+00	3.86E-04	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.59E-03
Benzo(g,h,i)perylene	1.84E+00	1.09E-04	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.55E-04
Benzo(k)fluoranthene	1.59E+00	3.86E-04	Thomann and Komlos 1999	2.00E-02	2.60E-02	4.72E-04
Chrysene	4.65E+00	2.02E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	7.23E-03
Dibenz(a,h)anthracene	2.22E-01	8.02E-05	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.37E-05
Fluoranthene	9.43E+00	6.33E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	4.59E-02
Fluorene	1.38E-01	1.29E-02	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.37E-03
Indeno(1,2,3-cd)pyrene	1.82E+00	7.89E-05	Thomann and Komlos 1999	2.00E-02	2.60E-02	1.10E-04
Phenanthrene	5.82E+00	9.57E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	4.28E-02
Pyrene	6.68E+00	7.47E-03	Thomann and Komlos 1999	2.00E-02	2.60E-02	3.84E-02
Metals						
Arsenic	1.35E+01	Regression	Bechtel Jacobs, 1998	NA	NA	9.06E-01
Cadmium	4.66E-01	Regression	Bechtel Jacobs, 1998	NA	NA	1.61E-01
Chromium	1.55E+01	Regression	Bechtel Jacobs, 1998	NA	NA	1.10E+00
Copper	2.64E+01	Regression	Bechtel Jacobs, 1998	NA	NA	7.62E+00
Lead	4.72E+01	Regression	Bechtel Jacobs, 1998	NA	NA	9.17E-01
Methyl mercury	3.34E-04	1.43E+01	(4)	NA	NA	4.78E-03
Nickel	1.81E+01	Regression	Bechtel Jacobs, 1998	NA	NA	2.21E+00
Selenium	9.74E-01	2.50E-01	(5)	NA	NA	2.44E-01
Silver	1.16E-01	2.50E-01	(5)	NA	NA	2.90E-02
Zinc	1.24E+02	Regression	Bechtel Jacobs, 1998	NA	NA	4.30E+01
Polychlorinated Biphenyls						
Aroclor-1242 (PCB-1242)	5.42E-02	2.00E+00	USEPA, 2005	2.00E-02	2.60E-02	8.33E-02
Aroclor-1254 (PCB-1254)	1.22E-01	2.00E+00	USEPA, 2005	2.00E-02	2.60E-02	1.87E-01
Pesticides						
alpha-Chlordane	5.50E-03	2.00E+00	USEPA, 2005	2.00E-02	2.60E-02	8.46E-03
gamma-Chlordane	3.40E-03	2.00E+00	USEPA, 2005	2.00E-02	2.60E-02	5.23E-03

Notes:

(1) The Quarry Pond is warm water habitat with fringe of macrophyte beds. Thus, dominant fish will likely be those adapted to reproduction in small ponds, notably sunfish, predatory bass, and bullheads. EPA (1995) surveyed lipid levels in edible portions of fish native to the Great Lakes, and found that these species had low lipid levels in edible tissues; i.e., less than 1% lipid in the bluegills and largemouth bass and less than 2% in the bullheads. Thus, an average of 2% lipid was used as a conservative value.
(2) Except for metals, C_{fish} calculated consistent with USEPA (2005) equation.
(3) C_{fish} for metals calculated based on Bechtel Jacobs (1998) models for benthos.
(4) Geometric mean of Median Site BSAF (Amec Foster Wheeler Technical Memorandum, 2017).
(5) Dry weight fish to dry weight sediment BSAF of 1.0, divided by 4 to yield wet weight concentrations in fish.

Reference:

Amec Foster Wheeler Technical Memorandum, Penobscot River Phase III Engineering Study, WO3A-010 Task 2 BSAF Calculations, Summary of Biota-Sediment Accumulation Factor Evaluation, Amec Foster Wheeler Project No. 3616166052, September 14, 2017.
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Thomann, R. V. and J. Komlos. 1999. Model of biota-sediment accumulation factor for polycyclic aromatic hydrocarbons. Environ. Toxicol. Chem. 18: 1060–1068.
USEPA, 1995. Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors. Office of Water EPA-820-B-95-005 March 1995
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Table 6

Calculation of Chemical Cancer Risks and Non-Cancer Hazards for Fish Eater
South Dayton Dump Site
Moraine, Ohio

Receptor Population: Fish Eater
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemicals of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer	Intake/Exposure Concentration		RfD/RfC		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Sediment	Fish	Quarry Pond	Ingestion	Acenaphthene	1.46E-03	mg/kg	3.50E-08	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.82E-07	mg/kg-d	6.00E-02	mg/kg-d	3E-06
				Acenaphthylene	1.25E-04	mg/kg	3.00E-09	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.55E-08	mg/kg-d	6.00E-02	mg/kg-d	3E-07
				Anthracene	9.28E-03	mg/kg	2.22E-07	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.15E-06	mg/kg-d	3.00E-01	mg/kg-d	4E-06
				Benzo(a)anthracene	7.46E-03	mg/kg	1.79E-07	mg/kg-d	1.00E-01	$(mg/kg\text{-}d)^{-1}$	2E-08	9.27E-07	mg/kg-d	--	mg/kg-d	NC
				Benzo(a)pyrene	1.60E-03	mg/kg	3.84E-08	mg/kg-d	1.00E+00	$(mg/kg\text{-}d)^{-1}$	4E-08	1.99E-07	mg/kg-d	3.00E-04	mg/kg-d	7E-04
				Benzo(b)fluoranthene	1.59E-03	mg/kg	3.81E-08	mg/kg-d	1.00E-01	$(mg/kg\text{-}d)^{-1}$	4E-09	1.98E-07	mg/kg-d	--	mg/kg-d	NC
				Benzo(g,h,i)perylene	1.55E-04	mg/kg	3.70E-09	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.92E-08	mg/kg-d	3.00E-02	mg/kg-d	6E-07
				Benzo(k)fluoranthene	4.72E-04	mg/kg	1.13E-08	mg/kg-d	1.00E-02	$(mg/kg\text{-}d)^{-1}$	1E-10	5.86E-08	mg/kg-d	--	mg/kg-d	NC
				Chrysene	7.23E-03	mg/kg	1.73E-07	mg/kg-d	1.00E-03	$(mg/kg\text{-}d)^{-1}$	2E-10	8.97E-07	mg/kg-d	--	mg/kg-d	NC
				Dibenz(a,h)anthracene	1.37E-05	mg/kg	3.28E-10	mg/kg-d	1.00E+00	$(mg/kg\text{-}d)^{-1}$	3E-10	1.70E-09	mg/kg-d	--	mg/kg-d	NC
				Fluoranthene	4.59E-02	mg/kg	1.10E-06	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	5.70E-06	mg/kg-d	4.00E-02	mg/kg-d	1E-04
				Fluorene	1.37E-03	mg/kg	3.27E-08	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.70E-07	mg/kg-d	4.00E-02	mg/kg-d	4E-06
				Indeno(1,2,3-cd)pyrene	1.10E-04	mg/kg	2.64E-09	mg/kg-d	1.00E-01	$(mg/kg\text{-}d)^{-1}$	3E-10	1.37E-08	mg/kg-d	--	mg/kg-d	NC
				Phenanthrene	4.28E-02	mg/kg	1.03E-06	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	5.32E-06	mg/kg-d	3.00E-02	mg/kg-d	2E-04
				Pyrene	3.84E-02	mg/kg	9.19E-07	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	4.77E-06	mg/kg-d	3.00E-02	mg/kg-d	2E-04
				Arsenic	9.06E-01	mg/kg	2.17E-05	mg/kg-d	1.50E+00	$(mg/kg\text{-}d)^{-1}$	3E-05	1.12E-04	mg/kg-d	3.00E-04	mg/kg-d	4E-01
				Cadmium	1.61E-01	mg/kg	3.87E-06	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	2.00E-05	mg/kg-d	1.00E-03	mg/kg-d	2E-02
				Chromium	1.10E+00	mg/kg	2.64E-05	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.37E-04	mg/kg-d	1.50E+00	mg/kg-d	9E-05
				Copper	7.62E+00	mg/kg	1.83E-04	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	9.46E-04	mg/kg-d	4.00E-02	mg/kg-d	2E-02
				Lead	9.17E-01	mg/kg	2.20E-05	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.14E-04	mg/kg-d	--	mg/kg-d	NC
				Methyl mercury	4.78E-03	mg/kg	1.14E-07	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	5.93E-07	mg/kg-d	1.00E-03	mg/kg-d	6E-04
				Nickel	2.21E+00	mg/kg	5.29E-05	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	2.74E-04	mg/kg-d	2.00E-02	mg/kg-d	1E-02
				Selenium	2.44E-01	mg/kg	5.83E-06	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	3.02E-05	mg/kg-d	5.00E-03	mg/kg-d	6E-03
				Silver	2.90E-02	mg/kg	6.95E-07	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	3.60E-06	mg/kg-d	5.00E-03	mg/kg-d	7E-04
				Zinc	4.30E+01	mg/kg	1.03E-03	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	5.34E-03	mg/kg-d	3.00E-01	mg/kg-d	2E-02
				Aroclor-1242 (PCB-1242)	8.33E-02	mg/kg	2.00E-06	mg/kg-d	2.00E+00	$(mg/kg\text{-}d)^{-1}$	4E-06	1.04E-05	mg/kg-d	--	mg/kg-d	NC
				Aroclor-1254 (PCB-1254)	1.87E-01	mg/kg	4.48E-06	mg/kg-d	2.00E+00	$(mg/kg\text{-}d)^{-1}$	9E-06	2.32E-05	mg/kg-d	2.00E-05	mg/kg-d	1E+00
				alpha-Chlordane	8.46E-03	mg/kg	2.03E-07	mg/kg-d	3.50E-01	$(mg/kg\text{-}d)^{-1}$	7E-08	1.05E-06	mg/kg-d	5.00E-04	mg/kg-d	2E-03
				gamma-Chlordane	5.23E-03	mg/kg	1.25E-07	mg/kg-d	3.50E-01	$(mg/kg\text{-}d)^{-1}$	4E-08	6.49E-07	mg/kg-d	5.00E-04	mg/kg-d	1E-03
			Exposure Route Total								5E-05					2E+00
		Exposure Point Total									5E-05					2E+00
	Exposure Medium Total										5E-05					2E+00
Surface Water	Fish	Quarry Pond	Ingestion	Arsenic	2.00E-02	mg/kg	4.79E-07	mg/kg-d	1.50E+00	$(mg/kg\text{-}d)^{-1}$	7E-07	2.49E-06	mg/kg-d	3.00E-04	mg/kg-d	8E-03
				Manganese	1.65E+02	mg/kg	3.96E-03	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	2.05E-02	mg/kg-d	1.40E-01	mg/kg-d	1E-01
				Thallium	9.62E-03	mg/kg	2.30E-07	mg/kg-d	--	$(mg/kg\text{-}d)^{-1}$	NC	1.20E-06	mg/kg-d	1.00E-05	mg/kg-d	1E-01
			Exposure Route Total								7E-07					3E-01
		Exposure Point Total									7E-07					3E-01
	Exposure Medium Total										7E-07					3E-01
Total of Receptor Risk Across All Media											**5E-05**	**Total of Receptor Hazard Across All Media**				**2E+00**

Note:

NC = Not Calculated

Table 7

Summary of Fish Eater Risks and Hazards
South Dayton Dump Site
Moraine, Ohio

Receptor Population: Fish Eater
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemicals of Potential Concern	Carcinogenic Risk	Non-Carcinogenic Hazard Quotient	
				Ingestion	Primary Target Organ	Ingestion
Sediment	Sediment	Quarry Pond	Acenaphthene	NC	liver	3.0E-06
			Acenaphthylene	NC	liver	2.6E-07
			Anthracene	NC	no effects	3.8E-06
			Benzo(a)anthracene	1.8E-08	--	NC
			Benzo(a)pyrene	3.8E-08	central nervous system	6.6E-04
			Benzo(b)fluoranthene	3.8E-09	--	NC
			Benzo(g,h,i)perylene	NC	kidney	6.4E-07
			Benzo(k)fluoranthene	1.1E-10	--	NC
			Chrysene	1.7E-10	--	NC
			Dibenz(a,h)anthracene	3.3E-10	--	NC
			Fluoranthene	NC	liver	1.4E-04
			Fluorene	NC	blood system	4.2E-06
			Indeno(1,2,3-cd)pyrene	2.6E-10	--	NC
			Phenanthrene	NC	kidney	1.8E-04
			Pyrene	NC	kidney	1.6E-04
			Arsenic	3.3E-05	skin	3.7E-01
			Cadmium	NC	kidney	2.0E-02
			Chromium	NC	no effects	9.1E-05
			Copper	NC	--	2.4E-02
			Lead	NC	--	NC
			Methyl mercury	NC	developmental effects	5.9E-04
			Nickel	NC	body weight	1.4E-02
			Selenium	NC	clinical selenosis	6.0E-03
			Silver	NC	skin (argyria)	7.2E-04
			Zinc	NC	blood system	1.8E-02
			Aroclor-1242 (PCB-1242)	4.0E-06	--	NC
			Aroclor-1254 (PCB-1254)	9.0E-06	immune system	1.2E+00
			alpha-Chlordane	7.1E-08	liver	2.1E-03
			gamma-Chlordane	4.4E-08	liver	1.3E-03
		Exposure Point Total		5E-05		2E+00
	Exposure Medium Total			5E-05		2E+00
Medium Total				5E-05		2E+00
Surface Water	Surface Water	Quarry Pond	Arsenic	7.2E-07	skin	8.3E-03
			Manganese	NC	central nervous system	1.5E-01
			Thallium	NC	hair follicle atrophy	1.2E-01
			Chemical Total	7E-07		3E-01
		Exposure Point Total		7E-07		3E-01
	Exposure Medium Total			7E-07		3E-01
Medium Total				7E-07		3E-01
			Total of Receptor Risk Across All Media	**5E-05**	**Total of Receptor Hazard Across All Media**	**2E+00**

Total Liver HI Across All Media =	4E-03
Total Central Nervous System HI Across All Media =	1E-01
Total Kidney HI Across All Media =	2E-02
Total Blood System HI Across All Media =	2E-02
Total Skin HI Across All Media =	4E-01
Total Developmental Effects HI Across All Media =	6E-04
Total Body Weight HI Across All Media =	1E-02
Total Clinical Selenosis HI Across All Media =	6E-03
Total Immune System HI Across All Media =	1E+00
Total Hiar Follical Atrophy HI Across All Media =	1E-01

Note:

NC = Not Calculated

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GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

Julian Hayward
Julian.Hayward@ghd.com
519.340.3724

www.ghd.com