REMEDIATION WORK PLAN

Former Oil Storage Tank Area
Marport LLC (Formerly Osharai Indiana) Site
4323 Kennedy Ave., East Chicago, IN 46312
Site # 6211101

Prepared For:
Indiana Department of Environmental Management
Voluntary Remediation Program
Indianapolis, Indiana

Prepared By:
Douglas L. Abeln R.G. – Managing Consultant

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February 27, 2024

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Trinity Consultants

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Registered Geologist Certification Statement

I certify that I have examined the Remediation Work Plan for the Former Oil Storage Tank Area at the Marport LLC site (Formerly the Osharai Indiana Site) located at 4323 Kennedy Avenue, East Chicago, Illinois.

The certification is required pursuant to Part II of the Voluntary Remediation Agreement relating to Osharai Indiana Site #621101. Based on the information obtained, I certify that the information presented in the Remediation Work Plan was performed in accordance with previously approved soil and groundwater investigation work plans.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date: February 27, 2024

Signature: 

Name (printed): Douglas L. Abeln, R.G.

Title: Engineering Manager

Registered Geologist No: RG0040

Company: Trinity Consultants

EXECUTIVE SUMMARY

Trinity Consultants (Trinity) has prepared this Remediation Work Plan (RWP) on behalf of Tradebe Environmental Services, LLC (Tradebe) and Marport LLC (Formerly Osharai Indiana), in accordance with the requirements of the Indiana Department of Environmental Management (IDEM) Voluntary Remediation Program (VRP). The property discussed in this RWP is the Marport LLC (Formerly Osharai Indiana) Site located at 4323 Kennedy Avenue in East Chicago, Indiana (the "Site"). IDEM has assigned the Site VRP #6211101. Two paper copies and one electronic copy of the RWP will be submitted to IDEM.

Most of the former plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. City directories indicated that Harbison Walker Refractories continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on information obtained from a previous Phase I ESA Report, the US Reduction Company purchased the Site in the 1970s and operated it for aluminum smelting. Marport Smelting Co. began secondary aluminum smelting operations at the Site in 1985. Another company, Portage Alloys, Inc. appears at the Marport smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the Site has not been in use since. Recently, the existing buildings on the Site were demolished and currently only the building footings and concrete slab floors and pads remain.

Objective

The objective of this RWP is to achieve a "Certificate of Completion" and a "Covenant Not-To-Sue" (CNTS) in accordance with a Site-specific, risk-based approach, as provided for in IDEM's guidance and the VRP statute. The Certificate of Completion and CNTS includes all Compounds of Concern (COCs) listed within Table 1 of this RWP and covers the entire Site.

The risk-based, pathway elimination approach described in the IDEM Risk-based Closure Guide was utilized as the foundation for the closure strategy. Published (PLs) for COCs in soil and groundwater at the Site are specified in IDEMs Screening and Closure Level Tables. The proposed remedial objectives (ROs) for soil and groundwater at the Site are non-quantitative. That is, rather than remediating COCs on Site to a specific numerical standard, Trinity Marport LLC plan to utilize PLs to show delineation and then utilize an environmental restrictive covenant (ERC) to limit future potential exposure to COCs and allow for natural attenuation to continue to occur.

Nature and Extent Investigation

The nature and extent of the historical volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs) in soil and groundwater have been delineated at the site.

No VOC or PAH constituents have been detected above PLs as presented in IDEMs Screening Levels tables in soil samples.

No VOC or PAH constituents have been detected above PLs as presented in IDEMS Screening Levels table in groundwater samples, except for one VOC constituent (tetrachloroethene (PCE)) which was detected in MW -1 in two of four quarters. The PCE concentrations were slightly above the Maximum Contaminant Level (MCL) Screening Level (SL) for PCE of 5 ug/L but were below the SL for tap water of 11 ug/L.

Historical impacts in on-site soils have included metals, VOCs and PAHs which is to be expected considering the industrial nature of the site and surrounding area and the nature of the historical fill material consisting of coke ash, being placed on-site and throughout the entire East Chicago, Indiana area. As noted previously, the only COC concentration detected above the SL was PCE in MW-1 at concentrations slightly above the PCE MCL but below the SL for tap water consumption. This PCE impact does not pose a direct contact risk since this aquifer is not utilized for drinking water and the site and surrounding area is provided drinking water by the local municipal drinking water provider.

Remedial Actions

The closure approach for the Site will be the ERC, which includes restrictions on specific Site activities to limit receptor contact with impacted media. Consistent with the approved ERC approach, Marport LLC does not intend to complete active remedial activities, rather, natural attenuation will continue to occur along with engineering environmental controls such as the placement of buildings and concrete and asphalt areas will be constructed as part the Site's redevelopment.

Marport LLC's ERC will include (1) an industrial-commercial-use only provision, and (2) a potable groundwater use restriction.

This RWP describes an exposure prevention approach that protects receptors and is consistent with current and anticipated future land use to ensure that there are no unacceptable risks. Additional details are located herein.

1. INTRODUCTION

On behalf of Tradebe Environmental Services (Tradebe) and Marport LLC (Formerly Osharai Indiana) site, Trinity Consultants (Trinity) has completed this Remediation Work Plan (RWP) for the Marport LLC site located at 4323 Kennedy Avenue in East Chicago, Indiana (the "Site"). A Site location map is provided in Figure 1. The project is being conducted with oversight from the Indiana Department of Environmental Management (IDEM) Voluntary Remediation Program (VRP) and has been assigned IDEM reference identification VRP#6211101.

The objective of this RWP is to achieve a "Certificate of Completion" and a "Covenant Not-To-Sue" (CNYS) in accordance with a Site-specific, risk-based approach, as provided for in IDEMs guidance and the VRP statute.

1.1 Project Background

1.1.1 Site Location and Contact Information

The site has been owned and operated by Marport LLC (Formerly Osharai Indiana) since 2023 when Marport LLC purchased the property.

The principal contact for the project, on behalf of Marport LLC is:
Ms. Tita LaGrimas
VP Regulatory Affairs and Sustainability
Tradebe Environmental Services, LLC (On behalf of Marport LLC)
East Chicago, Indiana 46312
Phone: (800) 388-7242
E-mail: tita.lagrimas@tradebe.com

1.1.2 Surrounding Land Use

The Site is bordered on the north by Freidman Industries Inc.; on the east by the Indiana Harbor Belt Rail Yard; to the south by Tradebe Environmental Services; and to the west across Kennedy Avenue, a Praxair facility owned by Linde Gas & Equipment. A surrounding land use map is included as Figure 2. The Site is located in an heavily industrialized area along with areas of commercial and residential.

1.1.3 Site Layout

The Site is located at 4323 Kennedy Avenue, in the 3rd District of the City of East Chicago, in Lake County Indiana. The property is on the east side Kennedy Avenue between Chicago Avenue and Columbus Avenue.

The Site can also be described as encompassing nearly 8 acres located in the Southwest Quarter of the Northeast Quarter of Section 28, Township 37 North, Range 9 West, Lake County, Indiana. The location of the Site is shown on Figure 1 that overlays an excerpt from the United States Geologic Survey (USGS) Topographic Map, Whiting Quadrangle, 1988.

The Indiana Harbor Canal is approximately one-half mile west of the Site. The Canal connects the Grand Calumet River, approximately one and one-quarter miles to the south and the Indiana Harbor of Lake Michigan, located about two and one-half miles to the northeast of the Site. The immediate area of the site is light to heavy industrial and manufacturing, industrial waste management, and transportation (rail) use.

The surficial geology in this area is man-made, being composed of fill materials that often include sand, slag, refuse, cinders, brick fragments, and other industrial byproducts.

Currently, no manufacturing, or commercial operations are being conducted on the property, with the exception of a 10-Day transfer facility operated by Tradebe. The transfer facility operation only includes the parking of trucks in commerce. The former manufacturing building was recently raised and only the building foundations and slab concrete floors remain on the premises. Prior to the recent demolition of the building, all equipment and raw materials were removed. Demolition debris and waste generated during the demolition of the Osharai Indiana site was transported and disposed of at various permitted disposal facilities.

1.1.4 Historical Ownership and Operations

Most of the former plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. City directories indicated that Harbison Walker Refractories continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on information obtained from a previous Phase I ESA Report, the US Reduction Company purchased the Site in the 1970s and operated it for aluminum smelting. Marport Smelting Co. began secondary aluminum smelting operations at the Site in 1985. Another company, Portage Alloys, Inc. appears at the Marport smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the Site has not been in use since. Recently, the existing buildings on the Site were demolished and currently only the building footings and concrete slab floors and pads remain.

1.1.5 Overview of Contamination Discovery/Chronology of Events

A Phase I ESA was performed on the Site in May of 2005 by Andrews Engineering, which identified several areas of concern or recognized environmental conditions (RECs) associated with the subject property. Subsequently, Andrews Engineering performed a Phase II ESA to assess whether the RECs identified in the Phase I ESA had negatively impacted the Site. Results of the Phase II ESA indicated that a historical release of petroleum was identified in the area west of the plant building and adjacent to the former above ground fuel oil tank with associated concrete containment area. A second Phase II ESA, also performed by Andrews Engineering, was performed in 2010, to further delineate the signs of petroleum contamination, identified in the 2005 Phase II ESA. Results of this Phase II ESA indicated that a release of petroleum was identified in the area west of the former plant building and adjacent to the former 120,000 gallon fuel oil tank, concrete containment area. Exceedances of Industrial RISC standards for TPH/GRO were noted in the soil and groundwater in this area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 8,590 mg/kg have been detected in soils surrounding the former fuel oil tank containment area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 7.7 mg/L have been detected in the shallow groundwater in the area of the former fuel oil tank containment area.

Summaries from the previously conducted Phase II ESAs at the Site are presented below:

- Phase II Environmental Site Assessment Report, Former Marport Smelting Co. Site. (Andrews Engineering, 2005).

  "Andrews has performed a Phase II ESA at the Site, which consisted of drilling (15) Geoprobe borings to determine or define subsurface conditions at eleven (11) selected locations or areas. The boring locations were selected in order to broadly evaluate potential impacts from the historical industrial operations on and near the Site. The borings were also located in areas to determine the

general depth and continuity of saturated soils at the Site. In addition, three (3) surface material samples were taken of exposed materials inside of the plant structure on the Site.

No groundwater samples were obtained from the uppermost saturated soil zone during this Phase II ESA and, therefore, these conclusions do not address that media.

Based on observations and analytical results from the soil borings and surface samples, the Site subsurface is in markedly good condition considering the nature of the historical fill materials emplaced in the area and the long industrial use of the property and the vicinity. The sample analytical results indicate several instances of elevated PAHs or metals on the property, but these are not consistent across the site or at levels of concern. The historical use of the Site (refractory manufacturer and secondary aluminum smelting) has undoubtedly contributed to the identification of PAHs and several metals in the site soils from the raw materials, coal, and other fossil fuel used over the years. However, solvents, other volatile or semi-volatile organic compounds, or inorganic materials common to other types of manufacturing uses were not found in the subsurface soils on the site.

One (1) definite release of petroleum was identified in the area west of the plant building and adjacent to the former concrete tank containment area. The subsurface plume appears to head to the east and was not fully defined, but groundwater impact is likely based on the sample results and physical observations during the soil borings.

- Phase II Environmental Site Assessment Report, Thunderbird Real Estate (Former Marport Smelting Facility). (Andrews Engineering, 2010).

  "Nineteen soil borings were advanced in order to characterize soil and groundwater quality surrounding the former boring MS-4. The soils consisted of sandy fill that is saturated within 2 to 4 feet of ground surface.

  Soil results indicate that none of the RCRA metals exceed RISC default residential default levels. In addition, TPH/GRO from all sampling locations and depths are well below their respective RISC non-default residential closure levels. Exceedances of industrial RISC standards were limited to locations immediately adjacent to former boring MS-4. Borings beyond those distances had either no detections or were below RISC standards.

  Groundwater samples were obtained from AEI-1, immediately adjacent to MS-4 and from the furthest borings from MS-4 in each direction. All sample results were below detection limits for BTEX compounds and TPH/GRO. Exceedances of the Industrial RISC standard for TPH/HEO occurred at locations AEI-1 (immediately adjacent to MS-4) and 1N3. There were exceedances of the industrial RISC default level for lead at AEI-1 and 1N3, but these results are ambiguous due to the presence of entrained sediment as evidenced by high turbidity readings."

- Tradebe Environmental Services entered into a Voluntary Remediation Agreement with IDEM on January 13, 2022.
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- Site Investigation Work Plan, Former Oil Storage Tank Area – Osharai Indiana Site. (Trinity Consultants, Feb, 2022).

- Site Investigation Report, Former Oil Storage Tank Area – Osharai Indiana Site. (Trinity Consultants, 2022).

  " Fourteen probe holes were advanced within and around the former Fuel Oil Storage Tank Containment Area. These probes were advanced to a depth of 8 feet bgs. Soils from the probe holes were screened with a Photo Ionization Detector (PID) for indications of organic vapors. One soil sample was collected from the interval exhibiting the highest PID reading.

  Four temporary shallow monitoring wells were installed around the former Fuel Oil Storage Tank Containment Area at probe hole locations PH 04, PH 06, PH 12 and PH 15. Probe holes were advanced a minimum of ten feet below the top of the saturated soil zone. Shallow groundwater samples were collected from each of the temporary shallow monitoring wells.

  Results of the investigation have been evaluated and have produced the following conclusions.

  - Strata encountered during the investigation beneath the concrete and gravel layer consists of six to twenty-four inches of black coke ash fill material underlain by a fine-grained, loose sand with occasional pebbles and gravel.
  - The uppermost water bearing strata at the Osharai Indiana site was encountered in a sand layer at a depth of 3.7-4.4 feet below ground surface.
  - The unconfined shallow water bearing strata in and around the Osharai Indiana site is not utilized as a drinking water source.
  - Several groundwater extraction wells are located within a one mile radius of the Osharai Indiana site. The groundwater extraction wells are located to the northwest of the Osharai Indiana site and the shallow extraction wells are hydraulically upgradient of the Osharai Indiana site. The nearest groundwater extraction well is located to the immediate north of the Osharai Indiana site, on the former Harbison Walker site and is 1,830 feet deep. The well is currently not in use.
  - Soil samples were collected from the soil core interval which exhibited the highest PID reading, or if no PID reading was detected, was collected from the soil interval immediately above the moist/saturated zone of the boring. Soil samples were comprised of two material types; black coke ash fill material, and a black or tan fine grained sand.
  - Detected soil VOC and PAH constituent detections were dependent on which material type was collected for analysis. Samples comprised of coke ash fill material exhibited detectable concentrations of VOC and PAH constituents in the low part per billion range and are representative of constituents historically associated with coke ash fill material. Samples comprised of sand material did not exhibit PAH constituents and only a few VOC constituents in the low part per billion range.
  - Background soil sample PH 03 1.25-2.25, comprised of coke ash fill material, produced VOC and PAH constituent concentrations in the low parts per billion range and were similar to VOC and PAH constituent concentrations exhibited in samples collected around the Former Oil Storage Tank Area.
  - All detected VOC and PAH constituent concentrations were below PLs in IDEMs Screening Levels Table.
  - Potential impact from site conditions is indicated by detections of PAH constituents in the FB 01 sample. The results of the field blank present the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results of both soil and water samples. Nine PAH constituents were detected above the laboratory MDL in the Field Blank sample. These constituents were also detected in many of the soil and groundwater samples as well.

- Detected soil concentrations are representative of the coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional soil characterization is necessary and no soil Remediation Work Plan is necessary as all detected VOC and PAH constituent concentrations are below PLs in IDEMs Screening Levels Table.
- Groundwater samples were collected from four temporary monitoring wells surrounding the Former Oil Storage Tank Area. Detections of VOC constituents were below Pls in IDEM Screening Levels Table in all four monitoring well samples. Various PAH constituents were detected in each of the four monitoring wells. The majority of PAH constituent concentrations were below IDEM RCG Screening Levels as presented in Table A-6. Seven PAH constituent concentrations were detected slightly above the PL in IDEMs Screening Level Table for Tap Water.
- Groundwater PAH constituent concentrations are ambiguous due to the presence of entrained sediment in the collected water samples from the temporary monitoring wells. Groundwater samples collected from temporary monitoring wells traditionally produce elevated concentrations due to entrained sediment, in this case, coke ash fill material.
- Detected groundwater concentrations are representative of shallow groundwater impacted by the use of coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional groundwater characterization is necessary, and no groundwater Remediation Work Plan is necessary as shallow groundwater in the East Chicago, Indiana area is not used for drinking water and the detected PAH concentrations are representative of background shallow groundwater in areas where coke ash fill material was placed.

- Phase II Groundwater Investigation Work Plan, Former Oil Storage Tank Area – Marport LLC (Former Osharai Indiana) Site. (Trinity Consultants, Oct. 2022).

- Phase II Groundwater Investigation Report, Former Oil Storage Tank Area – Marport LLC (Former Osharai Indiana) Site. (Trinity Consultants, Nov. 2023).

Twelve permanent shallow groundwater monitoring wells were installed around the former Fuel Oil Tank Containment Area and the property boundary. Probe holes were advanced approximately ten feet below the top of the saturated zone which based on previous sampling events is approximately three to seven feet below ground surface. Each permanent monitoring well was constructed of 1.5 inch OD PVC schedule 40 pre-packed screens with 1.5 inch schedule 40 PVC riser. The pre-packed screen extended a minimum of one foot above the top of the saturated zone. The annulus between the probe casing and the pre-packed well screen was filled with sand to a height of one foot above the screen then filled with bentonite chips then grouted to the surface. A protective steel well protector was placed in concrete surrounding the outer casing. Immediately after the wells were completed, they were developed by a combination of pumping and surging. Monitoring well construction diagrams and IDNR Record of Water Well Forms were completed After installation of the permanent monitoring wells, their elevations were established by a registered professional land surveyor DLZ. For each well, elevations were obtained for the ground surface and the top of each riser pipe.

Shallow groundwater samples were collected from each of the permanent shallow groundwater monitoring wells on a quarterly basis for a period of four quarters. Quarterly groundwater samples were collected during the following timeframes:

- January 4-5, 2023
- April 4-5, 2023
- June 28-29, 2023
- September 27-28, 2023.

Results of the investigation have been evaluated and have produced the following conclusions.

  - The uppermost water bearing strata at the Marport LLC (Formerly Osharai Indiana) site is encountered at a depth of approximately 3-5 feet below ground surface or at an approximate elevation between 583 and 585 mean sea level.
  - The groundwater flow direction is the to northwest with a relatively flat gradient.
  - The unconfined shallow water bearing strata in and around the Marport LLC (Formerly Osharai Indiana) site is not utilized as a drinking water source.
  - Groundwater samples were collected from twelve monitoring wells surrounding the Former Oil Storage Tank Area for a period of four quarters. Detections of VOC and PAH constituents were below Pls in IDEMs Screening Levels Table and EPA Regional Screening Levels for tap water.
  - Detected groundwater concentrations are representative of shallow groundwater impacted by the use of coke ash fill material present throughout the Marport LLC (Formerly Osharai Indiana) site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
  - No additional groundwater characterization is necessary, and no groundwater Remediation Work Plan is necessary as shallow groundwater in the East Chicago, Indiana area is not used for drinking water and the detected VOC and PAH concentrations are below PLs and are representative of background shallow groundwater in areas where coke ash fill material was placed.

- Letter from IDEM dated January 3, 2024 finding that the Site has been adequately delineated and requesting submittal of a Remediation Work Plan.

1.2 Supporting Documentation

The following documents related to environmental assessment and remediation at the Site are listed below and are discussed in Section 1.1.5 (Overview of Contamination Discovery/Chronology of Events). IDEM Virtual File Cabinet (VFC) document numbers have been provided where available. Documents not listed on the VFC are included within Appendix A where noted.

- Andrews Engineering Phase II Environmental Site Assessment Report (May 18, 2005 – Appendix A)
- Andrews Engineering Phase II environmental Site Assessment report (April 23, 2010 – Appendix A)
- Voluntary Remediation Agreement (December 3, 2021 – VFC#83249552)
- Voluntary Remediation Agreement (January 13, 2022 – VFC#83264910)
- IDEM Letter (January 13, 2022 – VFC#83264920)
- IDEEM Letter (January 13, 2022 – VFC383264941)
- 2021 Annual Report (January 31, 2022 – VFC#83273851)
- Trinity Consultants Investigation Work Plan (February 28, 2022 – VFC# 83287127)
- IDEM Letter (April 1,2022 – VFC# 83298682)
- Trinity Consultants Letter (April 8, 2022 – VFC# 83301876)
- Trinity Consultants Site Investigation Report – August 21, 2022 – VFC#83351580)
- IDEM Letter (September 1, 2022 – VFC# 83366428)
- Trintiy Consultants Letter (October 17, 2022 – VFC 83382979)

- IDEM Letter (November 2, 2022 – FVC#83387478)
- 2022 Annual Report (February 12, 2023 – FVC#83435238)
- Trinity Consultants Phase II Groundwater Investigation Quarterly Report (Q1) (May 6, 2023 – FVC#83486753)
- Trinity Consultants Phase II Groundwater Investigation Quarterly Report (Q3) (August 4, 2023 – FVC#83515369)
- Trinity Consultants Phase II Groundwater Investigation Quarterly Report (Q4) (November 9, 2023 – FVC#83570493)
- Trinity Consultants Phase II Groundwater Investigation Report (November 11, 2023 – VFC#83570505)
- IDEM Letter (January 3, 2024 – VFC#83577798)
- 2023 Annual report (January 4, 2024 – FVC#83578222)

1.3 Remedial Action Objectives

1.3.1 Remediation Objectives and Rationale

The objective of this RWP is to achieve a "Certificate of Completion" and a "Covenant Not-To-Sue" (CNTS) in accordance with a Site-specific, risk-based approach, as provided for in IDEM's guidance and the VRP statute. The Certificate of Completion and CNTS includes all Compounds of Concern (COCs) listed within Table 1 of this RWP and covers the entire Site.

The risk-based, pathway elimination approach described in the IDEM Risk-based Closure Guide was utilized as the foundation for the closure strategy. Published levels (PLs) for COCs in soil and groundwater at the Site are specified in IDEMs Screening and Closure Level Tables. The proposed remedial objectives (ROs) for soil and groundwater at the Site are non-quantitative. That is, rather than remediating COCs on Site to a specific numerical standard, Trinity Marport LLC plan to utilize SLs to show delineation and then utilize an environmental restrictive covenant (ERC) to limit future potential exposure to COCs.

1.3.1.1 Summary of Completed Remedial Work

No formal remedial work has taken place on the subject property. It should be noted that prior to demolition of the former buildings located on the Site, all equipment and raw materials were removed. Demolition debris and waste generated during the demolition of the Site was transported and disposed of property at various disposal facilities including Republic landfill, US Ecology and Tradebe.

1.3.1.2 Objectives of Future Remedial Action

Marport LLC plans to use ERC to limit future exposure scenarios at the Site, and as a result, future remedial action is not proposed for the Site. Additional details of the proposed ERC are presented in Section 3.1.

2. INVESTIGATION ACTIVITIES

2.1 Baseline Assessments and Susceptible Area Evaluation

2.1.1 Documents Reviewed

As part of the baseline geological and hydrogeological assessment presented below in Section 2.1.2. Trinity reviewed the following documents:

- Hydrogeologic Atlas of Aquifers in Indiana (Fenton et al. 1994)
- Unconsolidated Aquifer Systems of Lake County, Indiana (Indiana Department of Natural Resources, 2010)
- Bedrock Aquifer Systems of Lake County, Indiana (Indiana Department of Natural Resources, 2010)
- Soil Survey of Lake County, Indiana (United States Department of Agriculture, Soil Conservation Service, 1921)

As part of the baseline physical and political geographic informant evaluation present below in Section 2.1.3, Trintiy reviewed the following documents:

- Topographic 7.5 Minute Map, Whiting Quadrangle, Indiana (U.S. Geological Survey,1988)

As part of the baseline ecological evaluation presented below in Section 2.1.3, Trinity reviewed the following documents:

- National Wetland Inventory (NWI) Map (obtained from the U. S. Fish and Wildlife Service NWI Mapper webpage)
- Endangered, Threatened, or Rare Species list for Lake County (obtained from the Indiana Department of Natural Resources (IDNR), Division of Nature Preserves, Heritage Data Center webpage)
- National Park Service Map of National Parks by State (US Department of the Interior, National Park Service, 2009)
- US Forest Service Map of National Forests (US Department of Agriculture, US Forest Service, 2018)
- Indian Department of Environmental Management Wellhead Protection Area Map (obtained from the IDEM webpage)
- Water Well Records Database (IDNR Division of Water 2023)

Copies of the NWI map and Endangered, Threatened, or Rare Species list are included in Appendix B and Appendix C, respectively.

2.1.2 Physical and Political Geographic Assessment

The Site is located at 4323 Kennedy Avenue, in the 3rd District of the city of east Chicago, in Lake County Indiana. The property is on the east side Kennedy Avenue between Chicago Avenue and Columbus Avenue.

The Site can also be described as encompassing nearly 8 acres located in the Southwest Quarter of the Northeast Quarter of Section 28, Township 37 North, Range 9 West, Lake County, Indiana. The location of the Site is shown on Figure 1 that overlays an excerpt from the United States Geologic Survey (USGS) Topographic Map, Whiting Quadrangle, 1988.

The Indiana Harbor Canal is approximately one-half mile west of the Site. The Canal connects the Grand Calumet River, approximately one and one-quarter miles to the south and the Indiana Harbor of Lake Michigan, located about two and one-half miles to the northeast of the Site. The immediate area of the site is light to heavy industrial and manufacturing, industrial waste management, and transportation (rail) use. The surficial geology in this area is man-made, being composed of fill materials that often include sand, slag, refuse, cinders, brick fragments, and other industrial byproducts.

Currently, no manufacturing, or commercial operations are being conducted on the property, with the exception of a 10-Day transfer facility operated by Tradebe. The transfer facility operation only includes the parking of trucks in commerce. The former manufacturing building was recently raised and only the building foundations and slab concrete floors remain on the premises. Prior to the recent demolition of the building, all equipment and raw materials were removed. Demolition debris and waste generated during the demolition of the Osharai Indiana site was transported and disposed of at various permitted disposal facilities.

2.1.3 Geologic and Hydrologic Assessment

According to the United States Department of Agriculture –Natural Resource Conservation Service, soils in the immediate vicinity of the Site include Calumet fine sand. The Soil Survey describes this soil type as follows: "the Calumet fine sand consists of a brownish loamy fine sand, 2 to 5 inches deep;, passing into pale-yellowish or grayish-yellow, incoherent fine sand, extending to considerable depths. This subsoil material looks like fresh beach sand, as it consists principally of translucent quarts grains with a small admixture of brownish-colored grains and water worn gravel. Some areas consist of medium-textured sand. Local patches may have considerable small gravel strewn over the surface and through the soil section.

In some places the shallow surface layer, containing organic matter, has been removed by wind or water erosion, while in other places, as in depressions or along the line of contact with marshes, the loamy layer is considerably deeper. This type is confined to the northern edge of Lake County, mainly to the north of the Grand Calumet river and west of Gary."

According to the Unconsolidated Aquifer System of Lake County, Indiana the Site is located within the Calumet Aquifer System. The aquifer consists of fine-to-medium-grained sand with dispersed lenses of gravel. Beds of interlaminated silt and clay, and deposits of peat and muck confine the aquifer in small areas across the county. This system is underlain by a relatively impermeable clay and till unit that in places exceeds 100 feet in thickness. Areas of subdued relief in the northern portion of the county have static water levels that are frequently less than 15 feet below surface. Saturated thickness of the Calumet Aquifer System ranges from lass than five feet along its southern extent to about 40 feet in areas containing broad water-table mounds.

The Calumet Aquifer has not been developed significantly because of its proximity to Lake Michigan, an abundant surface-water source. The aquifer is highly susceptible to surface contamination because there is no clay cap across most of the aquifer and a lack of clay separator beds.

According to the Bedrock Aquifer Systems of lake County, Indian the Site is located withing the Silurian and Devonian Carbonates Aquifer System. It is the principal bedrock aquifer and the only one capable of supporting high-capacity pumpage in the county.

In Lake County the Silurian and Devonian Carbonates Aquifer System is overlain in most places by about 50 to more than 200 feet of unconsolidated material. The majority of domestic water wells that penetrate the

system are completed in the upper 15-100 feet of bedrock. This aquifer has a low susceptibility to surface contamination because the overlying unconsolidated deposits are relatively thick.

The nearest perennial stream, Indian Harbor Canal, is located approximately 0.55 miles west of the Site and is sourced from Lake Michigan, which is located approximately 1.68 miles north, northeast of the Site.

2.1.4 Ecological Assessment

The NWI map included in Appendix B shows an isolated pocket of wetlands approximately half a mile to the southwest of the Site. The wetlands are defined as freshwater emergent and fresh water forested/shrub wetlands. A fresh water pond is also located approximately 300 yards to the northwest of the Site across Kennedy Avenue and is a stormwater retention basin for the Praxair facility.

The Endangered Species list for Lake County included in Appendix C indicated that the following federally-listed endangered species have been documented in Lake County:

- Mussels: Sheepnose – Plethobasus cyphyus
- Beetles: American Burying Beetle – Nicrophorus americanus
- Insect/Hymenoptera: Rusty-patched Bumble Bee – Bombus affinis
- Butterflies & moths: Karner Blue – Lycaeides melissa samuelis
- Dragonflies & Damselflies: Mine's Emerald – Somatochlora hineana
- Birds: Piping Plover – Charadrius melodus

Species documented in Lake county on the state-endangered list includes:

- Mussels: Sheepnose – Plethobasus cyphyus
- Insect/Hymenoptera: Hamilton's Dune Paraphlepsius – Paraphlepsius, The Kansas Prairie leafhopper – Prairiana kansana
- Insect/Hymenoptera: Rusty-patched Bumble Bee – Bombus affinis
- Butterflies & moths: columbine Duskywing – Erynnis lucilius, Persius Duskywing – Erynnis persius persius, Silery blue – Glaucopsyche lygdamus couperi, manuy-lined wainscot – Leaucania multilinea, Karner blue – Lycaeides melissa samuelis, barrens metarranthis – Metarranthis apiciaria, prairie sedge moth – Meodactria murellus,obtuse sedge borer – Olig obtuse, Culver's root borer moth – Papaipema sciata, many-lined photedes – Photedes enervate, Ernestine's phytometra – Phytometra ernestinana, prairie tarachidia – Ponometia binocular. Four-lined cordgrass borer – Resapamea stipata, philox flower moth – Schinia Indiana, blazingstar flower moth – Schinia sanguinea, Regal Fritillary – Speyeria idalia, dune oncocnemis – Sympistis riparia.
- Dragopnflies & Dameselflies: Spotted-wing Grasshopper – Orphulella pelidna.
- Spiders: white-striped orbweaver – Araneus juiperi, big-eyed spurred woodland funnelweaver – Coras aerialis, a money spider – Disembolus bairdi, a cobweb spider – Emertonella emertoni, pale-footed patterned mney spider – Grammonota pallipes, Ohio meshweaver – iviella ohioensis, Northestern flower reab spider – Mecaphesa carletonica, a meshweaver – Phantyna pixi, an araneomorph spider – Phrurone formica, dlende antmimic corrine spider – Phrurotimpus dulcineus, Tarsal sheet-web weaver – Scironis tarsalis, vernal money spider – Scotinotylus vernalis.
- Fish: Lake Sturgen – Acipenser fulvescens,.
- Reptiles: spotted turtle – Clemmys guttata, Kirtland's snake – Clonophis kirtlandii, Blanding's turtle – Emydoidea blandingii, smooth green snake – Opheodrys vernalis, eastern massasauga – Sistrurus catenatus, plains box turtle – Terrapene ornate ornata.
- Birds: Upland Sandpiper – Bartramia longicauda, American Bittern – Botaurus lentiginosus, Henslow's sparrow – Centronyx henslowii, Piping Plover – Charadrius melodus, Black Tern – Chlidonias niger,

march wren – Cistothourus palustris, sedge wren – Cistothorus stellaris, Trumpeter Swan – Cygnus bussinator, Commongallinule – Gallinula galeata, Least Bittern – Ixobrychus exilis, loggerhead shrike – Laniius ludovicianus, Black Rail – Laterallus jamaicensis, Yellow-crowned Night-heron – Nyctanassa violacea, Black-crowned Night-heron – Nycticorax nycticorax, King ail – Rallus elegaans, Virginia Rail – Rallus limicola, Barn owl – Tyto alba, Yellow-headed Blackbird – Xanthocephalus xanthocephalus,.

- Mammals: little brown motis – Myotis lucifugus, Northern Long Eared Bat – Myotis septentrionalis, Franklin's ground squirrel – Poliocitellus franklinnii.
- Plants: running serviceberry – Amelanchier humilis, Beck's water-marigold – Bidens beckii, least grape-fern – Botrychium simplex, bluehearts – Buchnera americana, yellow sundrops – Calylophus serrulantus, pale corydalis – Capnoides sempervirens, awned sedge - Carex atherodes, clustered sedge – Carex cumulate, little prickly sedge – Carex echinate, elk sedge – Carex garberi, mud sedge – Carex limosa, necklace sedge – Carex projecta, prairie redroot – Ceanothus herbaceous, fire wood – Chamaenerion angustifolium ssp. Dircumvagum, Hill's thistle – Cirsium hillii, dune thistle – Cirsium pitcher, Clinton's lily – Clintonia arkansanum, silky dogwood – Cornus amomum ssp. Amomum, bunchberry – Cornus canadensis, tooted sedge – Cyperus dentatus, pink lay's-slipper – Cpripedium, long-ract green orchid – Dactylorhizaa viridis, Common's panic-grass – Dichanthelium commonsianum, Eam's panic-grass – Dichanthelium deamii, purple spikerush – Eleocharis aatropurpurea, variegated horsetail – Equisetum variegatum var. variegatum, Carolina fimbry – Fimbristylis puberula, sowny gentian – Gentiana puberulenta, Bicknell's northern cranesbill – Geranium bicknellii, small floating manna-grass -Glyceria borealis, creeping St. John's -wort – Hypericum adpressum, Swinks's St. John's-wort – Hypericum swinkianum, brown-fruited rush – Juncus pelocarpus, beach peavine – Lathyrus, smooth veiny pea – Lathyrus venosus, inflated dusckweed – Lemna gibba, cattail gay-feathetr – Liatris pycnostachyz, Drummond;s hemicarpha – Lipocarpha drummondii, globe-fruited false-loosestrife – Ludwigia shpaerocarpa, northern bog clubmoss- Lycopodiella, northern appressed bog clubmoss – Lycopdiella subappressa, green adder's -mouth – Malaxis unifolia, American cow-wheat – Melampyrum lineare, climbing hempweed – Mikania scandens, clustered broomrape – Orobanche fasculata, eatern eulophus – Perideridia americana, prairie fame-flower – Phemeranthus rugospermus, heart-leaved plantain – Plantago cordata, yellow-fringed orchid – Plantanthera ciliaris,eastern prairie whit-frinnged orchid – Plantanthera leucophae, praire parsley – Polytaenia nuttallii, balsm poplar – Populus balsamifera, lake cress – Rorippa aquatica, small bristleberry – Rubus setosus, heartleaf willow – Salix cordata, hall's bulrush – Schoenoplectiella hallii, Torrey's Bulrush – Schoenoplectus torreyi, ledge spike-moss – Selaginella repestris, strict blue-eyed-grass – Sisyrinchium montanum, Grat Plain's ladies'-tresses – Spiranthes magnicamporum, horned bladderwork – Utricularia cornuta, northeastern bladderwort – Utricularia resupinate, velvetleaf blueberry – Vaccinium muyrtilloides, highbrush-cranberry – Viburnum opulus var. americanum.

Additional information obtained from Taylor Davis Astle of the Indiana Natural Data Center indicated that no threatened or endangered species, or significant areas are documented within 0.5 miles of the project area. The information provided in correspondence with the Heritage Data Center is included in Appendix C.

2.1.5 Susceptible Areas Assessment

2.1.5.1 Geological

Based on Trinity's review of accessible data, the Site does not lie within a geologically susceptible area.

2.1.5.2 Wellhead Protection

Based on information from the IDEM Wellhead Proximity Determinator, (https://www.in.gov/idem/cleanwater/pages/wellhead/, accessed February 9, 2024, the Site is NOT located within a Wellhead Protection Area. The Site is listed as being within a Source Water Area.

2.1.5.3 Critical Habitat

According to information obtained from the Indiana Natural Heritage Data Center, no high quality natural areas/critical habitats were found within 0.5 miles of the project area. The information provided in correspondence with the Heritage Data Center is included in Appendix C.

2.1.6 IDNR Water-Supply Well Records Survey

A water well search was conducted in an effort to identify water well records of all low-and high capacity wells within a one mile radius of the Site. Water wells within a 1-mile radius of the Site are presented on Figure 3. The water well search was conducted by accessing the Indiana Department of Natural Resources (IDNRs) Water Well Viewer database. A review of the data indicates the presence of sixteen (16) water wells being located within one mile of the Site. Table 2 presents a summary of the water wells identified within the search radius and water well records are presented in Appendix D. In summary, there are four (4) Significant Withdraw Wells located at the Buckeyes Terminal LLC located to the northwest of the Site. The Buckeyes Terminal site has multiple extraction wells ranging in depth from nineteen (19) to twenty-five (25) feet in depth extracting water at rates ranging from 75 to 148 gallons per minute. Conoco Phillips also located northwest of the Site, is identified as having seven (7) shallow wells to a depth of nineteen (19) feet below ground surface (bgs). The nearest identified water well is located immediately to the north of the Site and is registered to Harbison Walker Co. The well was installed in 1929 and is 1,830 feet deep and is believed to not currently be in use. All identified wells are used for process water purposes. There were no drinking water wells identified as the City of East Chicago has been providing drinking water to residences since 1918.

2.2 Summary of Site Investigation

The chronology of events associated with the Site Investigation is included in Section 1.1.5. Investigation Activities at the Site have included the advancement of 33 direct push soil borings, 9 temporary monitoring well groundwater samples and the installation of 12 permanent monitoring wells, and subsequent sampling of those permanent monitoring wells quarterly over a period of one year. Soil boring and groundwater sample locations are depicted on Figures 4 & 5. All available soil boring logs and monitoring well construction diagrams are contained within the Site Investigation Report and the Phase II Groundwater Investigation Report.

2.2.1 Contaminants of Concern

As noted within the chronology of events (Section 1.1.5), historical soil and groundwater sampling events have included analysis of PCBs, VOCs, SVOCs, cyanide, TPH/HEO, TPH/GRO, BTEX, and select metals. Upon entering the VRP it was determined that the COCs for the Site were VOCs and PAHs due to the nature of the past owner's fuel oil being contained in the former fuel oil storage tank. All analysis occurring since being in the VRP has included VOCs and PAHs as COCs.

2.2.2 Site Specific Geology and Hydrogeology

The Site is located in an area of Lake County that has been in industrial use for over a century and is situated on "made" land consisting of fill composed of beach sand, cinders, brick fragments, slag, refractory materials, and other industrial byproducts. Site investigations have determined that fill material across the Site ranges in thickness from approximately 5.5 to 9 feet below ground surface, depending on the surface topography at the Site.

The uppermost water bearing strata at the Site is encountered at a depth of approximately 3-5 feet below ground surface or at an approximate elevation between 583 and 585 man sea level. Based on potentiometric maps developed during the Phase II Groundwater investigation, groundwater flow direction is to the northwest with a flat groundwater gradient. This unconfined aquifer is not utilized as a drinking water source.

2.2.3 Identified Sources of Contamination

As discussed in Section 1.1.5, environmental site assessments identified the following recognized environmental conditions.

A Phase I ESA was performed on the Site in May of 2005 by Andrews Engineering, which identified several areas of concern or recognized environmental conditions (RECs) associated with the subject property. Subsequently, Andrews Engineering performed a Phase II ESA to assess whether the RECs identified in the Phase I ESA had negatively impacted the Site. Results of the Phase II ESA indicated that a release of petroleum was identified in the area west of the plant building and adjacent to the former above ground fuel oil tank with associated concrete containment area. A second Phase II ESA, also performed by Andrews Engineering, was performed in 2010, to further delineate the signs of petroleum contamination, identified in the 2005 Phase II ESA. Results of this Phase II ESA indicated that a release of petroleum was identified in the area west of the former plant building and adjacent to the former 120,000 gallon fuel oil tank, concrete containment area. Exceedances of Industrial RISC standards for TPH/GRO were noted in the soil and groundwater in this area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 8,590 mg/kg have been detected in soils surrounding the former fuel oil tank containment area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 7.7 mg/L have been detected in the shallow groundwater in the area of the former fuel oil tank containment area.

2.2.4 Extent of Contamination

2.2.4.1 Soil Impacts

A comprehensive summary of soil analytical results obtained through implementation of the Site Investigation Report for VOCs and PAHs is included in Table 3 and a map detailing sample locations is included as Figure 4. Copies of the laboratory-issued analytical reports for soil, and the supporting quality assurance/quality control (QA/QC) documentation are attached in the Site Investigation Report in Appendix E.

Soil samples were collected from the soil core interval which exhibited the highest PID reading, or if no PID reading was detected, soil was collected from the soil interval immediately above the moist/saturated zone of the boring. Soil samples were comprised of two material types; black coke ash fill material, and a black or tan fine grained sand. Detected soil VOC and PAH constituent detections were dependent on which material type was collected for analysis. Samples comprised of coke ash fill material exhibited detectable concentrations of VOC and PAH constituents in the low part per billion range and are representative of constituents historically associated with coke ash fill material. Samples comprised of sand material did not

exhibit PAH constituents and only a few VOC constituents in the low part per billion range. Background soil sample PH 03 1.25-2.25, comprised of coke ash fill material, produced VOC and PAH constituent concentrations in the low parts per billion range and were similar to VOC and PAH constituent concentrations exhibited in samples collected around the Former Oil Storage Tank Area. All detected VOC and PAH constituent concentrations are below PLs in IDEMs Screening Levels Table.

2.2.4.2 Groundwater Impacts

A comprehensive summary of groundwater analytical results obtained through implementation of the Phase II Groundwater Investigation Work Plan for VOCs and PAHs is included in Table 4 and a map detailing sample locations is included as Figure 5. Copies of the laboratory-issued analytical reports for groundwater, and the supporting quality assurance/quality control (QA/QC) documentation are attached in the Phase II Groundwater Investigation Report in Appendix F.

Groundwater samples were collected from twelve monitoring wells surrounding the Former Oil Storage Tank Area and the outer perimeter, along the property line, for a period of four quarters. Detections of VOC and PAH constituents were below PLs in IDEMs Screening Levels Table and EPA Regional Screening Levels for tap water at every monitoring well during every sampling event, except for two detections of tetrachloroethene (PCE) in MW-1 during the first and fourth quarter sampling period. TCE was detected in MW-1 at concentrations of 6.01 ug/L and 6.32 ug/L which are slightly above the PLs in IDEMs Screening Level Table of 5 ug/L. These concentrations, however, are below the EPA Regional Screening Level for tap water of 11 ug/L.

2.3 Summary of Risks Associated with the Site

2.3.1 Human, Ecological and Environmental Risks

The contaminants detected at the Site present the risks indicated below.

2.3.1.1 Human Health

All COCs were below respective IDEM Risk-based Closure Guide Published Levels in soil samples collected throughout the Site for commercial/industrial properties. There are no exposure risks due to the soil present on the Site.

All COCs were below respective IDEM Risk-based Closure Guide Published Levels in groundwater samples through out the Site for groundwater (residential tapwater) except for tetrachloroethene (TCE). TCE was detected during two of four sampling events at concentrations of 6.01 ug/l and 6.32 ug/L, which are slightly above the IDEM Risk-based Closure Guide Published Level of 5 ug/L (EPAs Maximum Contaminant Level (MCL) in drinking water). It should be noted that these concentrations are below the EPA Regional Screening Level concentration for tapwater of 11 ug/L. Groundwater is not used in the area as drinking water is supplied by the City of East Chicago Water Department. However, as a proactive measure, Marport LLC (Formerly Osharai Indiana) has elected to place an Environmental Restrictive Covenant on the deed to the property which will include a potable groundwater use restriction.

As stated in Section 2.2.4.3, the vapor intrusion pathway at the Site is incomplete and therefore there is not risk of human health exposure associated with the vapor pathway.

2.3.1.2 Environmentally Sensitive Areas

The Site is not located within a wellhead protection area as stated in Section 2.1.5.

As discussed in Section 2.1.5.3, while the NWI mapper shows isolated areas of wetlands in the area the Indiana Natural Heritage Data Center has not yet provided data to our request for the identification of high quality natural areas/critical habitats within 0.5 miles of the Site. Due to the industrialized/urban nature of the area surrounding the Site, Marport LLC (Formerly Osharai Indiana) does not believe that there are any high quality natural areas/critical habitats within 0.5 miles of the Site. Due to the absence of impacted soil and limited impact of groundwater, it is unlikely that Site COCs pose a risk to these wetlands or potentially identified high quality areas/critical habitats in the area.

2.3.1.3 Endangered or Threatened Species

The federal and state-listed endangered, threatened or rare species are discussed in Section 2.1.4. Due to the absence of impacted soil and limited impact of groundwater, it is unlikely that the Site COCs pose a risk to these species.

2.3.2 Impacts of Current and Future Land Use

Land use at the Site is not expected to change from its current industrial use. However, land use will continue to be industrial via an on-site Environmental Restrictive Covenant (see Section 3.1) that will also prohibit the use of the groundwater as a source of potable water. Therefore the potential future on-Site exposure pathways of concern are the same as the current exposure pathways described in Section 2.3.1.1.

3. REMEDIATION PLAN

3.1 Risk Management

Marport LLC (Formerly Osharai Indiana) planned remediation strategy includes implementing an Environmental Restrictive Covenant to manage future potential risk. The Environmental Restrictive Covenant will include (1) an industrial-commercial use only provision, and (2) a potable groundwater use provision. These two provisions will apply to the entire property.

3.2 Remedial Options Considered

The remedial option for the Site will be the Environmental Restrictive Covenant as this document will restrict Site activities appropriately to limit potential receptors contact with impacted media. As such, there are active remedial options planned for the Site.

COCs in soil are not currently above respective IDEM Risk-based Closure Guide Published Levels, therefore no remedial options for soil were considered.

Groundwater recovery and treatment or in-situ treatment were considered for remediation of groundwater in the area around MW-1. Groundwater remediation is not necessary considering that the groundwater in the area is not used for drinking water, and the Environmental Restrictive Covenant will prevent potential exposure to the impacted groundwater.

4. PROJECT WORK SCHEDULE

The following details the implementation of the RWP. It is expressed in terms of the anticipated duration of each task starting from the date of submittal of the RWP to IDEM.

Activity	**Time to Completion**
Submit RWP	March 1, 2024
Public notice and comment period	After approval of the RWP by IDEM. The comment period will last 30 days.
Remediation Completion Report	90 days from completion of public comment period.
Environmental Restrictive Covenant Recorded	30 day from IDEM receipt of Remediation Completion Report.
Closure	30 days from receipt of Environmental Restrictive Covenant documentation.

5. COMMUNITY RELATIONS PLAN

Upon completion of IDEM's internal review, a copy of the RWP will be made available for review in the Robert A. Pastrick Branch-East Chicago Public Library located at 1008 W. Chicago Avenue, in East Chicago, Indiana. A public notice of the availability of the RWP and its location will be placed in the classified section to the Times of Northwest Indiana. Marport LLC (Formerly Osharai Indiana) will support IDEM's community relations activities as requested by the IDEM project manager. If requested, a public meeting may be held to address any questions or comments.

Marport LLC (Formerly Osharai Indiana) has developed a Community Relations Plan which is presented in Appendix G.

6. REFERENCES

- Hydrogeologic Atlas of Aquifers in Indiana U.S.G.S. Water Resources Investigation report 92-4142 (Fenelon et al. 1994)
- Unconsolidated Aquifer Systems of Lake County, Indiana (Indiana Department of Natural Resources, 2010)
- Bedrock Aquifer Systems of Lake County, Indiana (Indiana Department of Natural Resources, 2010)
- Soil Survey of Lake County, Indiana (United States Department of Agriculture, Soil Conservation Service, 1921)
- Topographic 7.5 Minute Map, Whiting Quadrangle, Indiana (U.S. Geological Survey,1988)
- National Wetland Inventory (NWI) Map (obtained from the U. S. Fish and Wildlife Service NWI Mapper webpage)
- Endangered, Threatened, or Rare Species list for Lake County (obtained from the Indiana Department of Natural Resources (IDNR), Division of Nature Preserves, Heritage Data Center webpage)
- National Park Service Map of National Parks by State (US Department of the Interior, National Park Service, 2009)
- US Forest Service Map of National Forests (US Department of Agriculture, US Forest Service, 2018)
- Indian Department of Environmental Management Wellhead Protection Area Map (obtained from the IDEM webpage)
- Water Well Records Database (IDNR Division of Water 2023)

FIGURES

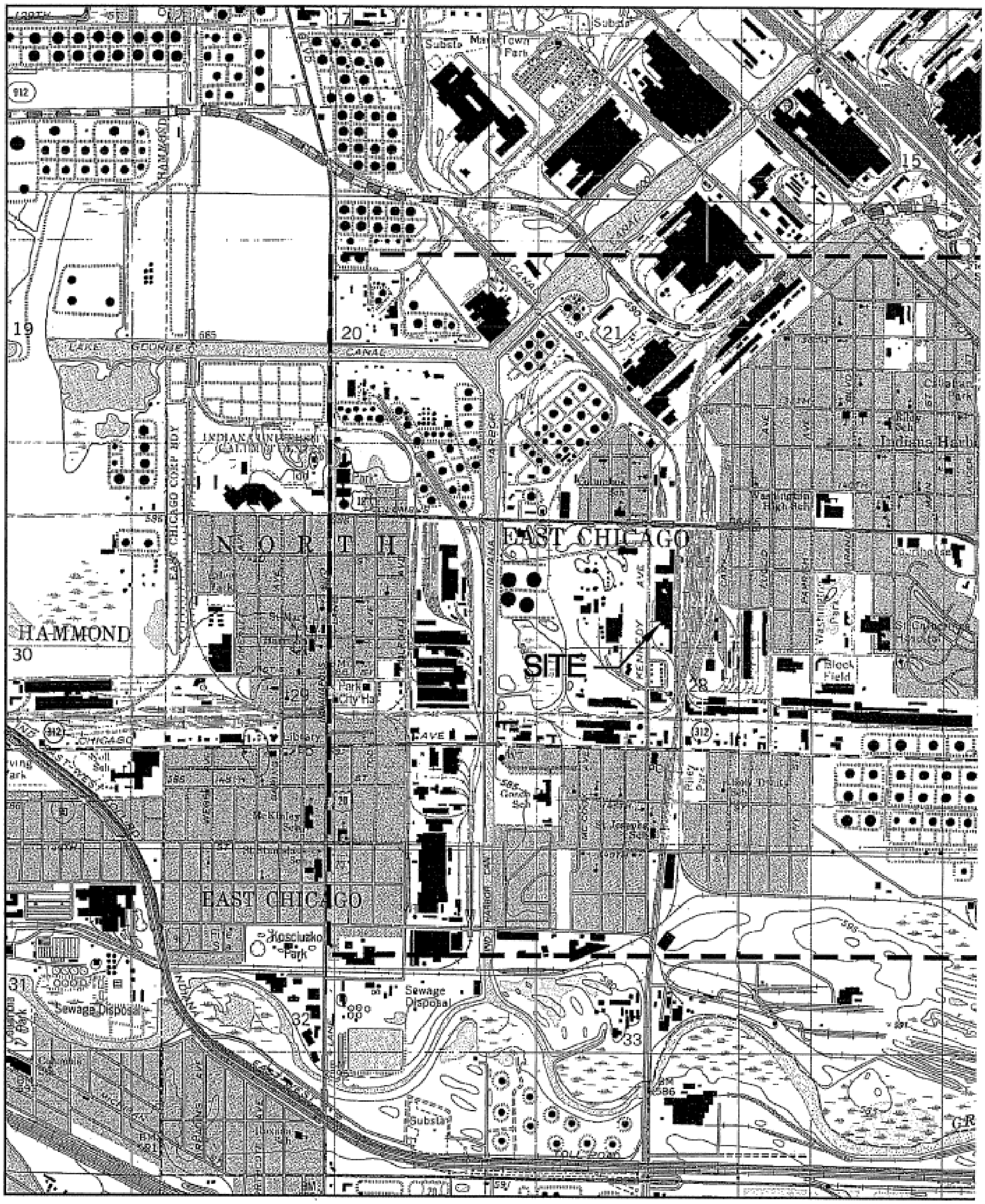

FIGURE 1

SITE LOCATION MAP

MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

FIGURE 2
AREA MAP
MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

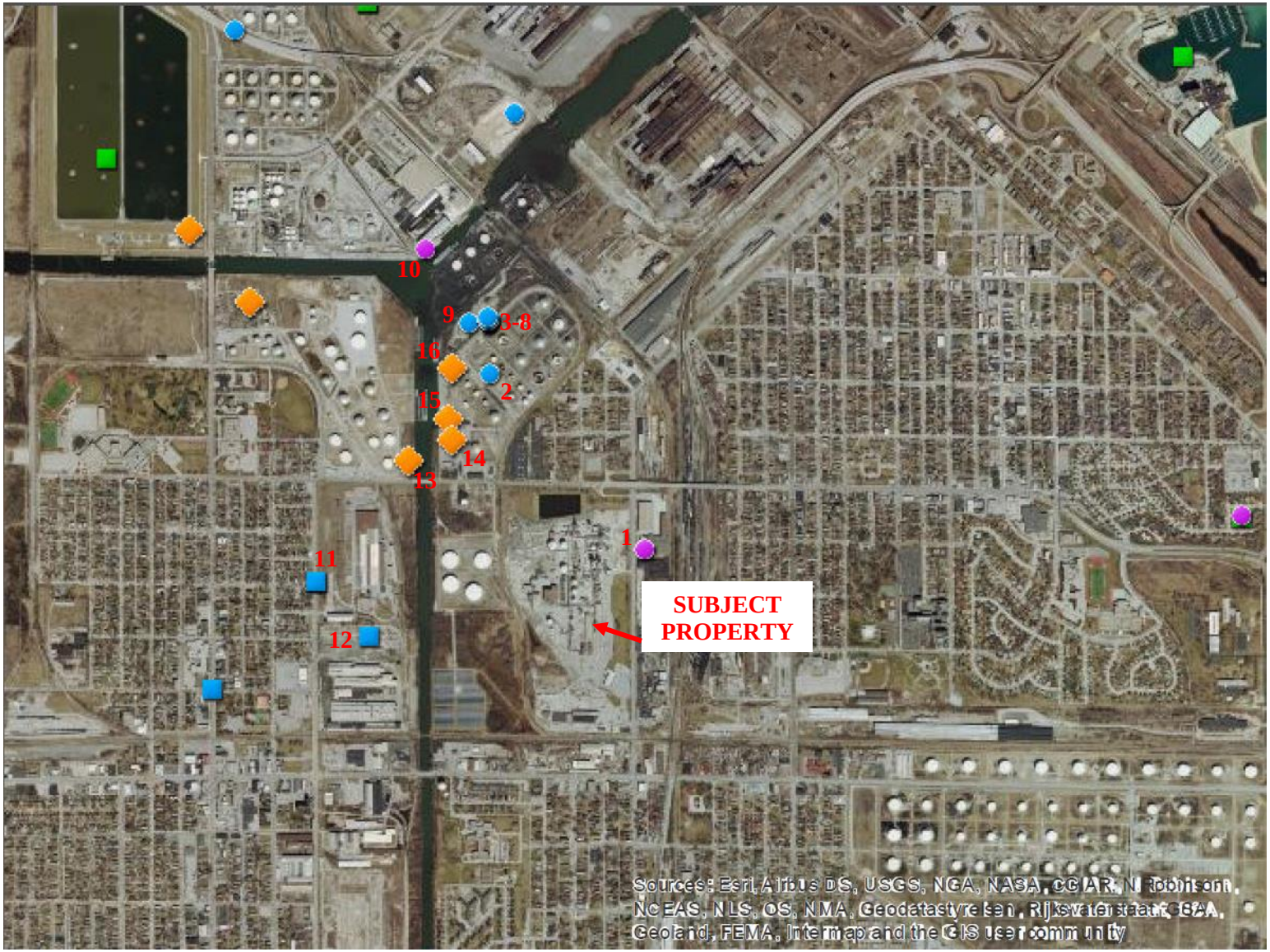

Figure 3
Water Well Search Location Map
(1 Mile Radius) Marport LLC (Formerly Osharai Indiana) Site

Trinity Consultants

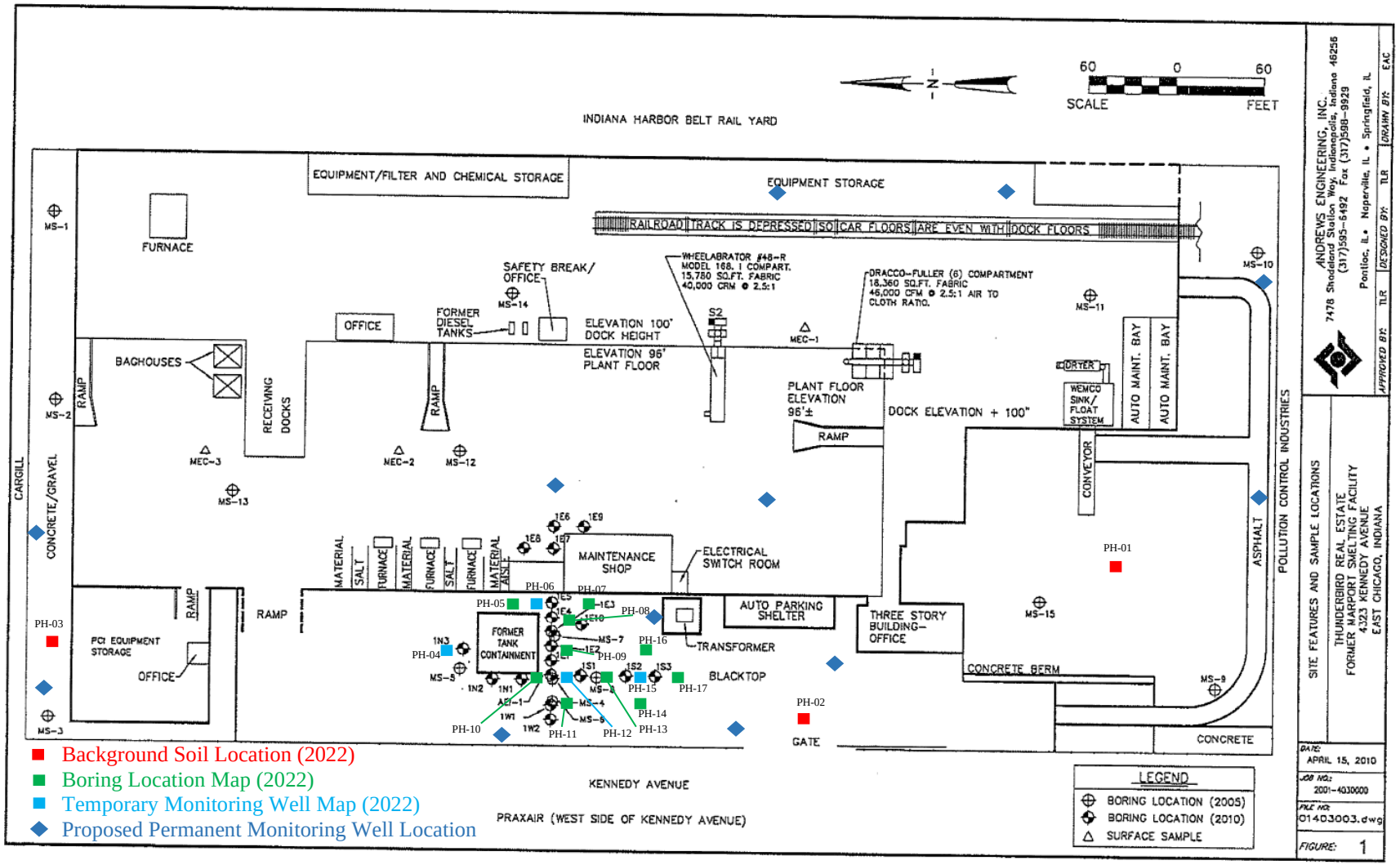

FIGURE 4
PERMANENT MONITORING WELL LOCATION MAP
OSHARAI INDIANA SITE

Trinity Consultants

FIGURE 5
Area Map
Marport LLC (formerly Osharai Indiana) Site

TABLES

Table 1
Compounds of Concern Summary

Constituents
VOCs - SW 846 8260B
Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromodichloromethane
Bromoform
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
1,2-Dibromo-3-Chloropropane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
2,2-Dichloropropane
Ethylbenzene
Hexachloro-1,3-butadiene
Isopropylbenzene
p-Isopropyltoluene

2-Butanone (MEK)
Methylene Chloride
4-Methyl-2-pentanone (MIBK)
Methyl tert-butyl ether
Naphthalene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichlorotrifluoroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,2,3-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
Xylenes, Total
PAHs - SW 846 8270 SIM
Anthracene
Acenaphthene
Acenaphthylene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene
1-Methylnaphthalene
2-Methylnaphthalene
2-Chloronaphthalene

Table 2
Water Well Search Summary

Well Location ID #	Owner	Installation Date	Depth (ft)	Diameter (in)	Ground Elevation (MSL)	Water Elevation (MSL)
1	Harbison Walker Co.	1/1/1929	1,830	12	590	448
2	Conoco Phillips	8/2/2008	19	6	585	566
3	Conoco Phillips	8/2/2007	19	6	581	562
4	Conoco Phillips	7/31/2007	19	6	578	559
5	Conoco Phillips	8/1/2007	19	6	583	563
6	Conoco Phillips	8/2/2007	19	6	589	570
7	Conoco Phillips	8/1/2007	19	6	584	565
8	Conoco Phillips	8/1/2007	19	6	585.00000	566
9	Northern Indiana Dock Co.	11/12/1986	35	8	587	552
10	US Gypsum	-	97	-	585	-
11	MJM Properties	11/11/2005	133	4	-	-
12	BLAW - KNOW Founding	2/26/1984	30	12.75	-	-
13	Buckeye Pipeline Co	-	25	3	-	-
14	Buckeye Pipeline Co	-	19	6	-	-
15	Buckeye Pipeline Co	-	19	6	-	-
16	Buckeye Pipeline Co	-	19	6	-	-

Table 3
Soil Results Summary

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID																	
			Background																	
			PH 01 Soil 5-6	PH 02 Soil 1.25-2.25	DUP 01	PH 03 Soil 1.25-2.25	PH 04 SOIL 1.5-2	PH 05 SOIL 1.5-2	PH 06 SOIL 1.5-2	PH 07 SOIL 1-1.5	PH 08 SOIL 2.5-3	PH 09 SOIL 2-2.5	PH 10 SOIL 1.5-2.25	PH 11 SOIL 2-2.5	PH 12 SOIL 1.5-2	PH 13 SOIL 2-2.5	PH 14 SOIL 1.5-2.5	PH 15 SOIL 1.5-2	PH 16 SOIL 1.5-2.5	PH 17 SOIL 1.5-2
VOCs 8260B	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acetone	100,000	0.0365	**0.221**	ND	**0.0732**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.181**	ND
Acrylonitrile		0.00361	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	51	0.000467	ND	ND	ND	ND	ND	ND	**0.0035**	**0.000844 J**	**0.0864**	ND	ND	ND	ND	ND	ND	ND	**0.00626**	ND
Bromobenzene		0.000900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.000725	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.00117	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.00197	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	110	0.00525	ND	ND	ND	ND	ND	**0.286**	**0.056**	ND	**0.11**	**0.56**	ND	ND	ND	ND	ND	ND	**0.0218**	ND
sec-Butylbenzene	150	0.00288	ND	ND	ND	ND	ND	**0.152 J**	**0.0398**	ND	**0.0741**	**0.348**	ND	ND	ND	ND	ND	ND	**0.0113 J**	ND
tert-Butylbenzene	180	0.00195	ND	ND	ND	ND	ND	ND	**0.00343 J**	ND	**0.00465 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	29	0.000898	ND	ND	ND	ND	ND	**0.0237 J**	**0.00306 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.000210	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.000612	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.00170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.00103	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.00435	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.000865	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.000450	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.00390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.000648	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.000750	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.000425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.000600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.000700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.00161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.000491	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.000649	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.000606	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,300	0.000734	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.013**	ND
trans-1,2-Dichloroethene		0.00104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.00142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.000809	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.000501	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.000757	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.00114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.00138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	250	0.000737	ND	ND	ND	ND	ND	ND	**0.0214**	**0.00159 J**	**0.227**	ND	ND	ND	ND	ND	ND	ND	**0.0656**	ND
Hexachloro-1,3-butadiene		0.00600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.000425	ND	ND	ND	**0.00272 J**	ND	**0.193**	**0.0551**	**0.00191 J**	**0.154**	**0.113**	ND	ND	**0.0842 J**	ND	ND	ND	**0.0181**	ND
p-Isopropyltoluene	__	0.00255	ND	ND	ND	ND	ND	**0.231**	**0.0743**	**0.00296 J**	**0.169**	ND	ND	ND	ND	ND	ND	ND	**0.0281**	ND
2-Butanone (MEK)	28,000	0.0635	ND	ND	ND	**0.0936 J**	**0.0871 J**	ND	**0.148**	**0.0656 J**	**0.114**	ND	ND	**0.0804 J**	ND	**0.0871 J**	**0.146**	**0.133**	**0.0952 J**	**0.0925 J**
Methylene Chloride		0.00664	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.00228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.000350	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	86	0.00488	ND	ND	ND	ND	ND	**0.355**	**0.171**	**0.0257**	**0.513**	**0.265**	ND	ND	**0.617 J**	ND	ND	ND	**0.118**	ND
n-Propylbenzene	260	0.000950	ND	ND	ND	**0.00341 J**	ND	**0.222**	**0.0538**	**0.00298 J**	**0.125**	**0.201**	ND	ND	**0.194 J**	ND	ND	ND	**0.0198**	ND
Styrene		0.000229	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.000948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	27	0.000695	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.299**	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.000754	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	170	0.000896	ND	**0.0165**	**0.00904**	**0.00497**	ND	ND	**0.00806**	**0.0121**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	820	0.00130	ND	ND	ND	**0.00439 J**	ND	ND	**0.0154**	**0.00632**	**0.498**	ND	ND	ND	ND	**0.00295 BJ**	ND	ND	**0.0123**	ND
1,2,3-Trichlorobenzene		0.00733	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.00440	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.000923	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	6.3	0.000597	ND	ND	ND	ND	ND	**0.367**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.011**	ND
Trichloroethene	19	0.000584	ND	ND	ND	**0.00265**	ND	**0.685**	**2.78**	**0.0101**	ND	ND	ND	ND	**0.100**	ND	ND	ND	**0.0497**	ND
Trichlorofluoromethane		0.000827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.00162	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	220	0.00158	ND	ND	ND	**0.00540 J**	ND	**0.122**	**0.0847**	**0.0128**	**0.620**	**0.0661 J**	ND	ND	ND	ND	ND	ND	**0.125**	ND
1,2,3-Trimethylbenzene	290	0.00158	ND	ND	ND	**0.00852**	ND	**0.389**	**0.139**	**0.00801**	**0.250**	ND	ND	ND	**0.141 J**	ND	ND	ND	**0.084**	ND
1,3,5-Trimethylbenzene	180	0.00200	ND	ND	ND	**0.00797**	ND	**0.813**	**0.248**	**0.00904**	**0.305**	ND	ND	ND	ND	ND	ND	ND	**0.0909**	ND
Vinyl chloride		0.00116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	260	0.000880	ND	ND	ND	**0.00892 J**	ND	**0.0244 BJ**	**0.0648**	**0.0187**	**1.36**	ND	ND	**0.00151 BJ**	ND	**0.00590 BJ**	ND	**0.000880 J**	**0.0621**	ND
PAHs 8270 SIM																				
Anthracene	100,000	0.00230	ND	ND	ND	**0.00637**	ND	**0.418**	**0.0124**	**0.28**	**0.186**	**1.12**	**0.00418 J**	ND	**0.696**	ND	ND	ND	**0.0555**	ND
Acenaphthene	45,000	0.00209	ND	ND	ND	ND	ND	**0.316**	**0.00968**	**0.172**	**0.2**	**5.6**	ND	**0.173**	**1.39**	ND	ND	ND	**0.0309**	ND
Acenaphthylene	__	0.00216	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.00230 J**	ND	ND	**0.0351 J**	ND	ND	ND	ND
Benzo(a)anthracene	210	0.00173	ND	ND	ND	**0.014**	ND	**1.06**	**0.0373**	**1.13**	**0.25**	**0.759**	ND	**0.0125**	**0.148**	ND	ND	ND	**0.163**	ND
Benzo(a)pyrene	21	0.00179	ND	ND	ND	**0.00590 J**	ND	**0.612**	**0.0258**	**0.780**	**0.126**	**0.578**	ND	**0.00603**	**0.0844**	**0.0596 J**	ND	**0.0133**	**0.125**	ND
Benzo(b)fluoranthene	210	0.00153	ND	ND	ND	**0.0062**	ND	**0.824**	**0.0389**	**1.14**	**0.152**	**0.446**	ND	**0.00557 J**	**0.0577**	**0.0461 J**	ND	**0.00544 J**	**0.16**	ND
Benzo(g,h,i)perylene	__	0.00177	ND	ND	ND	**0.00456 J**	ND	**0.293**	**0.0302**	**0.517**	**0.149**	**0.264**	**0.0223**	**0.00412 J**	**0.0702**	**0.0500 J**	ND	**0.0695**	**0.0848**	ND
Benzo(k)fluoranthene	2,100	000215	ND	ND	ND	ND	ND	**0.304**	**0.0121**	**0.363**	**0.0372**	**0.0971**	ND	ND	**0.00853**	**0.153**	ND	ND	**0.061**	ND

Chrysene	21,000	0.00232	ND	ND	ND	**0.0156**	ND	**0.931**	**0.0381**	**1.15**	**0.179**	**0.677**	ND	**0.0153**	**0.185**	**0.0302 J**	ND	ND	**0.141**	ND
Dibenz(a,h)anthracene	21.0	0.00172	ND	ND	ND	ND	ND	**0.0951**	**0.00507 J**	**0.121**	ND	**0.0688**	ND	ND	ND	**0.0531 J**	ND	ND	**0.0185**	ND
Fluoranthene	30,000	0.00227	ND	ND	ND	**0.0236**	ND	**1.93**	**0.0738**	**2.38**	**0.409**	**1.54**	ND	**0.0416**	**0.359**	**0.0380 J**	ND	**0.00409 J**	**0.317**	ND
Fluorene	30,000	0.00205	ND	ND	ND	ND	ND	**0.288**	**0.00735**	**0.11**	**0.279**	**7.19**	ND	**0.294**	**1.94**	**0.0625**	ND	ND	**0.0296**	ND
Indeno(1,2,3-cd)pyrene	210	0.00181	ND	ND	ND	**0.0024 J**	ND	**0.367**	**0.0191**	**0.569**	**0.0702**	**0.197**	ND	**0.00277 J**	ND	**0.0433 J**	ND	**0.0117**	**0.0823**	ND
Naphthalene	86	0.00408	ND	ND	ND	**0.0150 J**	ND	**1.08**	**0.157**	**0.232**	**0.886**	**5.44**	ND	**0.00732 J**	**0.57**	**0.0493 J**	ND	ND	**0.218**	ND
Phenanthrene	__	0.00231	ND	ND	ND	**0.21**	ND	**4.73**	**0.232**	**1.91**	**2.07**	**15.9**	ND	ND	**8.21**	**0.114 J**	ND	ND	**0.482**	ND
Pyrene	23,000	0.00200	ND	ND	ND	**0.0155**	ND	**1.51**	**0.0683**	**1.93**	**0.37**	**2.91**	ND	**0.186**	**1.33**	**0.081**	ND	**0.0754**	**0.292**	ND
1-Methylnaphthalene	390	0.00449	ND	ND	ND	**0.0523**	ND	**1.77**	**0.209**	**0.334**	**1.37**	**73**	ND	**0.428**	**25.2**	**0.154**	ND	ND	**0.387**	ND
2-Methylnaphthalene	3,000	0.00427	ND	ND	ND	**0.0306**	ND	**2.11**	**0.259**	**0.411**	**1.65**	**32**	ND	ND	ND	**0.126 J**	ND	**0.0051 J**	**0.469**	ND
2-Chloronaphthalene	60,000	0.00466	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.185 J**	ND	ND	ND	ND

J = The identification of the analyte is acceptable; the reported value is an estimate.
B = The same analyte is found in the associated blank.
ND = Not Detected Above Laboratory MDL

Table 4
Groundwater Results Summary Q1-Q4/2023

Constituents	IDEM Screening Level	Lab (MDL)	MW-1 Q1	MW-1 Q2	MW-1 Q3	MW-1 Q4	MW-2 Q1	MW-2 Q2	MW-2 Q3	MW-2 Q4	MW-3 Q1	MW-3 Q2	MW-3 Q3	MW-3 Q4	MW-4 Q1	MW-4 Q2	MW-4 Q3	MW-4 Q4	MW-5 Q1	MW-5 Q2	MW-5 Q3	MW-5 Q4	MW-6 Q1	MW-6 Q2	MW-6 Q3	MW-6 Q4
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	**0.130 J**	ND	ND	ND	**0.101 J**	ND	ND	ND	ND	ND	ND	ND	**0.116 J**	ND	ND	ND	**0.097 J**	ND	ND	ND	ND	ND	ND	ND
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**2.72**	**2.77**	**1.02**	4.19	ND	ND	ND	ND	**0.856 J**	ND	**1.02**	**1.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	70	0.149	ND	ND	ND	ND	ND	ND	ND	ND	**0.221 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	6.01	**3.91**	**4.2**	**6.32**	ND	ND	ND	ND	**0.837 J**	ND	**1.01**	**1.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**2.43**	**1.90**	**3.06**	**3.53**	ND	ND	ND	ND	**0.616 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																										
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0541**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.112**	ND	**0.0310 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	ND	ND	ND	ND	**0.0507B**	ND	ND	ND	**0.0674B**	ND	ND	**0.0315 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	120	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	**0.0185 J**	ND	**0.0952**	ND	**0.0406 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

B= Same analyte found in the associated blank.

ND = Not Detected Above Laboratory MDL

Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Sample ID

MW-7 Q1	MW-7 Q2	MW-7 Q3	MW-7 Q4	MW-8 Q1	MW-8 Q2	MW-8 Q3	MW-8 Q4	MW-9 Q1	MW-9 Q2	MW-9 Q3	MW-9 Q4	MW-10 Q1	MW-10 Q2	MW-10 Q3	MW-10 Q4	MW-11 Q1	MW-11 Q2	MW-11 Q3	MW-11 Q4	MW-12 Q1	MW-12 Q2	MW-12 Q3	MW-12 Q4
ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**94.9**	ND	ND	ND	ND	ND	ND
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0.138 J	ND	ND	ND	**0.190 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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ND	ND	ND	ND	**0.516 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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ND	ND	ND	ND	**1.58**	**1.69**	**2.52**	**2.96**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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0.0269 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0703**	ND	ND	ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0597**	ND	ND	ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0796**	ND	ND	ND	ND	ND	ND	ND	ND	ND
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0.0239 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0576**	ND	ND	ND	ND	ND	ND	ND	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
0.0540 J	ND	ND	ND	ND	ND	ND	ND	ND	**0.104B**	ND	ND	ND	**0.115B**	**0.144**	ND	ND	**0.141B**	ND	ND	ND	**0.162B**	ND	ND
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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0.0639	ND	**0.062**	ND	ND	ND	ND	ND	ND	**0.546B**	ND	ND	ND	**0.672B**	ND	ND	**0.0183 J**	**0.696B**	ND	ND	**0.0199 J**	**0.624B**	ND	ND
0.054	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.121**	ND	ND	**0.0643B**	ND	ND	**0.0200 J**	**0.0650B**	ND	ND
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APPENDIX A. SUPPLEMENTAL REPORTS

Copies of Phase II Environmental Site Assessment Reports prepared by Andrews Environmental Engineering, Inc. in 2005 and 2010.

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

On the

FORMER MARPORT SMELTING CO. SITE
4323 KENNEDY AVENUE
EAST CHICAGO, LAKE COUNTY, INDIANA 46312

Prepared for:

Pollution Control Industries, Inc.
4343 Kennedy Avenue
East Chicago, Indiana 46312

Prepared by:

Andrews Environmental Engineering, Inc.
7478 Shadeland Station Way
Indianapolis, Indiana 46256
(317)-595-6492

May 18, 2005

TABLE OF CONTENTS

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
FORMER MARPORT SMELTING CO. SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

1.0 PROJECT BACKGROUND AND SUMMARY

Andrews Environmental Engineering, Incorporated (Andrews) is pleased to present a report covering our investigation and findings from the Phase II Environmental Site Assessment (ESA) for the property identified below. This Section provides an overview of the project, including a summary of the findings of the Phase I ESA, as well as a description of the activities undertaken during this Phase II ESA. The scope of the Phase II ESA was designed to address, or further evaluate, the findings or Recognized Environmental Concerns (REC's) revealed during the Phase I ESA.

Property name ("Site"):	**Marport Smelting Company (most recent occupant).**
Site address (or other physical Site location description – Include street address, city, county (parish, township, etc.), and state):	The Site is located at 4323 Kennedy Avenue, in the 3rd District of the City of East Chicago in Lake County, Indiana. The property is on the east side of Kennedy Avenue between Chicago Avenue and Columbus Avenue. See Figure 1, the Site Location Map. The Site can also be described as encompassing nearly 8 acres located in the Southwest Quarter of the Northeast Quarter of Section 28, Township 37 North, Range 9 West, Lake County, Indiana. The location of the Site is shown on Figure 1 that overlays an excerpt from the United States Geologic Survey [USGS] Topographic Map, Whiting Quadrangle, 1998.
Representative Ordering Report ("User"):	Ms. Tita LaGrimas, Executive Vice President, Regulatory Affairs, Pollution Control Industries, Inc.

Reason for Requesting the Phase I ESA:	Environmental due diligence and appropriate inquiry as a condition of potential purchase.
Date of initial contact from client:	October, 2004.
Date Project Authorized:	February 2005.
Date Project Completed:	May 2005.
Site description:	The former Marport Smelting Co. property has not been in use for several years. It consists of a rectangular shaped parcel having 846 feet of roadway frontage on the east side of Kennedy Avenue and a gross land area of 7.85 acres. The property is surrounded by a chain link fence or other barriers (plant walls, rail lines) along all borders. The site is improved with an older, heavy industrial building of steel frame construction that was most recently in use as a secondary aluminum smelter. Approximately 5 acres of the property is under roof with the majority of the available open space on the property to the south and west of the main plant structure. A new addition of approximately 9,000 square feet was added to the industrial plant at the northwest corner in 1997 that was then used as warehouse space. Only about five percent (5%) of the building space is dedicated for office space, including an unfinished area on the second level of the south end of the structure. The Indiana Harbor Canal is approximately one-half mile west of the Site. The Canal connects the Grand Calumet River, approximately one and one-quarter miles to the south and the Indiana Harbor of Lake Michigan, located about 2 ½ miles to the northeast of the Site. The immediate area of the Site is in light to heavy industrial and manufacturing, industrial waste management, and transportation (rail) use. The surficial geology in this vicinity is man-made, being composed of fill materials that often include sand, slag, refuse, cinders, brick fragments, and other industrial byproducts. See Figure 2 for a Site Features layout of the facility and property, as well as the sampling locations conducted during this Phase II ESA.
Site operations:	Currently, no manufacturing, storage, or commercial operations are being conducted on the property. The gate is normally left closed, and a guard is on duty around the clock. Some unused equipment or salvageable materials are stored outside of the structure on the south end of the property and at a small equipment graveyard at the southeast corner of the property. Other heavy equipment remains in

	the plant interior including a crane, front-end loader, the rotary and reverbatory furnaces, hoppers, air pollution control baghouses and dust collectors, etc. No sows or other reclaimed aluminum remain on the property. The "Wemco Sink/Float" system for recovery of scrap metals or slag and its associated water recovery system remain on the first and upper levels on the south end of the plant. This system was installed in the plant in the late 1990's. A spectrometer, metal lathe, and other quality assurance equipment and offices (some unfinished) are located above the "Auto" maintenance bays south of the scrap/slag processing equipment.

Summary of Site History

Most of the present plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. A City Directory related that the Harbison Walker Refractory continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on review of an earlier Phase I ESA Report, the US Reduction Company purchased the Site in the 1970's and operated it for aluminum smelting. The US Reduction Company was more recently located south of this Site closer to Kennedy Avenue and Chicago Avenue, and at 4610 Kennedy Avenue. Marport Smelting Co. began secondary aluminum smelting production operations at the Site in 1985. Another company, Portage Alloys, Inc., also appears at the Marport Smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the site has not been in use since that time.

Summary of ESA Conclusions

PHASE I ESA Conclusions:

Several items or potential concerns were noted during the Phase I ESA process at this Site. However, all of the following do not constitute *recognized environmental conditions* that are to be identified through the *ASTM Standard E 1527* for the conduct of Phase I ESA's. Several of these findings were presented only to ensure that the User of this Report was aware of these potential issues.

- A significant quantity of rubbish, refuse, and other unused materials were observed on the premises and in the building;
- Waste and virgin lubricants in drums and pails are stored in the southwest area of the building. Numerous large equipment batteries were also stored in this area. Lubricants also remain in the "Auto" maintenance bays, and several other locations in drums on the premises;
- Past petroleum spillage to the cracked concrete floor in the oil storage area was apparent;

- Unused filter bags, chemicals, cement, roofing materials, and other surplus materials (dry alkaline materials, ferro-silicon products) are stored in the building interior, equipment room, "auto" maintenance area and maintenance shop.

- A large number of pieces of industrial equipment, dust collectors, large (Westinghouse) induction motors, other electrical equipment, hoppers, conveyors, etc., remain on the property;

- Large pieces of equipment including three rotary furnaces, a reverbatory furnace, baghouses, plenums, several pieces of mobile material handling equipment, the Wemco sink/float system, as well as other equipment, of varying size and condition, remain on the property that has not been salvaged;

- Materials that may be considered solid wastes requiring characterization and disposal are located in hoppers, bins, and in considerable quantities on the interior floor surfaces of the structure (baghouse dust, salt cake, etc.);

- A 120,000 gallon fuel oil storage tank was previously present in the concrete containment area on the west side of the plant building for at least some time in the 1980's. Smaller diesel storage tanks were located inside of the building.

- The Site is located in an area of Lake County that has been in industrial use for over a century and is situated on "made" land consisting of fill composed of beach sand, cinders, brick fragments, slag, refractory materials, and other industrial by-products. A shallow water-bearing (saturated) zone or stratum is also common to the locale.

- Although the known past uses of the property should not have included handling of large quantities of hazardous substances other than metals and petroleum products, the facility's consistent use of minerals, metal products, and refractory materials over the years may have allowed accumulation of elevated concentrations of inorganic substances in the soil and interior surfaces of the property.

PHASE II ESA Conclusions:

In order to address the potential concerns identified above through the Phase I ESA, the User elected to conduct a Phase II ESA to determine if any releases of petroleum or hazardous substances have occurred, or are likely to occur, at the Site. Accordingly, Andrews performed a Phase II ESA at the Site. The assessment activities consisted of drilling fifteen (15) Geoprobe borings at eleven (11) selected locations or areas on the premises. The soil boring locations were selected in order to evaluate potential impacts from several previous manufacturing or petroleum storage practices at the Site. The borings were also located in areas to evaluate the general stratigraphy and characteristics of the historical fill material placed across the Site. Another reason for conducting many of the borings was to ascertain or confirm the depth and consistency of the uppermost saturated zone across the Site. Normally, at least one soil sample (with the exception of boring MS-2) was collected from each boring

and submitted for laboratory analysis. The soil boring cores were also visually examined and screened for potential contamination.

Three (3) samples of surface materials or dust were also obtained inside of the former plant structure. The surface material samples were analyzed to determine the content of hazardous constituents in the loose "dust-like" materials present on the interior surfaces and lower plant floors that may represent a direct contact or respirable concern during any future Site activities that may disturb the materials.

Andrews determined that fill across the Site ranges in thickness from approximately 5 ½ to 9 feet below ground surface, depending on the surface topography at the site. An exception was at boring MS-9 at an elevated position in the slag and gravel fill near the southwest corner of the site where saturated conditions were not reached until 12 feet below the surface elevation. The fill materials comprising the upper stratigraphy at the Site normally consisted of fine sand, with some slag and miscellaneous fill materials, and some refractory material.

An area in the vicinity of the former oil storage tank pumps on the west side of the plant structure evidenced the presence of subsurface petroleum at boring MS-4. Several other borings (MS-5 through MS-8) were then emplaced in that vicinity to preliminarily determine the extent of the contamination. The extent of the petroleum presence to the east was not defined. Boring MS-10 at the southeast corner of the property near the remaining equipment grave yard indicated a couple of semi-volatile constituents above IDEM's RISC industrial standards at the 3 ½ foot depth in a sand and slag material. However, with the exception of the petroleum contamination commencing on the west side of the plant, the subsurface sample analyses did not indicate widespread residual contamination from the fill or previous site activities.

Slightly elevated arsenic levels were noted in two (2) samples obtained along the north side of the site outside of the plant building, but this occurrence was limited to that area and may reflect constituents of the soils deposited in that area.

The three (3) surface material samples taken from the plant interior did indicate elevated levels of several metals (lead, cadmium, chromium), or a few semi-volatile compounds in one or more samples (relative to acceptable surface soil values), but these are not at levels of concern for materials that can be separately removed as industrial wastes.

Color photographs taken during the Site reconnaissance of selected features are included in Appendix A to this Report.

2.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

Andrews conducted a Phase II Environmental Site Assessment (Phase II ESA) at the former Marport Smelting Co. property located at 4323 Kennedy Avenue, East Chicago, Indiana, on March 8 and 9, 2005.

2.1 Purpose

The purpose and design of the Phase II ESA was to evaluate the overall surface and subsurface conditions of the study Site. The client, or User of this ESA report, had anticipated that, due to the industrial setting and historical use of the Site, conditions potentially causing contamination on or of the Site, may have occurred. Accordingly, an initial assessment of surface and subsurface soil conditions at the Site was conducted to determine if significant contamination was present.

2.2 Overview

The field activities were undertaken at the facility on March 8 and 9, 2005 with some site reconnaissance being conducted on March 7 in order to determine the proposed sampling locations. First, three (3) surface material samples were obtained from the interior of the plant building. These were analyzed for inorganics (metals and cyanides) and semi-volatile organic compounds (SVOC's) in order to assess any constituent presence in the loose exposed materials generated during the aluminum recovery and resmelting operations.

The majority of the work during the Phase II ESA consisted of drilling fifteen (15) Geoprobe® borings at eleven (11) locations across the Site and within the plant structure. Duke's Earth Services, Inc. (Duke), Mooresville, Indiana, was contracted directly by Pollution Control Industries, Inc. (PCI, the Client) to provide the drilling services. A track-mounted Geoprobe® Model 6610 was provided by the subcontractor to allow access to all areas of the Site and was equipped with rotary percussion drilling capability to penetrate concrete and asphalt, in addition to pneumatic push-probe boring technology. Duke also provided decontamination equipment for the project.

The locations of the surface material samples and subsurface borings are shown on Figure 2 to this Report.

One soil sample was collected from each boring and submitted to Microbac Laboratories, Sima Division, located in Merrillville, Indiana, for laboratory analysis. The sample from soil boring MS-2 was not analyzed as the soil boring location and core profile did not indicate a potential benefit from the analyses. Microbac also provided the sample containers, preservatives, and sampling equipment required for EPA Method 5035 Volatile Organic Compounds (VOC's) analyses, and ice chests. The analytical data results from the soil borings are summarized in Table 2 at the end of this report.

Andrews compared the analytical results to the IDEM Risk Integrated System of Closure, (RISC), Technical Resource Guidance Document, dated February 15, 2001, Table A, Residential and Industrial Default Closure Levels. However, since the Site is not being closed under a

regulatory or voluntary program at IDEM, the Default Closure Levels are used for comparative purposes only to draw conclusions about the overall environmental condition of the Site. This Non-Rule Policy document is the most appropriate reference for these comparative determinations in the State of Indiana.

2.3 Surface Material Samples

The surface "material" samples were obtained by compositing discrete samples of three (3) different materials that were located in three (3) different locations inside the plant building. These samples were obtained by collecting the sample aliquots using a stainless steel scoop and placing the volumes into a stainless steel bowl for thorough mixing. The necessary amount of the material was then placed into the sample containers for laboratory analysis.

SUMMARY OF SURFACE MATERIAL SAMPLES

Sample ID	Suspected Material	Location	Observations
MEC-1	Baghouse dust	Throughout plant interior on floor and surfaces	Light brown, very fine, dusty to fluffy material.
MEC-2	Aluminum dross fines	Aluminum dross on base (no floor slab) of lower deck east of furnaces	Similar fine texture to MEC-1, but lighter color , fluffy wet cake-like material
MEC-3	Salt cake fines	Salt slag storage area on lower level, north end of plant interior	Darker material but still very fine, with metallic (aluminum) specks

The suspected baghouse dust (Sample MEC-1) was an easily disturbed material becoming airborne during sampling. The material varied from a fine dusting to one-quarter inch (1/4") and, in some locations, up to one-half inch (1/2") in thickness on the floor slabs and other surfaces in the plant.

Sample MEC-2 was obtained of the surface material remaining in the former aluminum dross storage areas. Based on a nearby subsurface soil boring (MS 12), this material is present to a depth of about 3 feet from the surface, with no underlying concrete or other floor slab.

The surface material remaining in the former salt slag storage area, from which Sample MEC-3 was obtained, was approximately 6 inches thick. The nearby subsurface soil boring location (MS-13) revealed a 1-foot thick concrete slab under this material. Mixed slag and broken concrete and fragments continued to a depth of 3 feet beneath the concrete slab at that location.

2.4 Subsurface Soil Samples

Duke advanced fifteen Geoprobe® borings using direct push methods on a continual basis in increments of five feet using a five-foot long macro-sampler from the ground surface to the target depth. The target depth was the depth where saturated soil or groundwater was encountered. Groundwater was encountered in the fill material or native sandy soils in all of the borings. The borings are referred to as MS-1 through MS-15. Figure 2 shows the approximate location of the borings (the exact location and elevation of each boring was not surveyed). Boring logs are provided in Appendix B. All borings were backfilled following completion and sampling with bentonite pellets, which were then hydrated to plug the boring.

The Phase II ESA work plan for provided for the following activities:

- Conduct soil borings around and inside of the structure in order to collect soil samples for analysis and to determine any environmental impairment of the property.

- While conducting the soil borings, continue boring at each location to the saturated zone to roughly determine if the subsurface stratigraphy is continuous across the site and to determine its susceptibility to contamination from on-site and off-site sources.

Personnel conducting soil borings for sample collection utilized a Geoprobe® Model 6610 direct push sampling rig to advance a 1.75" Macrocore® sample tube. To prevent cross contamination of samples the sampling tube was provided with a disposable PETG liner, and the tube itself was decontaminated with soap and water between each boring location. To further reduce the risk of cross contamination of sample media, samples were transferred directly from the sample tube liner into laboratory-supplied containers by utilizing single use disposable latex gloves. Samples to be analyzed for volatile organic compounds (VOC's) were collected using a sampling device in accordance with EPA Method 5035 to minimize volatilization (loss) of VOC's from the soil media to the atmosphere during sample collection.

The samples were collected from differing strata and media throughout the site in an attempt to characterize all noted media. Subsurface characteristics were demonstrative of expected site conditions: upper intervals were comprised of various fill materials including foundry slag, refractory brick, salt slag and dross fragments. All retrieved media were field screened for the presence of organic compound vapors utilizing a MiniRae 2000 Photo Ionization detector (PID), in addition to organoleptic evaluation. Andrews also described the soil in the field using the Unified Classification System and the Munsell Color Chart, and generated boring logs to characterize the subsurface at the Site.

The individual sampling locations were selected to determine if any off site impacts currently are or were migrating onto the property from off-site and to characterize the subsurface in or adjacent to any known historical waste or product storage areas. The varying rationale for the location of the various soil borings is shown in the Table that follows. The Table also summarizes the findings or observations recorded on the boring logs in Appendix B, and relates the soil boring depth from which the analytical samples were procured. The abbreviation "bgs" means *below grade surface.*

SUMMARY OF GEOPROBE® BORING LOGS WITH SAMPLE LOCATIONS

Geo-probe® Boring ID	Total Boring Depth (feet bgs)	Sample Number and Depth (feet bgs)	Purpose of Boring Location	Findings
MS-1	10'	MS-1-1 (8.5')	Northeast corner of Site (Borings conducted at property corners in each direction for overall site characterization).	Silty Clay and miscellaneous fill materials throughout boring. Fine saturated sand at 9' bgs. No odors
MS-2	10'	MS-2-1 (7.5')	North side of Site, near where former floor sweepings pile reported and spilled dry material from drums observed	No odors, visible staining, or other environmental impacts were noted other than the presence of sandy mixed fill materials throughout. Saturated soil at 8-10'. Sample not analyzed
MS-3	10'	MS-3-1 (3')	Northwest corner of property	Silty clay and fill to 2', then very fine slag fill material to 4'. Fine sand beneath 4' becoming saturated at 6' bgs.
MS-4	10'	MS-4-1 (5')	Adjacent to former oil storage tank containment and pumps on west side of plant building	Concrete slab over soil to 2.5'depth. Fine sand with very noticeable petroleum odor and staining at 2.5 to 6.5'. Saturated with water at 6.5'.
MS-5	10'	MS-5-1 (2.5')	Delineate petroleum release found at MS-4 boring location	Concrete slab over soil to 2.5'. Mixed slag and fill to 4', followed by fine sand becoming saturated at 6'. No petroleum release evident.
MS-6	10'	MS-6-1 (5')	Delineate petroleum release found at MS-4 boring location	Concrete slab over soil to 2.5' bgs, under which is mixed slag and assorted fill material to 4'. Very fine sand becoming saturated at 7.5'. No petroleum release evident.

Geo-probe® Boring ID	Total Boring Depth (feet bgs)	Sample Number and Depth (feet bgs)	Purpose of Boring Location	Findings
MS-7	10'	MS-7-1 (4.5')	Delineate petroleum release found at MS-4 boring location	Concrete slab over soil to 2.5' followed by fine sand with some slag material. Saturated sand at 6.5' followed by saturated sand to 10'where boring terminated. Petroleum odor noted throughout profile decreasing with depth.
MS-8	10'	MS-8-1 (7')	Delineate petroleum release found at MS-4 soil boring	Concrete slab over soil to 3.5' followed by fine sand becoming saturated at 7'. Slight hydrocarbon odor noted.
MS-9	15'	MS-9-1 (9.5')	Southwest corner of property (at higher elevation)	Concrete slab (6" thick) found at 8" bgs. Sand and slag below at 3.5' to 5'. Large gravels/chunks of material from 5'-8.5'. Hydrocarbon odor noted at 8.5-10', but no PID readings. Followed by very fine sands becoming saturated at 12' bgs. .
MS-10	10'	MS-10-1 (3.5')	Southeast property corner and near equipment grave yard	Mixed sand and slag to 4.5 feet followed by poorly sorted sand to saturation at 8'.
MS-11	10'	MS-11-1 (5.5')	Adjacent to interior oil and "auto" scrap storage area. Cracked concrete slab and visual oil spillage	Concrete slab (6') with fill and sand to 5'. Very fine sand to saturation at 8 feet.
MS-12	10'	MS-12-1 (4.5')	Former aluminum dross storage area east of furnaces – no concrete floor slab – on lower elevation of plant interior	Fluffy wet cake material to 3', followed by fine sand water saturated at 5.5' bgs.

Geo-probe® Boring ID	Total Boring Depth (feet bgs)	Sample Number and Depth (feet bgs)	Purpose of Boring Location	Findings
MS-13	10'	MS-13-1 (4.5')	Former salt slag storage area on north end of plant interior, lower elevation	Concrete slab (1' thick) encountered 6" below grade. Mixed slag and concrete fragments to 4'. Fine sand to saturation at 6'.
MS-14	10'	MS-14-1 (4.5') MS-14-2 (6.5')	Near former location of 2 above ground diesel storage tanks on upper dock area near center of plant interior.	6" concrete slab over soil. Mixed slag/soil to 7' then fine sand to water saturation at 9.5'
MS-15	15'	MS-15-1 (3.5')	Southwest of plant at location of former (razed) plant area.	No recovery to 3.5 feet (gravel and slag) followed by mixed sand and slag to 5". Fine sand from 5 to 15 feet with water saturation at 12'

The PID screening of the soil cores, conducted during the soil boring sampling procedure, indicated some low level readings only in borings MS-4, MS-7, and in MS-14.

Boring MS-4 was located very close to the southwest corner of the site of the former fuel oil storage tank at the front (west side) of the facility. As the retrieved media were being field screened, a hydrocarbon odor was noted as fairly strong in the upper strata and decreasing in intensity with depth. The sample core also evidenced discoloration of the sand that is indicative of petroleum contamination. In an effort to determine rate and extent of potential impact, if any, additional borings MS-5 through MS-8 were emplaced in a ring around MS-4. Some hydrocarbon odor was noted in the approximate same depth profile in boring MS-7, and a slight odor was noted in MS-8. Borings MS-5 and MS-6 did not exhibit a hydrocarbon odor.

Boring MS-14 was emplaced in close proximity to the location of two (2) former diesel fuel tanks installed above-ground on the upper concrete dock inside the building and close to the "lunchroom" structure. The retrieved media did not exhibit any obvious traces of hydrocarbon odor, but did contain sufficient volatile organic compound content to reveal very low levels during the PID field screening process.

In addition to characterization of subsurface stratigraphy, a focus of the fieldwork was an effort to determine the presence and continuity of groundwater at the site. Because the top of the borings were not actually surveyed in, and due to the varying topography on the site, it is not possible to

determine the actual gradient of the groundwater encountered during the investigation. However, based upon the observations made at the facility it is a safe conclusion that the groundwater encountered in this investigation is relatively consistent across the site. The encountered groundwater across the west and north sides of the facility would indicate that the saturation zone begins at six (6) to six and one half (6 ½) feet below grade under these areas. Observations at other locations based upon grade changes, and level of the saturated zone, add strength to this conclusion.

3.0 ANALYTICAL RESULTS

The majority of the subsurface soil samples were analyzed for the following:

- Volatile organic compounds (VOCs), using EPA Method SW 8035/ 8260B;
- Semi-volatile organic compounds (SVOCs) using Method EPA 8270C SIM to include suitable detection limits for the subgroup of Polycyclic Aromatic Hydrocarbons (PAHs);
- Polychlorinated biphenyls (PCBs) using Method EPA 8082;
- RISC inorganics including antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc (Method EPA 6010), and mercury (Method EPA 7471);
- Total cyanides (SW 9012A); and,
- pH (Method SW 9045C).

The subsurface boring samples from boring locations MS-5 through MS-8 were analyzed only for Total Petroleum Hydrocarbons (TPH) using EPA Method SW 8015 (Modified). These samples were analyzed for the purposes of preliminarily delineating the petroleum plume that was first detected at the location of subsurface boring MS-4.

The three (3) surface material samples from the plant interior were analyzed for only the RISC inorganics and SVOC's on the presumption that any VOC's would already have volatilized, and that PCBs would not likely be found in these materials due to their fairly recent origin or generation.

The results of the sample analyses are summarized in Tables 1 and 2 of this report. The summary tables only list those constituents for which detections were reported in one or more or the samples analyzed through the several analytical methods employed. A particular constituent is not listed in the summary if it was not detected in any of the samples. The complete laboratory analytical report is included in electronic format in Appendix C to this report, and any copies, along with the Chain of Custody forms completed during the sample event that accompanied the samples to the analytical laboratory (Microbac). A single hardcopy of the laboratory reports is also provided with the original Phase II ESA report.

3.1 Surface Material Sample Results

Table 1 summarizes the sample analytical results from the three (3) surface material samples.

The analytical results from the surface material samples were compared to IDEM's RISC residential and industrial closure default levels. While the three materials sampled are definitely not natural soils, their exposure or potential for direct contact is similar and such a comparison is therefore appropriate on a preliminary level. The RISC comparisons were predominantly made relative to the

"direct contact" scenario, or default closure levels, since the materials are inside of a structure and exposed on the surface.

Sample MEC-1 showed the presence of several polycyclic aromatic hydrocarbons (PAHs) above the RISC residential and industrial closure levels. This is not surprising if, as suspected, the surface material sampled is composed, in large part, of baghouse dust or other emissions from the smelting furnaces. PAHs are common constituents of incomplete combustion of fossil fuels or other organic materials. Cadmium and lead were present at concentrations above the RISC residential default closure levels, but not above the industrial levels. The concentration of these metals indicate that TCLP testing may be advisable before handling or disposal of this material.

Sample MEC-2 taken of surface material in the former aluminum dross storage areas showed only the presence of lead at a concentration above the residential default closure level, with no PAH's being detected. The lead concentration was below the acceptable industrial default concentration. The lead concentration does exceed the acceptable lead concentration relative to potential migration to ground water. However, the material sampled is inside of the building and, presumably, will be removed if the structure is razed or the material is otherwise exposed to precipitation.

No constituents were found at concentrations of concern in the sample (MEC-3) taken from the former salt slag storage area.

3.2 Subsurface Soil Sample Results

Table 2 summarizes the analytical results from the subsurface soil sample analyses. These sample analysis results were compared to the RISC "indirect" or "construction" soil contact and the "migration to groundwater" residential and industrial default closure levels.

The soil boring samples were normally taken from the boring interval (depth) that, based on visual observations or PID readings, appeared most likely to harbor any contamination or otherwise exhibited unusual characteristics. If no unusual observations were made, either a sample was not analyzed from that boring (as at MS-2), or the sample was taken near the obvious fill materials or just above the saturated zone.

Sample MS-1-1 showed only arsenic at or near any of the RISC default residential or industrial closure levels. However, the arsenic concentration of 5.5 mg/kg was well below the industrial closure level of 20 mg/kg. Sample MS-2, also from the soil on the north side of the plant building, also showed only arsenic above the RISC residential closure level, but below the industrial level. The only other arsenic concentration above acceptable residential levels from any of the samples was from Sample MS-14-1-1 beneath the concrete floor slab on the upper deck of the plant interior.

Sample MS-4-1 did not indicate any constituents above the RISC levels although ethylbenzene and xylenes were detected. However, although TPH was not run on this particular sample, the sample evidenced significant petroleum contamination. Other samples (MS-5-1 through MS –8-1) were obtained from boring locations "stepped out", or circling, boring location MS-4 and were analyzed only for TPH. Samples from borings MS-5 and MS-6 to the north and west did not detect petroleum

using the TPH method. However, the samples from soil borings MS-7 and MS-8 to the east and south, respectively, detected TPH. The concentrations were above the informal IDEM standard of 100 mg/kg of TPH and appeared to be present at the saturated soil depth.

The sample from soil boring MS-9 (MS-9-1) did not reveal any VOC, SVOC, RISC organics, PCB's or other constituents above the RISC residential or industrial default closure values.

Sample MS-10-1 from the boring at the southeast corner of the property showed two metals, antimony and lead, and several PAHs above acceptable RISC residential concentrations. Two of the PAHs also exceeded the RISC industrial closure levels. These concentrations are not considered a concern since the subject industrial closure concentrations are based on the possibility of direct contact with the material. The sample was taken from a depth of 3.5 feet of mixed sand and slag, whereas the direct contact limitations envision the material near the soil surface (0-6 inches). Neither do these concentrations exceed the acceptable "migration to groundwater" pathway concentrations.

The MS-11-1 sample results do not indicate concentrations of concern for any of the constituents. However, this sample, obtained near obvious spillage of oil from the inside "auto" maintenance storage area, was not analyzed for TPH. Also, no soil recovery occurred at the interval where any residual soil contamination would most likely have been observed. Soil recovery in the boring core did not occur until 3.5 feet below the surface.

The samples taken from beneath the former aluminum dross and salt slag storage areas on the lower dock of the plant interior (Samples MS-12-1 and MS-13-1, respectively) did not reveal any constituent concentrations exceeding either the RISC residential or industrial default closure levels. Both of these samples were collected from a 4.5- foot depth below the surface level of the residual materials in these areas.

Soil boring MS-14 was conducted on the upper dock of the plant interior adjacent to where two (2) above ground diesel fuel storage tanks had been located. Sample MS-14-1 at the 4.5 foot depth showed only arsenic and lead above the RISC residential default level - but within the acceptable industrial default closure levels. The sample obtained at 6.5 feet was analyzed for TPH because of some low PID readings. That sample showed 34 mg/kg of diesel and extended range organics.

Sample MS-15-1, obtained from boring MS-15 in the area where an earlier plant building extension had been razed, shows only one PAH, Benzo[a]pyrene present at or above any of the RISC residential and industrial default levels. However, the concentration of this constituent is not considered a concern as the RISC default closure level is based on the possibility of "direct" contact with the contaminant, whereas the sample was obtained from 3.5 feet below the ground surface at this location. This subsurface soil concentration does not represent an appreciable risk for "indirect contact" (construction or utility workers), or for migration to ground water scenarios or pathways.

4.0 PHASE II ESA CONCLUSIONS

Andrews has performed a Phase II ESA at the Site, that consisted of drilling fifteen (15) Geoprobe® borings to determine or define subsurface conditions at eleven (11) selected locations or areas. The boring locations were selected in order to broadly evaluate potential impacts from the historical industrial operations on and near the Site. The borings were also located in areas to evaluate the characteristics of the fill materials historically emplaced across the Site, and to determine the general depth and continuity of saturated soils at the Site. In addition, three (3) surface material samples were taken of exposed materials inside of the plant structure on the Site.

No ground water samples were obtained from the uppermost saturated soil zone during this Phase II ESA and, therefore, these conclusions do not address that media.

Based on observations and analytical results from the soil borings and surface samples, the Site subsurface is in markedly good condition considering the nature of the historical fill materials emplaced in the area and the long industrial use of the property and the vicinity. The sample analytical results indicate several instances of elevated PAHs or metals on the property, but these are not consistent across the site or at levels of concern. The historical use of the Site (refractory manufacture and secondary aluminum smelting) has undoubtedly contributed to the identification of PAHs and several metals in the site soils from the raw materials, coal, and other fossil fuel used over the years. However, solvents, other volatile or semi-volatile organic compounds, or inorganic materials common to other types of manufacturing uses were not found in the subsurface soils on the site.

One (1) definite release of petroleum was identified in the area west of the plant building and adjacent to the former concrete tank containment area. The subsurface plume appears to head to the east and was not fully defined, but ground water impact is likely based on the sample results and physical observations during the soil borings.

Additionally, care should be taken in disturbing the surface materials (fine particulates or dust) covering much of the interior surfaces of the structure. Direct contact with the apparent baghouse dusts should be minimized and the materials should be wetted or collected using High Efficiency Particulate Air (HEPA) filters to prevent the material becoming respirable. This material, based on the results from Sample MEC-1, should also be characterized prior to any disposal using the TCLP test method for lead and cadmium.

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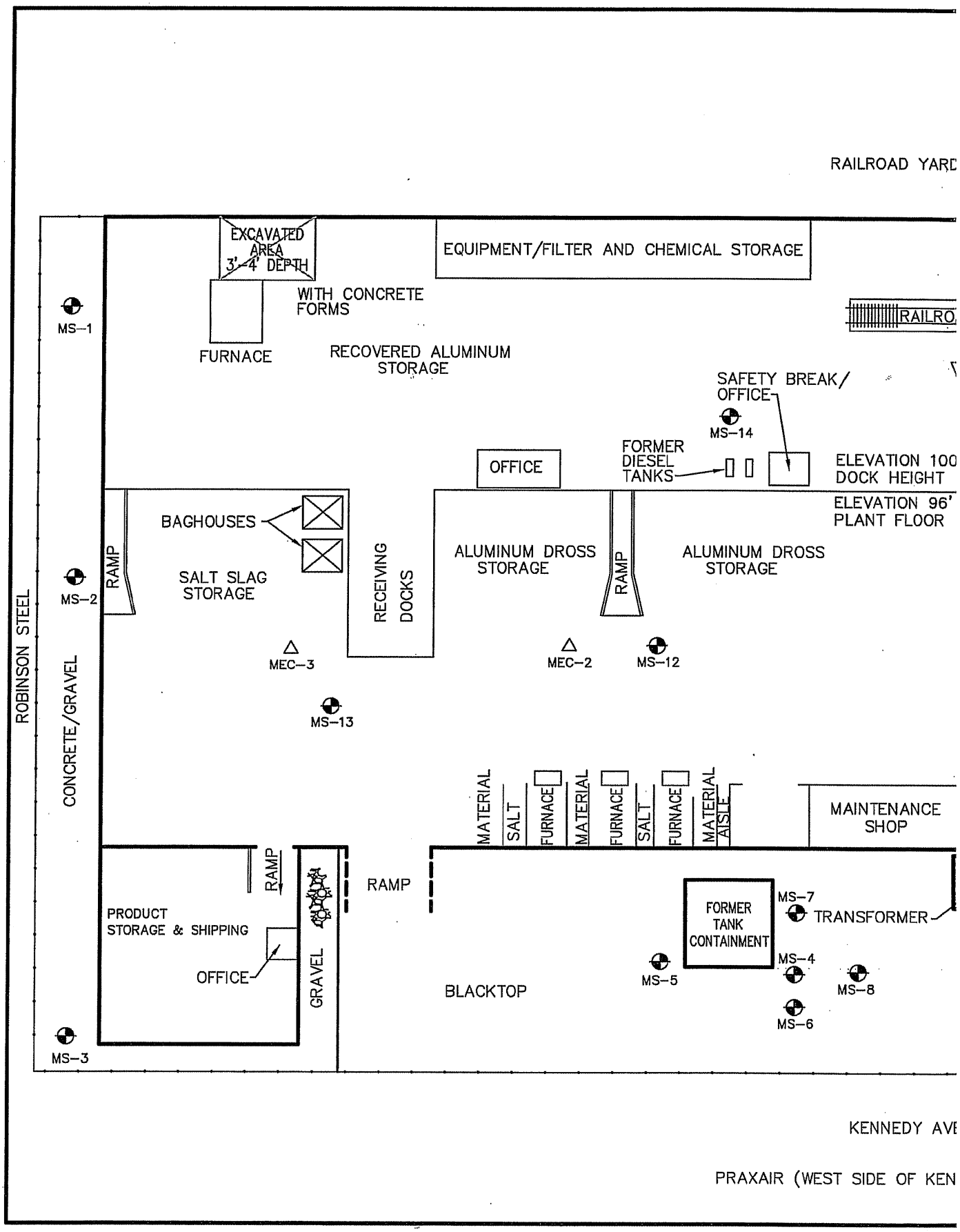
FIGURES

FIGURE 1:

SITE LOCATION MAP

FIGURE 2:

SITE FEATURES AND SAMPLE LOCATION MAP


RAILROAD YARD
EXCAVATED AREA 3'-4' DEPTH
WITH CONCRETE FORMS
EQUIPMENT/FILTER AND CHEMICAL STORAGE
RAILRO
MS-1
FURNACE
RECOVERED ALUMINUM STORAGE
SAFETY BREAK/ OFFICE
MS-14
FORMER DIESEL TANKS
OFFICE
ELEVATION 100 DOCK HEIGHT
ELEVATION 96' PLANT FLOOR
BAGHOUSES
RAMP
SALT SLAG STORAGE
MS-2
RECEIVING DOCKS
ALUMINUM DROSS STORAGE
RAMP
ALUMINUM DROSS STORAGE
ROBINSON STEEL
CONCRETE/GRAVEL
MEC-3
MEC-2
MS-12
MS-13
MATERIAL
SALT
FURNACE
MATERIAL
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SALT
FURNACE
MATERIAL AISLE
MAINTENANCE SHOP
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FORMER TANK CONTAINMENT
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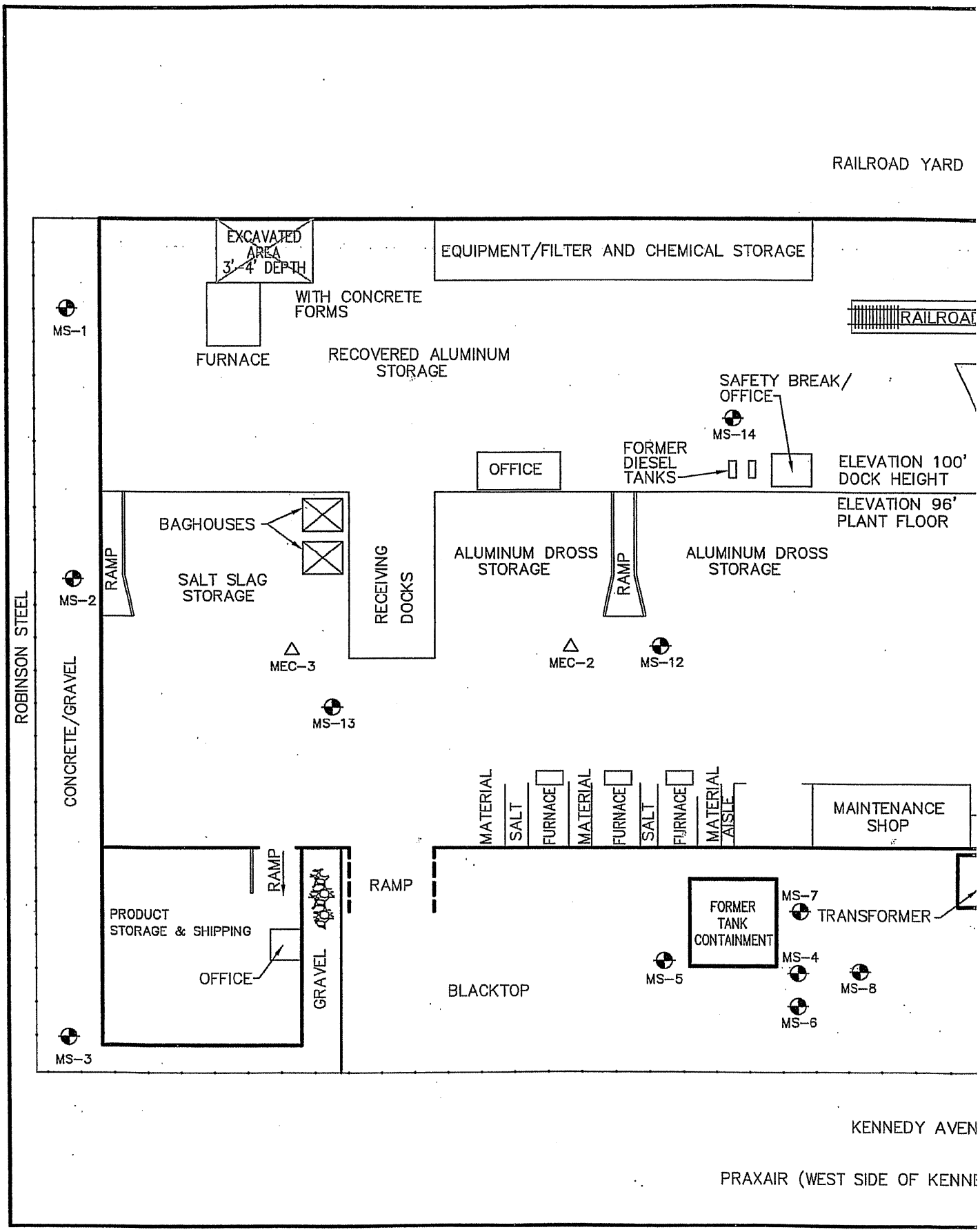
RAILROAD YARD
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OFFICE
ELEVATION 100' DOCK HEIGHT
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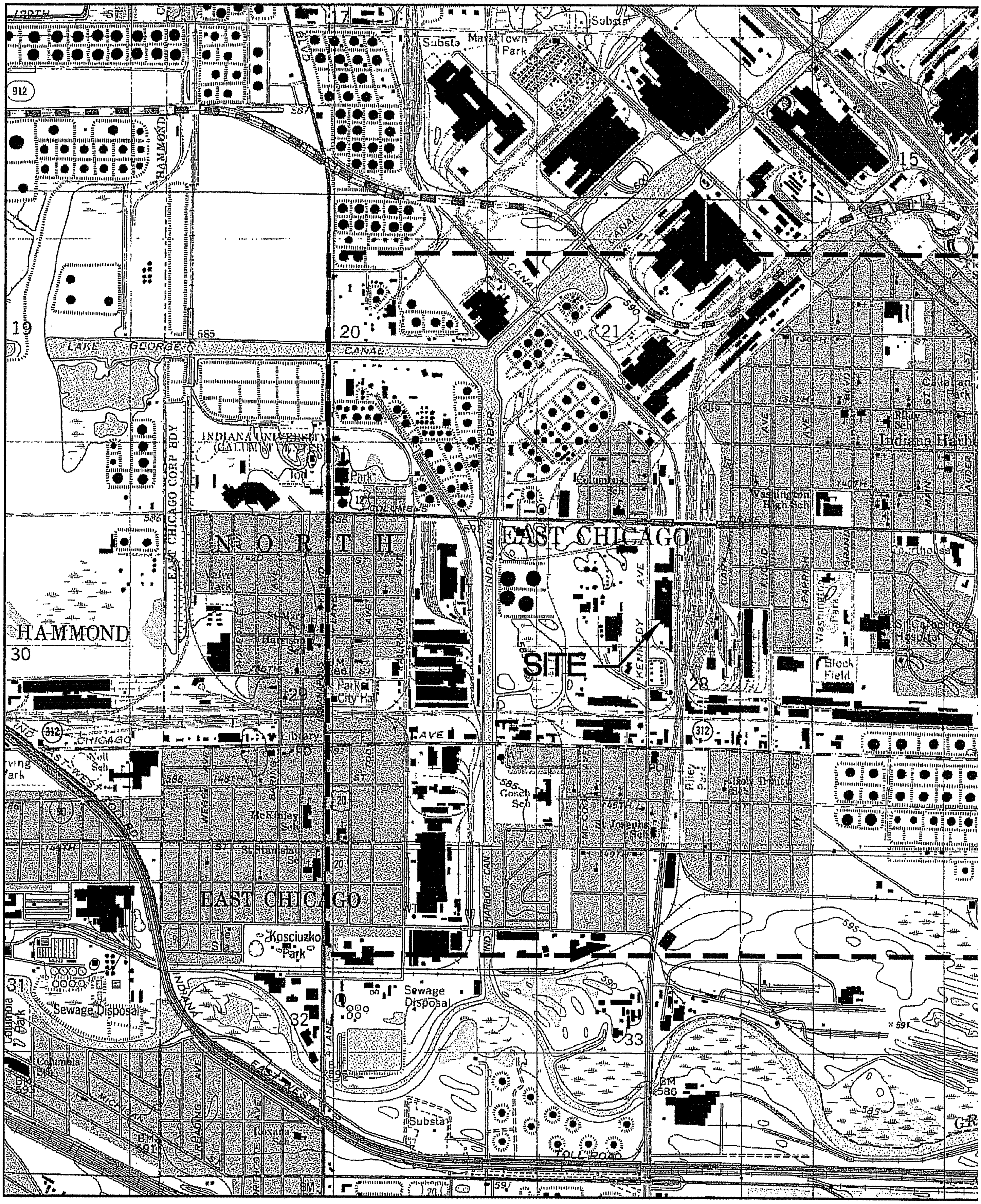
SITE
EAST CHICAGO
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LAKE GEORGE CANAL
INDIANA HARBOR CANAL
INDIANA UNIVERSITY
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Courthouse
Block Field
Sewage Disposal
Kosciuzko Park
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TABLES

TABLE 1:

SURFACE MATERIAL ANALYTICAL RESULTS

Table 1: Surface Material Results

Sample ID	Constituent	Sample Results	Units	RISC Default Residential (Soil Direct)	RISC Default Industrial (Soil Direct)
MEC-1	Antimony	86	mg/Kg-dry	140	620
	Benzo[a]anthracene	37	mg/Kg-dry	5	15
	Benzo[a]pyrene	39	mg/Kg-dry	0.5	1.5
	Benzo[b]fluoranthene	67	mg/Kg-dry	5	15
	Benzo[g,h,i]perylene	26	mg/Kg-dry	50	150
	Benzo[k]fluoranthene	25	mg/Kg-dry	50	150
	Beryllium	5	mg/Kg-dry	680	2900
	Cadmium	36	mg/Kg-dry	12	990
	Chromium*	3300	mg/Kg-dry	520000*	1000000*
	Chromium VI	N/A	mg/Kg-dry	430	650
	Chrysene	59	mg/Kg-dry	500	1500
	Copper	6600	mg/Kg-dry	13000	57000
	Dibenz[a,h]anthracene	7.5	mg/Kg-dry	0.5	1.5
	Fluoranthene	*ND*	mg/Kg-dry	6300	16000
	Indeno[1,2,3cd]pyrene	20	mg/Kg-dry	5	15
	Lead	1200	mg/Kg-dry	400	1300
	Mercury	0.110	mg/Kg-dry	100	470
	Nickel	720	mg/Kg-dry	6900	31000
	Phenanthrene	*ND*	mg/Kg-dry	470	1200
	Pyrene	110	mg/Kg-dry	4700	12000
	Selenium	*ND*	mg/Kg-dry	1700	7800
	Silver	9	mg/Kg-dry	1700	7800
	Zinc	4900	mg/Kg-dry	100000	470000
MEC-2	Antimony	3	mg/Kg-dry	140	620
	Benzo[a]anthracene	*ND*	mg/Kg-dry	5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	0.5	1.5
	Benzo[b]fluoranthene	0.063	mg/Kg-dry	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	50	150
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	50	150
	Beryllium	1	mg/Kg-dry	680	2900
	Cadmium	3	mg/Kg-dry	12	990
	Chromium*	300	mg/Kg-dry	520000	1000000
	Chromium VI	N/A	mg/Kg-dry	430	650
	Chrysene	*ND*	mg/Kg-dry	500	1500
	Copper	3100	mg/Kg-dry	13000	5700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	0.5	1.5
	Fluoranthene	0.100	mg/Kg-dry	6300	16000
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	5	15
	Lead	1000	mg/Kg-dry	400	1300
	Mercury	0.077	mg/Kg-dry	100	470
	Nickel	100	mg/Kg-dry	6900	31000
	Phenanthrene	0.120	mg/Kg-dry	470	1200
	Pyrene	0.130	mg/Kg-dry	4700	12000
	Selenium	*ND*	mg/Kg-dry	1700	7800
	Silver	3	mg/Kg-dry	1700	7800
	Zinc	2700	mg/Kg-dry	100000	470000
MEC-3	Antimony	3	mg/Kg-dry	140	620
	Benzo[a]anthracene	*ND*	mg/Kg-dry	5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	0.5	1.5
	Benzo[b]fluoranthene	*ND*	mg/Kg-dry	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	50	150
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	50	150
	Beryllium	5	mg/Kg-dry	680	2900
	Cadmium	0.300	mg/Kg-dry	12	990
	Chromium*	110	mg/Kg-dry	520000	1000000
	Chromium VI	N/A	mg/Kg-dry	430	650
	Chrysene	*ND*	mg/Kg-dry	500	1500
	Copper	1600	mg/Kg-dry	13000	5700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	0.5	1.5
	Fluoranthene	*ND*	mg/Kg-dry	6300	16000
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	5	15
	Lead	180	mg/Kg-dry	400	1300
	Mercury	*ND*	mg/Kg-dry	100	470
	Nickel	92	mg/Kg-dry	6900	31000
	Phenanthrene	*ND*	mg/Kg-dry	470	1200
	Pyrene	0.080	mg/Kg-dry	4700	12000
	Selenium	2	mg/Kg-dry	1700	7800
	Silver	3	mg/Kg-dry	1700	7800
	Zinc	870	mg/Kg-dry	100000	470000

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MEC) are shown in the Table. Each sample was analyzed for SVOCs and RISC inorganics, cyanides, and mercury. Those constituents which exceed a RISC residential or industrial default closure level are shown in **bold** type.

ND – Not detected at the method/matrix reporting limit
NA – Not analyzed
* Chromium III and Chromium VI sample results not speciated

TABLE 2:

SUBSURFACE SOIL (BORINGS) ANALYTICAL RESULTS

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-1-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	*ND*	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	*ND*	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	5.5	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	*ND*	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	*ND*	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	2.4	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium**	4.9	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	*ND*	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	6.9	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	*ND*	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	8.9	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	*ND*	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel***	23	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	0.14	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	0.09	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	58	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
NA – Not analyze
* Other limiting criteria for default closure level (soil saturation or attenuation capacity)
** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-3-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	*ND*	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	4.8	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	**12**	mg/Kg-dry	320	**3.9**	29	320	20	29	3.9	20
	Benzo[a]anthracene	*ND*	mg/Kg-dry	790	5	19	790	15	62	.5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	*ND*	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	2.4	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	9.1	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	*ND*	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	17	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	*ND*	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	13	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	*ND*	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	38	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	0.2	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	*ND*	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	27	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
NA – Not analyze
* Other limiting criteria for default closure level (soil saturation or attenuation capacity)
** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-4-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	1.8	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	1.3	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	2.3	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	*ND*	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	2.6	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	*ND*	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	*ND*	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	0.12	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	2.9	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	*ND*	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	*ND*	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	0.0075	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	*ND*	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	5.3	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	1.7	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	*ND*	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	3.2	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	9.5	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	3.3	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	0.048	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	14	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
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** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-5-1	Diesel Range Organics	*ND*	mg/Kg-dry								
	Extended Range Organics	*ND*	mg/Kg-dry								
	Motor Oil	*ND*	mg/Kg-dry								
MS-6-1	Diesel Range Organics	*ND*	mg/Kg-dry								
	Extended Range Organics	*ND*	mg/Kg-dry								
	Motor Oil	*ND*	mg/Kg-dry								
MS-7-1	Diesel Range Organics	3900	mg/Kg-dry								
	Extended Range Organics	4900	mg/Kg-dry								
	Motor Oil	*ND*	mg/Kg-dry								
MS-8-1	Diesel Range Organics	*ND*	mg/Kg-dry								
	Extended Range Organics	160	mg/Kg-dry								
	Motor Oil	160	mg/Kg-dry								

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
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Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-9-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	0.064	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	*ND*	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	*ND*	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	0.54	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	*ND*	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	*ND*	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	*ND*	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	*ND*	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	0.076	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	2.2	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	*ND*	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	8.7	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	*ND*	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	4.1	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	*ND*	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	1.8	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	*ND*	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	*ND*	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	11	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
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** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-10-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	7.3	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	**14**	mg/Kg-dry	460	140	**5.4**	460	620	37	**5.4**	37
	Arsenic	0.81	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	**11**	mg/Kg-dry	790	**5**	19	790	15	62	**5**	15
	Benzo[a]pyrene	**7.6**	mg/Kg-dry	79	**0.5**	8.2	79	**1.5**	16	**0.5**	**1.5**
	Benzo[b]fluoranthene	**16**	mg/Kg-dry	790	**5**	57	790	**15**	74	**5**	**15**
	Benzo[g,h,i]perylene	7.1	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	2.3	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	6.9	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	450	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	13	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	47	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	52	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	*ND*	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	**150**	mg/Kg-dry	970	400	**81**	970	1300	230	**81**	230
	Mercury	0.11	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	18	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	**43**	mg/Kg-dry	2500	470	**13**	2500	1200	170	**13**	170
	Pyrene	58	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	6.5	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	390	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

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** Levels for chromium III, not speciated
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Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-11-1	2-Methylnaphthalene	ND	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	ND	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	ND	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	ND	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	ND	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	ND	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	2.4	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	ND	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	ND	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	0.088	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	ND	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	ND	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	1.2	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	ND	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	7.5	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	0.061	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	24	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	ND	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	ND	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	0.12	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	ND	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	ND	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	18	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	ND	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	ND	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	13	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	ND	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	0.062	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	ND	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	ND	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	ND	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	81	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

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Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-12-1	2-Methylnaphthalene	ND	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	ND	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	ND	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	ND	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	ND	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	ND	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	1	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	ND	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	ND	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	ND	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	ND	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	ND	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	0.1	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	ND	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	2.8	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	ND	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	2.1	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	ND	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	ND	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	ND	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	ND	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	ND	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	1.7	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	ND	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	ND	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	2.6	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	ND	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	ND	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	ND	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	ND	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	ND	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	11	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

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Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-13-1	2-Methylnaphthalene	ND	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	ND	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	ND	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	ND	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	ND	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	ND	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	1.9	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	ND	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	ND	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	ND	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	ND	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	ND	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	0.2	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	ND	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	2.5	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	ND	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	1	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	ND	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	ND	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	ND	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	ND	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	ND	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	4.7	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	ND	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	ND	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	3.4	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	ND	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	ND	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	ND	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	ND	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	ND	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	14	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

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ND – Note detected at method/matrix reporting limit
NA – Not analyze
* Other limiting criteria for default closure level (soil saturation or attenuation capacity)
** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-14-1	2-Methylnaphthalene	0.67	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	*ND*	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	2.2	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	**12**	mg/Kg-dry	320	**3.9**	29	320	20	29	**3.9**	20
	Benzo[a]anthracene	0.12	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	0.11	mg/Kg-dry	79	0.5	8.2	79	1.5	16	0.5	1.5
	Benzo[b]fluoranthene	0.15	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	0.07	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	*ND*	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	2.5	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	13	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	0.13	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	21	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	*ND*	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	0.3	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	0.065	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	96	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	0.11	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	0.34	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	23	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	0.31	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	0.23	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	*ND*	mg/Kg-dry	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	250	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*
MS-14-2	Diesel Range Organics	34	mg/Kg								
	Extended Range Organics	34	mg/Kg								
	Motor Oil	*ND*	mg/Kg								

Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
NA – Not analyze
* Other limiting criteria for default closure level (soil saturation or attenuation capacity)
** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

Table 2: Subsurface Soil (Borings) Results

Sample ID	Constituent	Sample Results	Units	RISC Default Closure Level Residential			RISC Default Closure Level Industrial			Default Closure Level	
				Construction	Soil Direct	Migration	Construction	Soil Direct	Migration	Residential	Industrial
MS-15-1	2-Methylnaphthalene	*ND*	mg/Kg-dry	17000	3200	16	17000	8000	210	16	210
	Acenaphthene	*ND*	mg/Kg-dry	50000	9500	130	50000	24000	1200	130	1200
	Acenaphthylene	*ND*	mg/Kg-dry	5900	1100	18	5900	2800	180	18	180
	Acetone	*ND*	mg/Kg-dry	34000	4800	3.8	34000	6300	370	3.8	370
	Anthracene	0.45	mg/Kg-dry	250000	47000	51	250000	120000	51	51	51
	Antimony	*ND*	mg/Kg-dry	460	140	5.4	460	620	37	5.4	37
	Arsenic	1.1	mg/Kg-dry	320	3.9	29	320	20	29	3.9	20
	Benzo[a]anthracene	1.5	mg/Kg-dry	790	5	19	790	15	62	5	15
	Benzo[a]pyrene	**1.5**	mg/Kg-dry	79	**0.5**	8.2	79	**1.5**	16	**0.5**	**1.5**
	Benzo[b]fluoranthene	1.9	mg/Kg-dry	790	5	57	790	15	74	5	15
	Benzo[g,h,i]perylene	0.94	mg/Kg-dry	7900	50	16	7900	150	16	16	16
	Benzo[k]fluoranthene	0.64	mg/Kg-dry	7900	50	39	7900	150	39	39	39
	Beryllium	1	mg/Kg-dry	2300	680	63	2300	2900	3200	63	2300
	Cadmium	*ND*	mg/Kg-dry	590	12	7.5	590	990	77	7.5	77
	Chromium	28	mg/Kg-dry	1000000	520000	1000000	1000000	1000000	1000000	10000*	10000*
	Chromium VI	N/A	mg/Kg-dry	3400	430	38	3400	650	120	38	120
	Chrysene	1.6	mg/Kg-dry	79000	500	25	79000	1500	25	25	25
	Copper	65	mg/Kg-dry	42000	13000	920	42000	57000	2700	920	2700
	Dibenz[a,h]anthracene	0.32	mg/Kg-dry	79	0.5	18	79	1.5	60	0.5	1.5
	Ethylbenzene	*ND*	mg/Kg-dry	29000	4600	13	29000	6800	200	13	160*
	Fluoranthene	3.9	mg/Kg-dry	33000	6300	880	33000	16000	880	880	880
	Fluorene	*ND*	mg/Kg-dry	33000	6300	170	33000	16000	1100	170	1100
	Indeno[1,2,3cd]pyrene	0.83	mg/Kg-dry	790	5	3.1	790	15	3.1	3.1	3.1
	Lead	18	mg/Kg-dry	970	400	81	970	1300	230	81	230
	Mercury	*ND*	mg/Kg-dry	340	100	2.1	340	470	32	2.1	32
	Naphthalene	*ND*	mg/Kg-dry	17000	3200	0.7	17000	8000	170	0.7	170
	Nickel	4	mg/Kg-dry	23000	6900	950	23000	31000	2700	950	2700
	Phenanthrene	1.6	mg/Kg-dry	2500	470	13	2500	1200	170	13	170
	Pyrene	3	mg/Kg-dry	25000	4700	570	25000	12000	570	570	570
	Silver	*ND*	mg/Kg-dry	5700	1700	31	5700	7800	87	31	87
	Total PCB's	0.068	mg/Kg	16	1.8	6.2	16	5.3	18	1.8	5.3
	Total Xylenes	*ND*	mg/Kg-dry	4800	690	210	4800	890	430	170*	170*
	Zinc	68	mg/Kg-dry	340000	100000	14000	340000	470000	38000	10000*	10000*

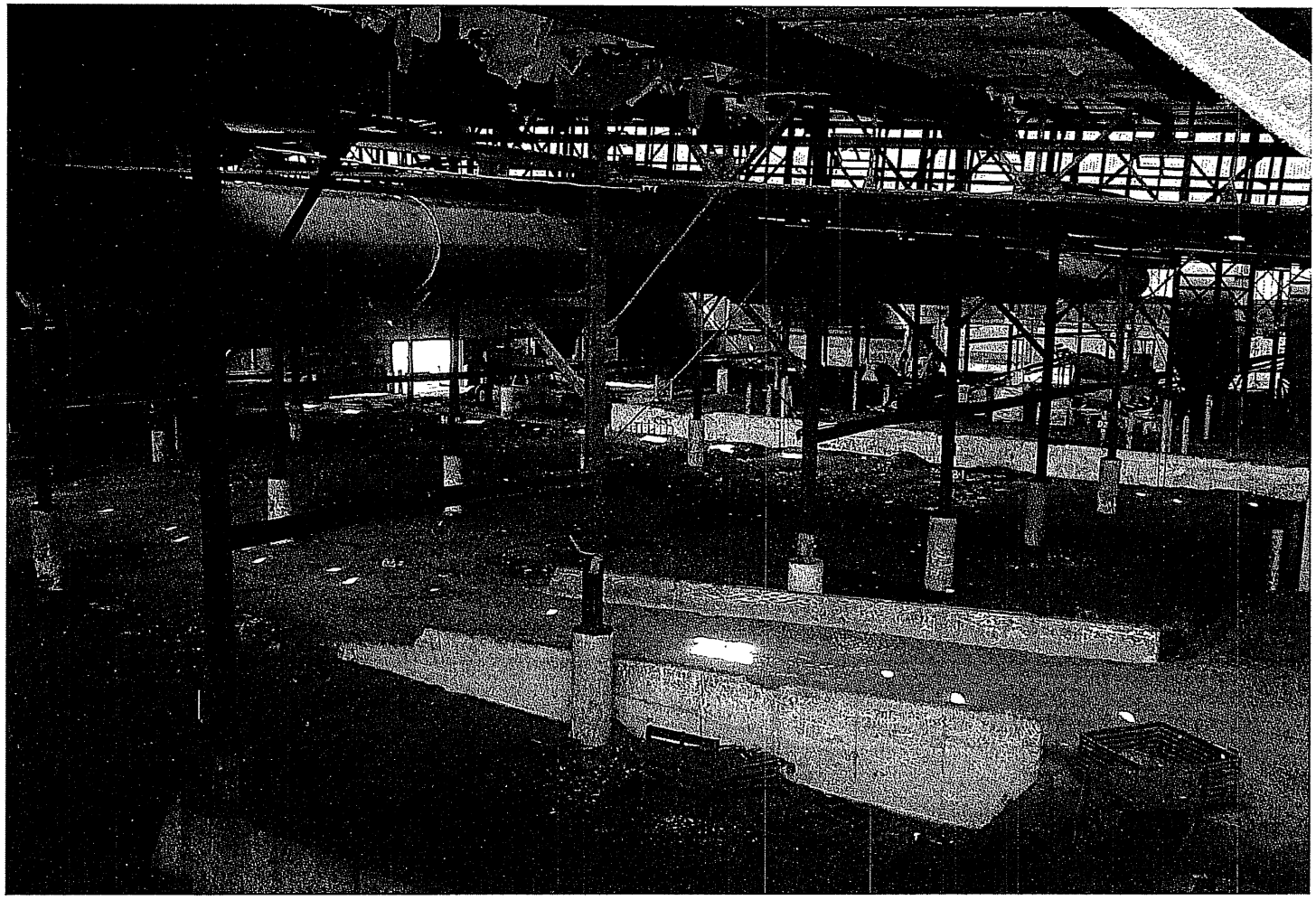
Notes: Only those constituents for which a concentration at or above the reporting limit for the sample series (MS) was found are shown in the Table. Each sample was analyzed for VOCs, SVOCs, RISC inorganics, cyanide, mercury, PCBs and pH. Those constituent concentrations that exceed the RISC residential or industrial default closure levels are shown in **bold** type.

ND – Note detected at method/matrix reporting limit
NA – Not analyze
* Other limiting criteria for default closure level (soil saturation or attenuation capacity)
** Levels for chromium III, not speciated
*** Levels for nickel, soluble salts

APPENDICES

APPENDIX A:

SITE PHOTOGRAPHS



Photograph 1: View to northwest of former Marport Smelting Co. plant interior. Surface material samples (MEC-1, MEC-2, and MEC-3) were taken of scattered baghouse dust from upper dock area (right foreground), the aluminum dross storage area (left area of photo), and the former salt slag storage area in the right background, respectively.

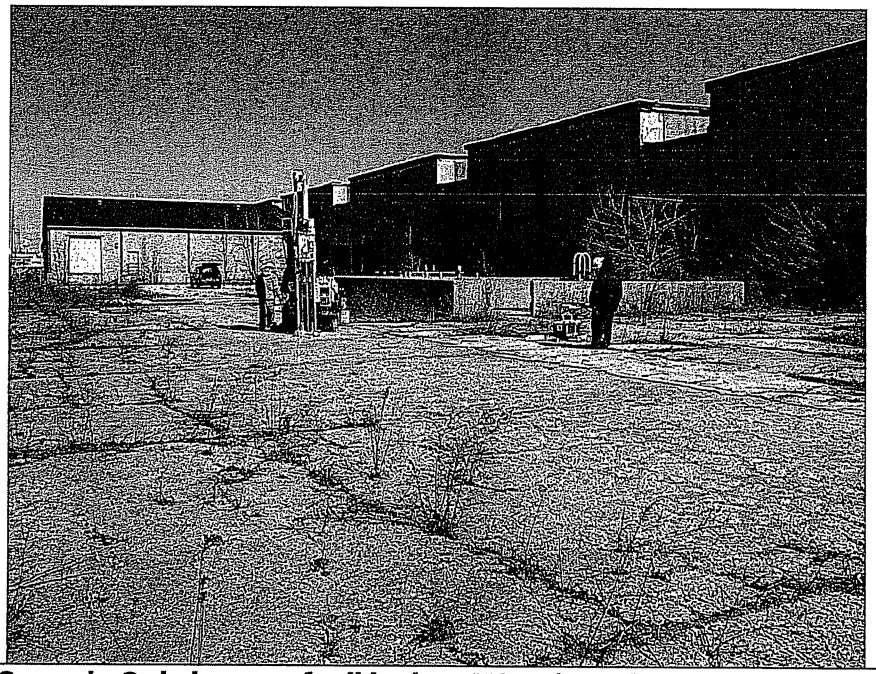


Photo 2: Geoprobe® rig in area of soil borings MS-4 through MS-8 on west side of plant

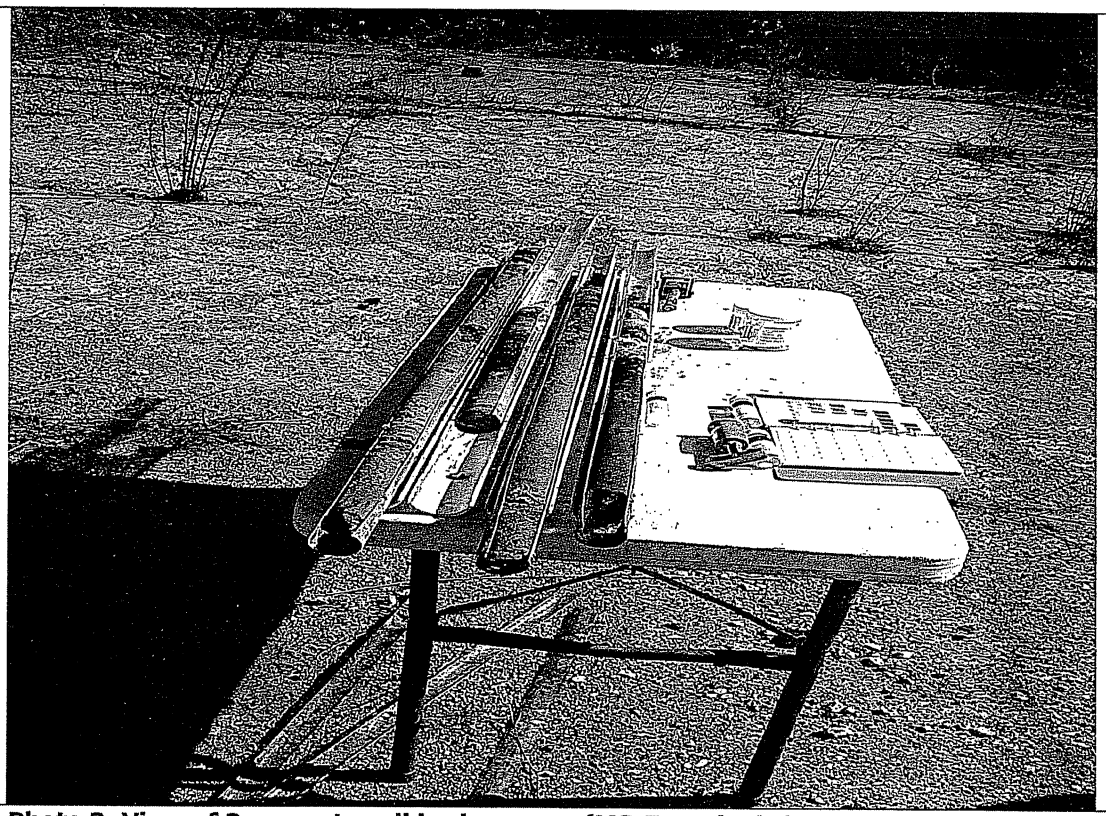
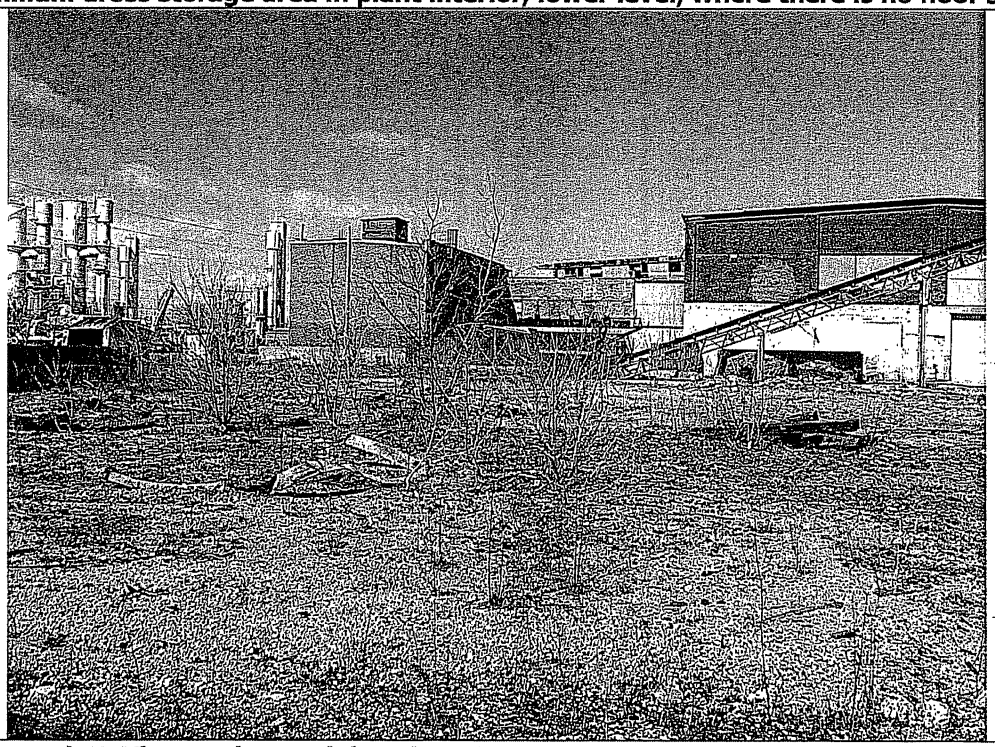
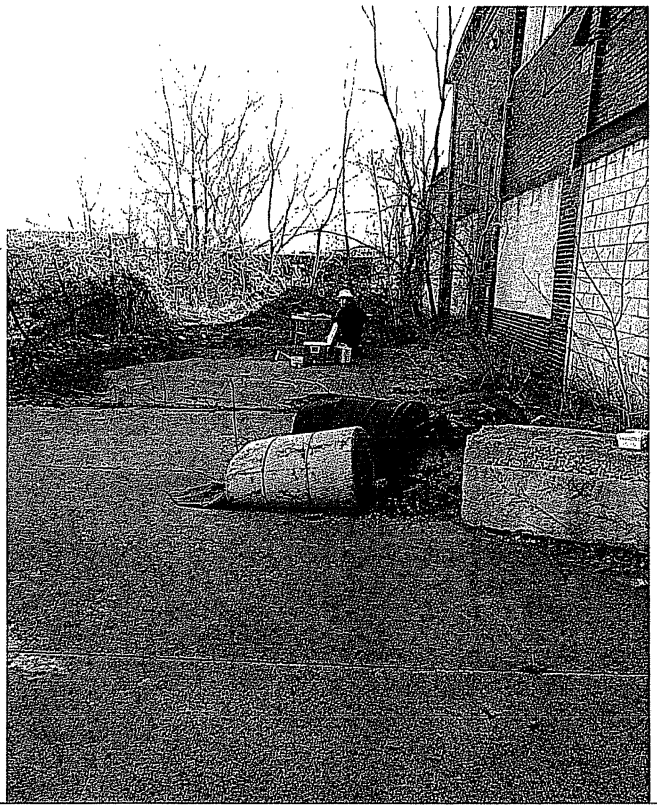


Photo 3: View of 2 separate soil boring cores (MS-5 on the left and MS-4 on the right) with the uppermost soil interval on the right in each case. Note fill material in the upper interval and fine sand becoming saturated in the lower (left) core of each sample.

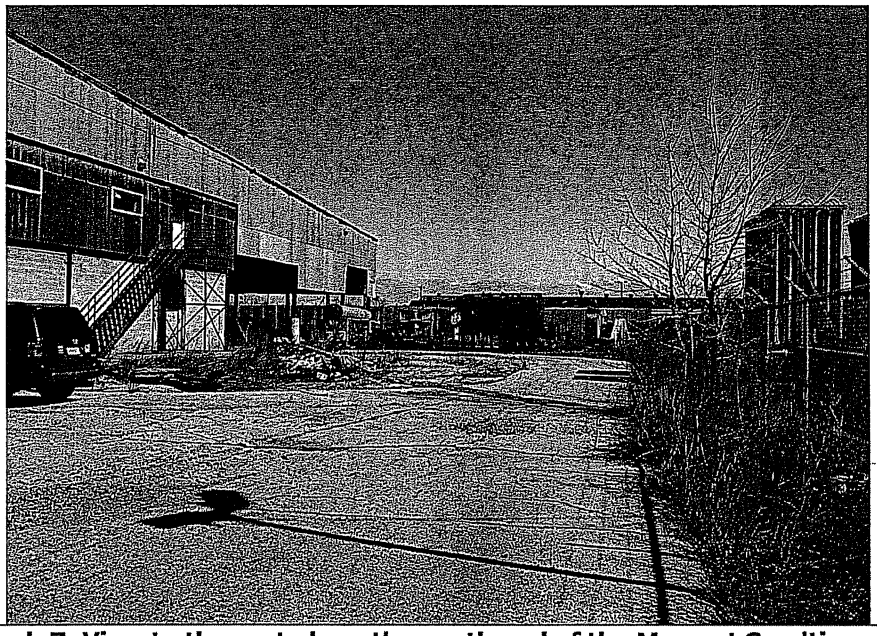
Photograph 4: Looking east at subsurface sample (MS-12) being taken from the former aluminum dross storage area in plant interior, lower level, where there is no floor slab.



Photograph 5: View to the north/northwest across southern portion of property in which two (2) soil borings were conducted, one at the far southwest corner (MS-9) of this area of fill where historically structures and kilns had been located and one (MS-15) between the conveyor and 3-story brick office building in the background.



Photograph 6: Looking east along north end of plant at location of soil boring MS-1. Note deteriorated drums and contents on concrete slab.



Photograph 7: View to the east along the south end of the Marport Smelting property. Soil boring MS-10 was from the southeast corner of the property near the equipment storage (graveyard) area in the background.

APPENDIX B:

GEOPROBE® BORING LOGS

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-1
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 0910	9.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-2.5'			2.5YR3/3	SCL and miscellaneous fill materials	NR – No Recovery
2.5'-3.0'			2.5YR6/1	SCL and miscellaneous fill materials	NA – Not applicable
3.0'-3.5'			2.5YR8/2	SA fill material appears as crushed refractory brick	SIL – Silt Loam
3.5'-6.0'			2.5YR6/1	SLSA and miscellaneous fill materials	L – Loam
6.0'-8.0'			unclass	Miscellaneous fill materials of various coloration	CL – Clay Loam
8.0'-9.0'	MS-1-1	grab	2.5YR3/1	Miscellaneous fill materials, some moisture noted	SCL – Silty Clay
9.0'-10			7.5YR6/3	Fine sand saturated with water	SA- Sand
10'				Terminate boring	SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-2
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005	8.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-7.0'	MS-2-1	Grab	5YR6/1	Sandy mixed fill material, collect sample MS-2-1 from 7.0' interval	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
7.0'-8.0'			5YR2.5/1	Mixed fill materials, some moisture noted	
8.0'-10'			7.5YR6/8	Fine SA, saturated with water	
10'				Terminate boring	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-3
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1010	6.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0'-2.0'			2.5YR4/1	SCL and fill	NR – No Recovery
2.0'-4.0'	MS-3-1	grab	2.5YR2.5/1	Very fine slag fill material, collect sample MS-3-1 from 3.0' interval	NA – Not applicable
4.0'-4.5'			2.5YR3/6	Fine SA	SIL – Silt Loam
4.5'-10'			10YR6/6	Fine SA, saturated with water at 6.0' interval	L – Loam
10.0'				Terminate boring	CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-4
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1050	6.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0'-2.5'				Concrete slab 6" thick over soil, no recovery in spoon to 2.5' interval	NR – No Recovery
2.5'-6.5'	MS-4-1	grab	10YR2/1	Fine SA with very noticeable petroleum odor, collect sample MS-4-1 from 5.0' interval	NA – Not applicable
6.5'-10'			10YR4/2	Fine SA saturated with water at 6.5'	SIL – Silt Loam
10.0'				Terminate boring	L – Loam
					CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-5
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1105	6.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0'-2,5'				Concrete slab 6" thick over soil, no recovery in spoon to 2.5' interval,	NR – No Recovery
2.5'-4.0'	MS-5-1	grab	10YR2/1	Mixed slag and fill material, collect sample MS-5-1 from 2.5' interval	NA – Not applicable
4.5'-10'			7.5YR5/4	Fine SA, saturated with water at 6.0'	SIL – Silt Loam
10.0'				Terminate boring	L – Loam
					CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-6
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1120	7.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-2.5'				Concrete slab 6" thick over soil, no recovery in spoon to 2.5' interval	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
2.5'-4.0'			7.5YR2.5/1	Mixed slag and fill material	
4.0'-6.0'	MS-6-1	grab	7.5YR5/1	Very fine SA, collect sample MS-6-1 from 5.0' interval	
6.0'-10'			7.5YR5/4	Very fine SA, saturated with water at 7.5'	
				Terminate boring	

SOIL BORING LOGS

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-7
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	
TOC ELEV.	

PROJECT: Marport Smelting
PROJECT NO: 2001-403mse
CLIENT: Pollution Control Industries
CONTRACTOR: Duke's Earth Services
RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1135	6.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-2.5'				Concrete slab 6" thick over soil, no recovery in spoon to 2.5' interval,	NR – No Recovery
2.5-7.0'	MS-7-1	grab	7.5YR2.5/1	Fine SA with some slag material, collect sample MS-7-1 from 4.5' interval, water saturation at 6.5'	NA – Not applicable
7.0'-10'			5YR5/1	Fine SA	SIL – Silt Loam
10.0'				Terminate boring	L – Loam
				(Hydrocarbon odor noted throughout depth profile, stronger odor noted in shallower depth and decreasing with depth)	CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-8
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1215	7.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.5'				Concrete slab 6" thick over soil, no recovery in spoon to 3.5' interval,	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
3.5'-6.5'			7.5YR4/6	Fine SA	
6.5'-10'	MS-8-1	grab	10YR5/1	Fine SA, water saturated at 7.5', collect sample MS-8-1 at 7.0' interval, slight hydrocarbon odor noted	
10.0'				Terminate boring	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-9
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting
PROJECT NO: 2001-403mse
CLIENT: Pollution Control Industries
CONTRACTOR: Duke's Earth Services
RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1240	12'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.5'				Concrete slab 6" thick encountered 8" below grade, no recovery in spoon to 3.5' interval,	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
3.5'-5.0'			2.5/5PB and 5/5/1	SA and slag	
8.0'-8.5'			2.5Y8/4	No recovery in spoon from 5.0' to 8.0' interval, Large gravels	
8.5'-10'	MS-9-1		2.5Y4/2	Very fine SA, hydrocarbon odor noted in this spoon, collect sample MS-9-1 from 9.5' interval	
10'-15'				Water saturated at 12.0' interval	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-10
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1310	8.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-4.5'	MS-10-1	grab	7.5YR2.5/1 and 2.5/2	Mixed sand and slag, collect sample MS-10-1 at 3.5' interval	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
4.5'-6.0'			10R7/4 and 7/6	Poorly sorted SA	
6.0'-8.0'			As above with 10R6/2	Poorly sorted SA, water saturated at 8.0'	
8'-10.0'			10YR4/3	Fine SA, saturated	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-11
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1330	8.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.5'				Concrete slab 6" thick over soil, no recovery in spoon to 3.5' interval	NR – No Recovery NA – Not applicable SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
3.5'-4.0'			5YR8/2	Fill and SA	
4.0'-4.5'			5YR7/6	Fill and SA	
4.5'-5.0'			5YR3/4 and 2.5/1	Fill and SA	
5.0'-10'	MS-11-1	grab	7.5YR5/4	Very fine SA, saturated with water at 8.0', collect sample MS-11-1 from 5.5' interval	
10.0'				Terminate boring	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-12
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1405	5.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.0'			7.5YR2.5/1	Fluffy wet cake material	NR – No Recovery
3.0'-10'	MS-12-1	grab	7.5YR5/3	Fine SA, water saturated at 5.5', collect sample MS12-1 at 4.5' interval	NA – Not applicable
10.0'				Terminate boring	SIL – Silt Loam
					L – Loam
					CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-13
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	96
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1425	6.0'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.0'				Concrete slab 1.0' thick encountered 6" below grade, no recovery in spoon to 3.0' interval,	NR – No Recovery
3.0'-4.0'			10R7/4 and 7.5YR2.5/1	Mixed slag and concrete fragments	NA – Not applicable
4.0'-7.0'	MS-13-1	grab	7.5YR5/3	Fine SA, water saturated at 6.0', sample MS-13-1 collected at 4.5' interval	SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
7.0'-10'			7.5YR5/1	Fine SA	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-14
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1455	9.5'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.0'				Concrete slab 6" thick over soil, no recovery in spoon to 3.0' interval	NR – No Recovery
3.0-7.0	MS-14-1 MS-14-2	grab grab	7.5YR2.5/1	Mixed slag, collect sample MS-14-1 from 4.5' interval and MS-14-2 from 6.5' interval	NA – Not applicable
7.0'-10'			7.5YR5/4	Fine SA, water saturated at 9.5'	SIL – Silt Loam L – Loam CL – Clay Loam SCL – Silty Clay SA- Sand SLSA- Silty sand
10.0'				Terminate boring	

SOIL BORING LOGS

SHEET 1 OF 1

ANDREWS ENVIRONMENTAL ENGINEERING, INC.
7478 SHADELAND STATION WAY
INDIANAPOLIS, IN 46256

BORING ID	MS-15
DATE STARTED	March 8, 2005
DATE FINISHED	March 8, 2005
GEOLOGIST	K. Antell
N-S COORD.	
E-W COORD.	
GS ELEV.	100
TOC ELEV.	

PROJECT: Marport Smelting

PROJECT NO: 2001-403mse

CLIENT: Pollution Control Industries

CONTRACTOR: Duke's Earth Services

RIG: Geoprobe 6610

DATE/TIME	DTW (FT.)		SAMPLE	TUBE
March 8, 2005 1530	12'	TYPE		
		DIAM.		
		WEIGHT		
		FALL		

Depth (ft.)	Sample No.	Sample & Type	Munsell	Field Description (Color, moisture, texture, density, plasticity, mineralogy, cementation, etc.)	Remarks
0-3.5'				No recovery in spoon	NR – No Recovery
3.5'-5.0'	MS-15-1	grab	7.5YR2.5/1 and 4/6	Mixed sand and slag, collect sample MS-15-1 from 3.5' interval	NA – Not applicable
5.0-15'			7.5YR5/4	Fine SA saturated with water at 12'	SIL – Silt Loam
15.0'				Terminate boring	L – Loam
					CL – Clay Loam
					SCL – Silty Clay
					SA- Sand
					SLSA- Silty sand

APPENDIX C:

ANALYTICAL LABORATORY DATA

Microbac

Samples Submitted to:

[ ] 250 West 84th Drive
Merrillville, IN 46410
Tel: 219-769-8378
Fax: 219-769-1664

[ ] 5713 West 85th Street
Indianapolis, IN 46278
Tel: 317-872-1375
Fax: 317-872-1379

Chain of Custody Record

Number 58450

Instructions on back

Client Name: Pitt-Ohio Central Industrial, Inc	Project: Mapcraft ESA	Turnaround Time: [X] Routine (7 working days); [ ] RUSH* (notify lab) _____ (needed by)	Report Type: [ ] Results Only [ ] Level II [X] Level III [ ] Level III CLP-like [ ] Level IV [ ] Level IV CLP-like [ ] EDD
Address: 4345 Kennedy Avenue	Location: East Chicago		
City, State, Zip: East Chicago IN 46312	PO #		
Contact: Tom Kovacs	Compliance Monitoring? [ ] Yes(1) [X] No		
Telephone #: 219. 392. 2951	(1)Agency/Program: IDEM RISC		
Sampled by (PRINT): Tom Russell	Sampler Signature: Tom Russell	Sampler Phone #: 317. 595. 6492	
Send Report via: [X] Mail [ ] Telephone [ ] Fax (fax #) _____		[X] e-mail (address): trussell@mbenv-indy.com	

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types **	VOC	SVOC	RISC Signature	CN	Mercury	PCB	PAH		For Lab Use Only
MW-1	S	X			3/8/05	0945	2			X	X	X	X		X		
MW-2	S		X		"	1005	2			X	X	X	X		X		
MW-3	S		X		"	1010	2			X	X	X	X		X		

Possible Hazard Identification: [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive

Sample Disposition: [ ] Dispose as appropriate [ ] Return [ ] Archive

Comments: Analytical progress Run Surrogate H. will call about matrix interference. S.

Relinquished By (signature): T. Russell	Date/Time: 3/9/05 1204	Received By (signature):	Date/Time:
Relinquished By (signature):	Date/Time:	Received By (signature):	Date/Time:
Relinquished By (signature):	Date/Time:	Received for Lab By (signature):	Date/Time:

Sample temperature upon receipt in degrees C =

rev. 11/04/04

Mcobac

Samples Submitted to:
[ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664
[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Reco

Number 58451

Instructions on back

Client Name Pollution Control Industries Inc	Project Marpoint	Turnaround Time	Report Type
Address 4747 Grand Avenue	Location East Chicago	[X] Routine (7 working days)	[ ] Results Only [ ] Level II
City, State, Zip E Chicago IN 46312	PO #	[ ] RUSH* (notify lab)	[X] Level III [ ] Level III CLP-like
Contact Tim LaBrec	Compliance Monitoring? [ ] Yes(1) [ ] No	_____ (needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone # 219. 397. 5951	(1)Agency/Program		[ ] EDD

Sampled by (PRINT) Keith Austell Sampler Signature K Austell Sampler Phone # 317 753 4136

Send Report via [X] Mail [ ] Telephone [ ] Fax (fax #) [X] e-mail (address) kaustell@andrews-env.com

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	VOCs	SVOCs	RCRA Metals	CN	Mercury	PCBs	pH	TOH	For Lab Use Only
[illegible]	S	X			3/8/05	0930	5		X	X	X	X	X	X	X		
[illegible]						0950	5										
[illegible]						1025	5		X	X	X	X	X	X	X		
[illegible]						1100	16		X	X	X	X	X	X	X	X	
[illegible]						1200	1									X	
[illegible]						1205	1									X	
[illegible]						1210	1									X	
[illegible]						1220	1									X	
[illegible]						1300	5		X	X	X	X	X	X	X		
[illegible]						1320	5		X	X	X	X	X	X	X		
[illegible]	S	X			3/8/05	1350	5		X	X	X	X	X	X	X		

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Comments: Add inorganic/metal analyses. Run after.

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
K Austell	3/8/05 1205		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time

Sample temperature upon receipt in degrees C =

rev. 11/04/04

Microbac

Samples Submitted to:

[ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664

[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Reco

Number 58449

Instructions on back

Client Name: [illegible] Industries	Project	Turnaround Time	Report Type
Address: 6240 Kennedy Ave	Location	[ ] Routine (7 working days)	[ ] Results Only [ ] Level II
City, State, Zip: East Chicago, IN 46312	PO #	[ ] RUSH* (notify lab)	[ ] Level III [ ] Level III CLP-like
Contact: Paula Grimes	Compliance Monitoring? [ ] Yes(1) [ ] No	_____ (needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone #: 219 391 3971	(1)Agency/Program		[ ] EDD

Sampled by (PRINT): Kevin Hunsell Sampler Signature: [signature] Sampler Phone #: 317 752 4636

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) _____ [ ] e-mail (address) [illegible]

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Preservative Types **	Requested Analyses →									For Lab Use Only
									VOCs	SVOCs	RCRA Tmetals	CN	Mercury	PCBs	OH	TPH		
[illegible]	S	X			1410	3/9/05			X	X	X	X	X	X	X			
[illegible]					1445				X	X	X	X	X	X	X			
[illegible]					1500				X	X	X	X	X	X	X			
[illegible]					1510											X		
[illegible]					1535				X	X	X	X	X	X	X			
	S	X				3/9/05												

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Comments: [illegible]

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	3/9/05 1305		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time
		[signature]	[illegible]

Sample temperature upon receipt in degrees C = [illegible]

rev. 11/04/04

COPY

Report on the:

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Of the:

THUNDERBIRD REAL ESTATE
(FORMER MARPORT SMELTING FACILITY)

Located at:

4323 KENNEDY AVENUE
EAST CHICAGO, LAKE COUNTY, INDIANA

Prepared for:

Tradebe Pollution Control Industries, Inc.
4343 Kennedy Avenue
East Chicago, Lake County, Indiana 46312

April 23, 2010

Prepared by:

ANDREWS
ENGINEERING, INC.
7478 Shadeland Station Way
Indianapolis, IN 46256
Tel: (317) 595-6492; Fax: (317) 598-9929

Report on the
Phase II Environmental Site Assessment
Thunderbird Real Estate (Former Marport Smelting Facility)
4323 Kennedy Avenue
East Chicago, Lake County, Indiana 46312
April 23, 2010

1.0 Introduction

On April 7-8, 2010, Andrews Engineering, Inc. (Andrews) personnel conducted a site investigation sampling event at the Former Marport Smelting Facility, in East Chicago, Indiana. The investigation sampling took place on the west side of the property, adjacent to a former tank containment area, as shown in Figure 1. This area exhibited signs of contamination during a previous Phase II ESA conducted by Andrews on March 8-9, 2005. Specifically, boring location MS-4, south and west of the former tank containment area, had staining and a prominent petroleum odor emanating from soils 2.5-6.5 feet below ground surface. For the April 2010 investigation, Andrews contracted Direct Push Analytical in Elburn, Illinois, for drilling services, and Pace Analytical in Indianapolis, Indiana, for sample analysis. The activities performed and analyses conducted for this sampling event are described in the following section.

2.0 Field Investigation Procedures

Borings were advanced in the area surrounding sample point MS-4 with a Geoprobe 6620DT. Boring locations were determined using standard RISC "step out" methodology. The initial boring location, AEI-1, was located within five feet of the previous MS-4 location in order to establish a central point from which to delineate contamination. AEI-1 was advanced to a depth of 12 feet, and a temporary monitoring well was installed to facilitate extraction of a ground water sample. From this point, borings were advanced in regular intervals from the central AEI-1 boring location in each cardinal direction. Boring locations are indicated on Figure 1.

All tooling used on the drilling platform was decontaminated between each boring location using a scrub brush and Alconox solution followed by a thorough rinse with distilled water. All decontamination water was drummed on site for later disposal. The distance between each sequential boring location varied from 10 to 20 feet depending upon borehole refusal, excessive surface water due to recent heavy rains, or indications of excessive contamination that warranted a greater distance between locations. Borehole depths varied between 8 to 16 feet below ground surface. Based upon the previous investigation, most borehole depths were limited to 8 feet, but for boreholes converted to temporary ground water monitoring wells, the depth was extended to at a minimum 12 feet to ensure enough sample water was available for laboratory analysis. Boreholes that exhibited no obvious signs of contamination were also extended to 12 or 16 feet to demonstrate that the contaminant plume had been delineated.

Soil samples were obtained with a 1.5-inch, 4-foot continuous core sampler. Extracted soil was screened at 2 foot intervals using a Multi Rae Photo Ionization Detector (PID) for volatile contamination. The PID was field calibrated each day prior to use. Lithologic descriptions, PID readings, and other field observations are included in the field boring logs provided in Appendix 1. Each borehole was then backfilled with hand-fed medium grade bentonite chips.

The subsurface stratigraphy in the area of the investigation, as anticipated based on previous soil borings in this vicinity, was relatively consistent. Beneath approximately 6-inches to one foot of concrete or asphalt paving was approximately one foot of dry black coke ash fill, underlain by a fine, well-graded, loose sand with occasional gravel to the termination of the boring. Saturated soils were observed from 2 feet below ground surface (bgs) to no more than 4 feet bgs. The completed borings varied in depth with the deepest being to 16 feet bgs. Evidence of fill materials including refractory material, slag, and brick fragments was occasionally observed in the upper four (4) feet of soil.

After reaching a depth where visual and PID observations indicated no apparent contamination, a temporary ground water monitoring well was installed to a depth of 12 or 16 feet. Each temporary well was constructed with 1-inch SCH 40 PVC inserted into the borehole by using a disposable tip placed on the tip of the Geoprobe rods. Prior to obtaining ground water samples, the monitoring wells remained in place until the end of each day's activities in order to reduce turbidity and to allow ground water to recover to static levels. Tables 3 and 4 outline the five ground water sampling points and their requested analyses. Ground water samples were not field filtered. Each sample was tested for turbidity using a MicroTPW. Specific Conductance, pH, Oxygen Reduction Potential, and Dissolved Oxygen were determined using a YSI model 600XL. Field parameters were not tested for sample 1E-6 due to lack of volume. Both the MicroTPW and YSI were field calibrated prior to use. A depth to water reading was taken at each temporary monitoring well using a Solinst depth to water meter. The meter was decontaminated prior to use, and between each sampling location. All soil and ground water samples were packed in coolers with ice for delivery to Pace Analytical.

3.0 Sample Results and RISC Comparisons

The sample analytical results are summarized in Tables 1 through 4 of this report. Tables 1 and 3 summarize the detected values from the analysis of soil and ground water samples, respectively. Tables 2 and 4 summarize non-detected values from the analysis of soil and ground water samples, respectively. The laboratory analytical report forms and chain-of-custody documentation from the sampling event are provided in electronic format on compact disk as pdf files in Appendix 2. The Total Petroleum Hydrocarbons (TPH) fractionation analysis report from the analytical laboratory is also provided in electronic format on compact disk as a pdf file in Appendix 2. Hardcopy printouts of Indiana Department of Environmental Management's (IDEM) *TPH Fractionation Tool* spreadsheet that was completed for the three samples collected for TPH fractionation is provided in Appendix 3.

3.1 Soil Samples

The soil samples, obtained at the locations shown on Figure 1 and summarized in Tables 1 and 2, indicate that the subsurface soil concentrations of RCRA Metals are all well below their respective RISC default residential closure levels as outlined in Appendix 2 of IDEM's RISC Technical Guide. The field pH samples were found to be within normal range, although that data was not used to derive non-default closure levels.

Migration to ground water non-default closure levels were calculated by using the site-specific sample results for TPH fractions and the *TPH Fractionation Tool* spreadsheet. Gasoline Range Organics (TPH/GRO) from all sampling locations and depths are well below their respective RISC non-default residential closure levels.

High End Organics (TPH/HEO) at sampling locations AEI-1 (8090 mg/kg), 1E5 (8590 mg/kg) and 1S2 (8470 mg/kg) are above the RISC industrial non-default migration to ground water closure level of 4400 mg/kg. The upper (2-4 foot bgs) sample analysis for TPH/HEO at 1S2 showed 8470 mg/kg, while the deeper sample intervals (10-12 and 14-16 feet bgs) were non-detect. TPH/HEO at sampling locations 1W1 (1630 mg/kg) and 1S1 (1840 mg/kg) are above the RISC residential non-default migration to ground water closure level of 520 mg/kg but below the RISC industrial non-default migration to ground water closure level.

3.2 Groundwater Samples

The ground water sample analytical data from the five temporary monitoring wells indicate that the TPH/ERO values at wells 1E6 (0.73 mg/L) and 1W2 (0.57 mg/L) slightly exceed the RISC residential non-default closure level of 0.55 mg/L, but are well below the corresponding industrial closure level of 4.1 mg/L, as shown in Table 3. TPH/ERO values at AEI-1 (7.7 mg/L) and 1N3 (7.4 mg/L) exceed the RISC industrial non-default closure level of 4.1 mg/L. The TPH/ERO value at 1S3 was below the RISC residential non-default closure level. TPH/GRO was non-detect in all ground water samples.

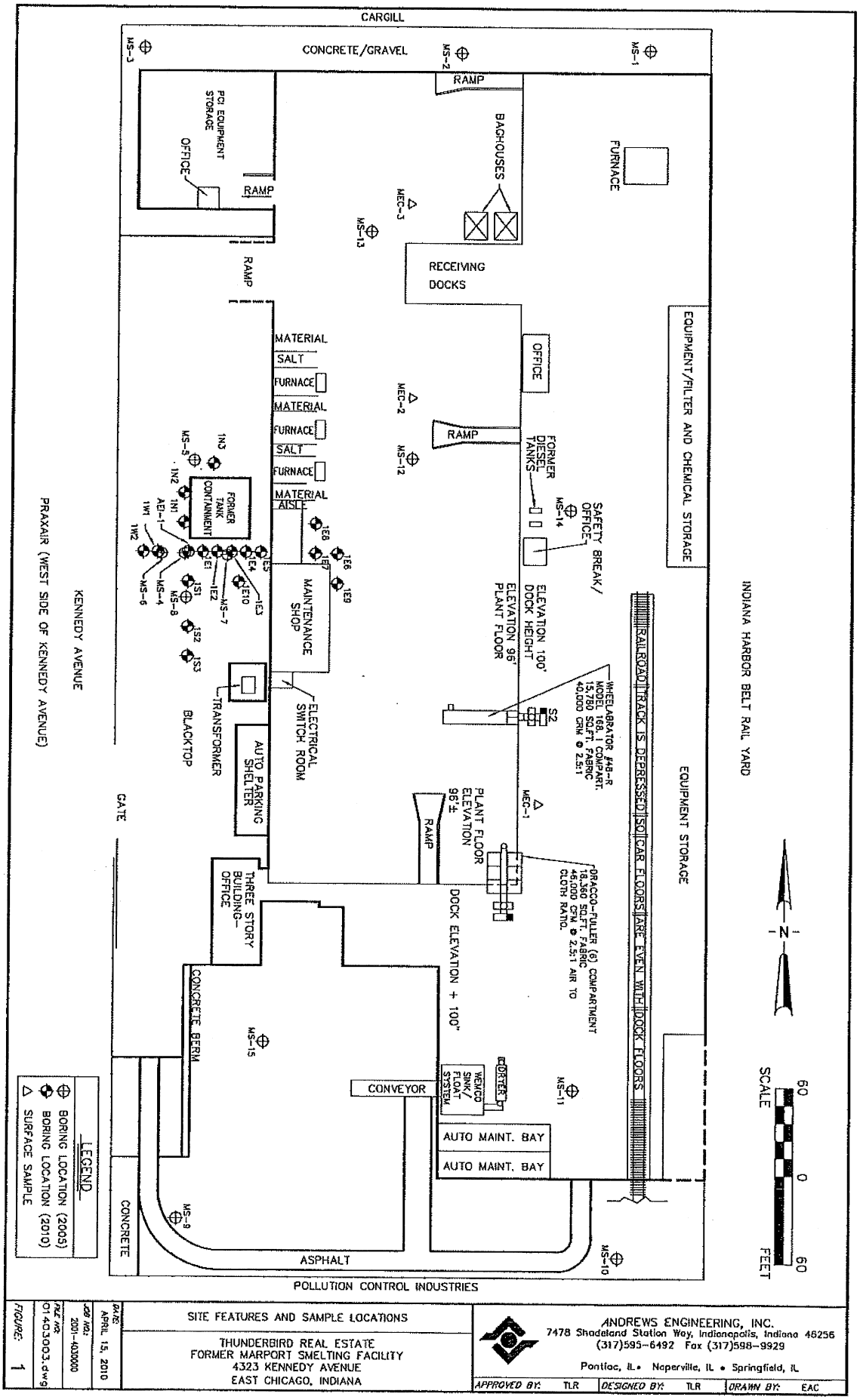
The total lead concentration from well 1S3 (0.0215 mg/L) exceeds the RISC residential non-default closure level of 0.015 mg/L, but is below the corresponding industrial closure level of 0.042 mg/L. Total lead concentrations from AEI-1 (0.0832 mg/L) and 1N3 (0.115 mg/L) exceed the RISC industrial non-default closure level of 0.042 mg/L. However, the ground water samples, despite efforts to construct the temporary wells properly and use sample techniques to minimize entrainment of sediment, exhibited relatively high turbidity measurements. Sediment entrained in water samples often results in metals concentrations much higher than what is normally dissolved in the water naturally. The total lead concentration from well 1W2 was non-detect.

4.0 Summary of Findings

Nineteen soil borings were advanced in order to characterize soil and ground water quality surrounding former boring MS-4. The soils consist of sandy fill that is saturated within 2 to 4 feet of ground surface.

Soil results indicate that none of the RCRA metals exceed RISC default residential default levels. In addition, TPH/GRO from all sampling locations and depths are well below their respective RISC non-default residential closure levels. Exceedances of industrial RISC standards were limited to locations immediately adjacent to former boring MS-4 and at distances approximately 50 feet south and 50 feet east of MS-4. Borings beyond those distances had either no detections or were below RISC standards.

Ground water samples were obtained from AEI-1, immediately adjacent to MS-4 and from the furthest borings from MS-4 in each cardinal direction. All sample results were below detection limits for BTEX compounds and TPH/GRO. Exceedances of the industrial RISC standard for TPH/HEO occurred at locations AEI-1 (immediately adjacent to MS-4) and 1N3. There were exceedances of the industrial RISC default level for lead at AEI-1 and 1N3, but these results are ambiguous due to the presence of entrained sediment as evidenced by high turbidity readings.



SITE FEATURES AND SAMPLE LOCATIONS

THUNDERBIRD REAL ESTATE
FORMER MARPORT SMELTING FACILITY
4323 KENNEDY AVENUE
EAST CHICAGO, INDIANA

ANDREWS ENGINEERING, INC.
7478 Shadeland Station Way, Indianapolis, Indiana 46256
(317)595-6492 Fax (317)598-9929
Pontiac, IL • Naperville, IL • Springfield, IL

APPROVED BY:	TLR	DESIGNED BY:	TLR	DRAWN BY:	EAC

DATE:	JOB NO:	FILE NO:	FIGURE:
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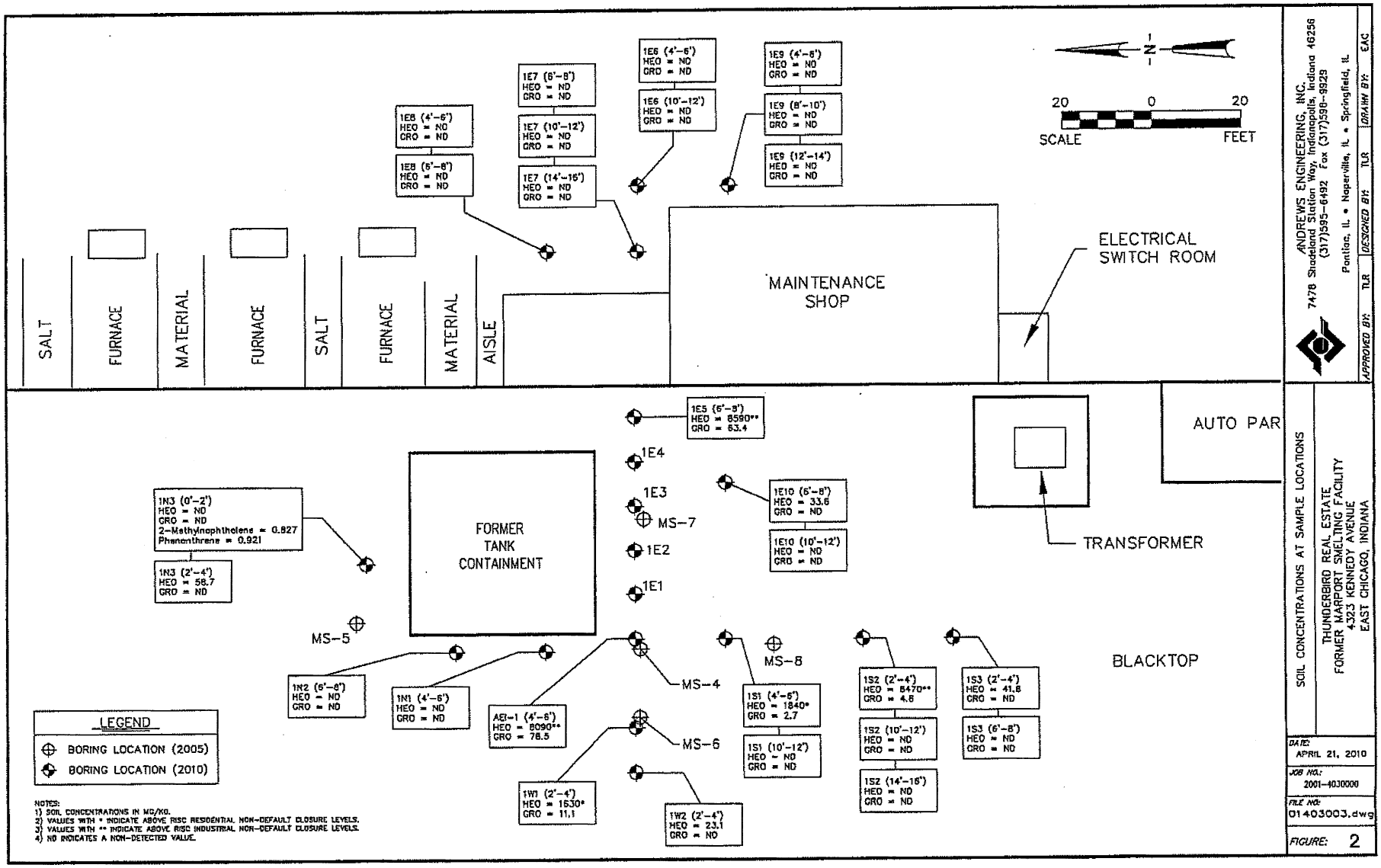

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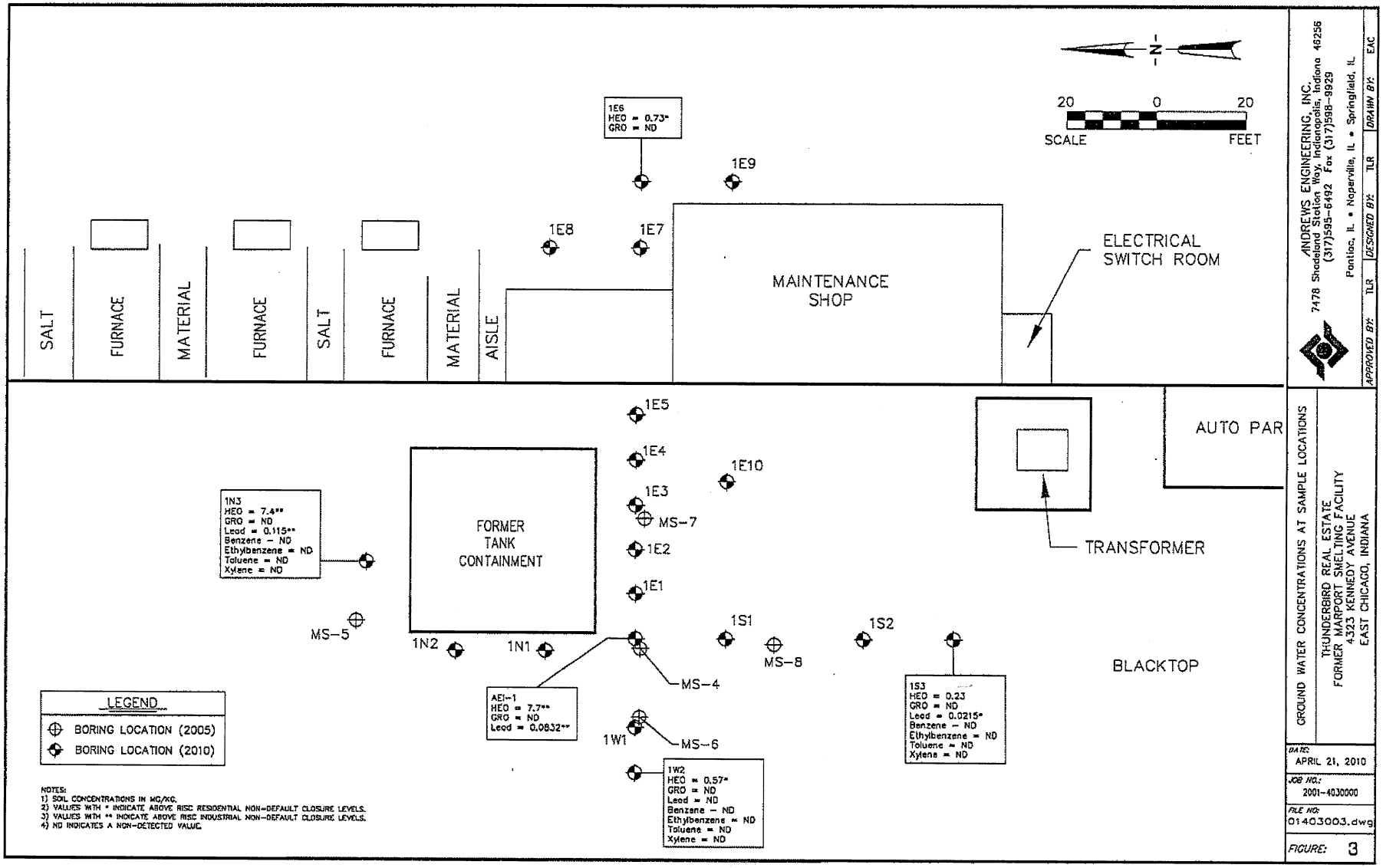
SOIL CONCENTRATIONS AT SAMPLE LOCATIONS

THUNDERBIRD REAL ESTATE
FORMER AIRPORT SMELTING FACILITY
4323 KENNEDY AVENUE
EAST CHICAGO, INDIANA

DATE: APRIL 21, 2010
JOB NO.: 2001-4030000
FILE NO: 01403003.dwg
FIGURE: 2



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APPROVED BY: TLR | DESIGNED BY: TLR | DRAWN BY: EAC

GROUND WATER CONCENTRATIONS AT SAMPLE LOCATIONS

THUNDERBIRD REAL ESTATE
FORMER MARPORT SMELTING FACILITY
4323 KENNEDY AVENUE
EAST CHICAGO, INDIANA

DATE: APRIL 21, 2010
JOB NO.: 2001-4030000
FILE NO: 01403003.dwg
FIGURE: 3

TABLE 1. RISC SOIL DETECTIONS BY BORING NAME

Boring Name	Species	Concentration (mg/kg)	Detection Limit (mg/kg)	RISC Residential Non Default Migration to Ground Water (mg/kg)	RISC Industrial Non Default Migration to Ground Water (mg/kg)
AEI-1 (4-6')	High End Organics (C8-C34)	**8090**	589	520	4400
AEI-1 (4-6')	Gasoline Range Organics	78.5	3.3	520	4400
1E5 (6-8')	High End Organics (C8-C34)	**8590**	585	520	4400
1E5 (6-8')	Gasoline Range Organics	63.4	44.9	520	4400
1E10 (6-8')	High End Organics (C8-C34)	33.6	11.7	520	4400
1W1 (2-4')	High End Organics (C8-C34)	**1630**	66.5	520	4400
1W1 (2-4')	Gasoline Range Organics	11.1	1.1	520	4400
1W2 (2-4')	High End Organics (C8-C34)	23.1	12.3	520	4400
1N3 (2-4')	High End Organics (C8-C34)	58.7	12.3	520	4400
1S1 (4-6')	High End Organics (C8-C34)	**1840**	61.6	520	4400
1S1 (4-6')	Gasoline Range Organics	2.7	1.0	520	4400
1S2 (2-4')	High End Organics (C8-C34)	**8470**	570	520	4400
1S2 (2-4')	Gasoline Range Organics	4.8	0.98	520	4400
1S3 (2-4')	High End Organics (C8-C34)	41.8	11.9	520	4400
Boring Name	**Species**	**Concentration (mg/kg)**	**Detection Limit (mg/kg)**	**RISC Residential Default Migration to Ground Water (mg/kg)**	**RISC Industrial Default Migration to Ground Water (mg/kg)**
1N3 (0-2')	2-Methylnaphthalene	0.827	0.398	3.1	42
1N3 (0-2')	Phenanthrene	0.921	0.398	13	170
1N3 (0-2')	Arsenic	2.6	2.2	5.8	5.8
1N3 (0-2')	Barium	36.1	2.2	1600	17000
1N3 (0-2')	Beryllium	1.1	0.55	63	3200
1N3 (0-2')	Chromium	8.4	2.2	38	650
1N3 (0-2')	Copper	22.2	2.2	920	2900
1N3 (0-2')	Lead	11.5	2.2	81	230
1N3 (0-2')	Nickel	13.8	2.2	950	2700
1N3 (0-2')	Zinc	39.2	2.2	14000	38000

Note: Bold values indicate values above RISC Residential Closure Levels.
Bold values in a shaded box indicate values above RISC Industrial Closure Levels.

TABLE 2. RISC SOIL NON-DETECTIONS BY BORING NAME

Boring Name	Species	Concentration (mg/kg)	Detection Limit (mg/kg)	RISC Residential Non-Default Migration to Ground Water (mg/kg)	RISC Industrial Non-Default Migration to Ground Water (mg/kg)
1E6 (4-6')	High End Organics (C8-C34)	<11.8	11.8	520	4400
1E6 (4-6')	Gasoline Range Organics	<1.0	1.0	520	4400
1E6 (10-12')	High End Organics (C8-C34)	<11.9	11.9	520	4400
1E6 (10-12')	Gasoline Range Organics	<1.1	1.1	520	4400
1E7 (6-8')	High End Organics (C8-C34)	<11.7	11.7	520	4400
1E7 (6-8')	Gasoline Range Organics	<0.94	0.94	520	4400
1E7 (10-12')	High End Organics (C8-C34)	<12.3	12.3	520	4400
1E7 (10-12')	Gasoline Range Organics	<1.1	1.1	520	4400
1E7 (14-16')	High End Organics (C8-C34)	<12.2	12.2	520	4400
1E7 (14-16')	Gasoline Range Organics	<1.0	1.0	520	4400
1E8 (4-6')	High End Organics (C8-C34)	<12.0	12.0	520	4400
1E8 (4-6')	Gasoline Range Organics	<0.97	0.97	520	4400
1E8 (6-8')	High End Organics (C8-C34)	<11.8	11.8	520	4400
1E8 (6-8')	Gasoline Range Organics	<0.88	0.88	520	4400
1E9 (4-6')	High End Organics (C8-C34)	<11.6	11.6	520	4400
1E9 (4-6')	Gasoline Range Organics	<0.96	0.96	520	4400
1E9 (8-10')	High End Organics (C8-C34)	<12.4	12.4	520	4400
1E9 (8-10')	Gasoline Range Organics	<1.0	1.0	520	4400
1E9 (12-14')	High End Organics (C8-C34)	<12.2	12.2	520	4400
1E9 (12-14')	Gasoline Range Organics	<1.1	1.1	520	4400
1E10 (6-8')	Gasoline Range Organics	<0.96	0.96	520	4400
1E10 (10-12')	High End Organics (C8-C34)	<12.2	12.2	520	4400
1E10 (10-12')	Gasoline Range Organics	<1.1	1.1	520	4400
1W2 (2-4')	Gasoline Range Organics	<4.8	4.8	520	4400
1N1 (4-6')	High End Organics (C8-C34)	<12.4	12.4	520	4400
1N1 (4-6')	Gasoline Range Organics	<2.9	2.9	520	4400
1N2 (6-8')	High End Organics (C8-C34)	<11.6	11.6	520	4400
1N2 (6-8')	Gasoline Range Organics	<0.84	0.84	520	4400
1N3 (2-4')	Gasoline Range Organics	<1.1	1.1	520	4400
1S1 (10-12')	High End Organics (C8-C34)	<12.3	12.3	520	4400
1S1 (10-12')	Gasoline Range Organics	<1.0	1.0	520	4400
1S2 (10-12')	High End Organics (C8-C34)	<11.9	11.9	520	4400
1S2 (10-12')	Gasoline Range Organics	<1.1	1.1	520	4400
1S2 (14-16')	High End Organics (C8-C34)	<12.4	12.4	520	4400
1S2 (14-16')	Gasoline Range Organics	<1.0	1	520	4400
1S3 (2-4')	Gasoline Range Organics	<1.1	1.1	520	4400
1S3 (6-8')	High End Organics (C8-C34)	<12.0	12	520	4400
1S3 (6-8')	Gasoline Range Organics	<1.1	1.1	520	4400
Boring Name	Species	Concentration (mg/kg)	Detection Limit (mg/kg)	RISC Residential Default Migration to Ground Water (mg/kg)	RISC Industrial Default Migration to Ground Water (mg/kg)
1N3 (0-2')	Antimony	<2.2	2.2	5.4	37
1N3 (0-2')	Cadmium	<2.2	2.2	7.5	77
1N3 (0-2')	Cyanide, Free	<0.6	0.60	0.94	9.6
1N3 (0-2')	Mercury	<0.39	0.39	2.1	32
1N3 (0-2')	Selenium	<2.2	2.2	5.2	53
1N3 (0-2')	Silver	<2.2	2.2	31	87
1N3 (0-2')	Thallium	<2.2	2.2	2.8	10

TABLE 3. RISC GROUND WATER DETECTIONS BY WELL NAME

Boring Name	Species	Concentration (mg/L)	Detection Limit (mg/L)	RISC Residential Non-Default Ground Water (mg/L)	RISC Industrial Non-Default Ground Water (mg/L)
AEI-1	High End Organics (C8-C34)	**7.7**	0.099	0.55	4.1
1E6	High End Organics (C8-C34)	**0.73**	0.1	0.55	4.1
1S3	High End Organics (C8-C34)	0.23	0.1	0.55	4.1
1W2	High End Organics (C8-C34)	**0.57**	0.1	0.55	4.1
1N3	High End Organics (C8-C34)	**7.4**	0.099	0.55	4.1
Boring Name	Species	Concentration (mg/L)	Detection Limit (mg/L)	RISC Residential Default Ground Water (mg/L)	RISC Industrial Default Ground Water (mg/L)
AEI-1	Lead	**0.0832**	0.01	0.015	0.042
1S3	Lead	**0.0215**	0.01	0.015	0.042
1N3	Lead	**0.115**	0.01	0.015	0.042

Note: Bold values indicate values above RISC Residential Closure Levels.
Bold values in a shaded box indicate values above RISC Industrial Closure Levels.

TABLE 4. RISC GROUND WATER NON-DETECTIONS BY WELL NAME

Boring Name	Species	Concentration (mg/L)	Detection Limit (mg/L)	RISC Residential Non-Default Ground Water (mg/L)	RISC Industrial Non-Default Ground Water (mg/L)
AEI-1	Gasoline Range Organics	<0.2	0.2	0.55	4.1
1E6	Gasoline Range Organics	<0.2	0.2	0.55	4.1
1S3	Gasoline Range Organics	<0.2	0.2	0.55	4.1
1W2	Gasoline Range Organics	<0.2	0.2	0.55	4.1
1N3	Gasoline Range Organics	<0.2	0.2	0.55	4.1
Boring Name	Species	Concentration (mg/L)	Detection Limit (mg/L)	RISC Residential Default Ground Water (mg/L)	RISC Industrial Default Ground Water (mg/L)
1S3	Benzene	<0.005	0.005	0.005	0.099
1S3	Ethylbenzene	<0.005	0.005	0.7	10
1S3	Toluene	<0.005	0.005	1	20
1S3	Xylene (Total)	<0.01	0.010	10	180
1W2	Lead	<0.01	0.01	0.015	0.042
1W2	Benzene	<0.005	0.005	0.005	0.099
1W2	Ethylbenzene	<0.005	0.005	0.7	10
1W2	Toluene	<0.005	0.005	1	20
1W2	Xylene (Total)	<0.01	0.010	10	180
1N3	Benzene	<0.005	0.005	0.005	0.099
1N3	Ethylbenzene	<0.005	0.005	0.7	10
1N3	Toluene	<0.005	0.005	1	20
1N3	Xylene (Total)	<0.01	0.010	10	180

TABLE 5. FIELD PARAMETERS BY WELL NAME

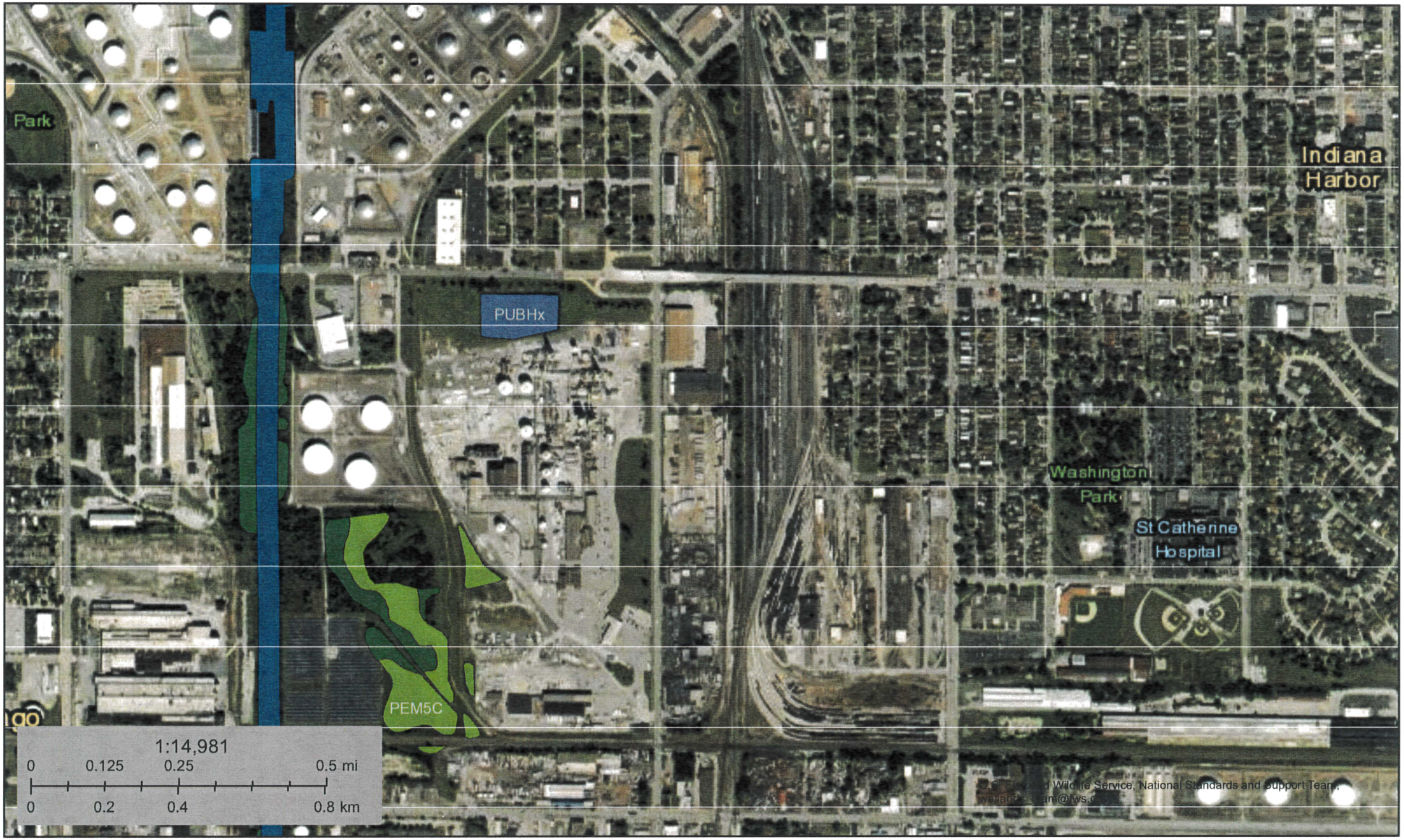
Temporary Monitoring Well	Depth to Water (BGS)	Turbidity (NTU)	Temperature (C°)	Specific Conductance (µmhos/cm)	pH (su)	Dissolved Oxygen (mg/l)	Oxygen Reduction Potential (Mvolts)
AEI-1	3.52	361.4	11.5	961	7.79	6.27	-169.2
1N3	3.42	538.2	9.18	900	7.64	3.48	-274
1W2	3.23	718.9	11.19	845	7.2	3.95	-199.2
1S3	3.36	582.7	8.19	607	7.72	3.69	-182.1
1E6	2.11	insufficient volume					

APPENDIX B. NATIONAL WETLANDS INVENTORY MAP

U.S. Fish and Wildlife Service

National Wetlands Inventory

MWI Map - Marport LLC



February 9, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX C. ENDANGERED, THREATENED, OR RARE SPECIES LIST

01/13/2023

Indiana County Endangered, Threatened and Rare Species List

DNR Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Lake					
Mollusk: Bivalvia (Mussels)					
Plethobasus cyphyus	Sheepnose	E	SE	G3	S1
Venustaconcha ellipsiformis	Ellipse			G4	S2
Insect: Coleoptera (Beetles)					
Nicrophorus americanus	American Burying Beetle	E	SX	G3	SX
Insect: Homoptera					
Bruchomorpha dorsata	dorsal-striped elephant hopper		SR	GNR	S2
Bruchomorpha extensa	The Long-nosed Elephant Hopper		SR	GNR	S2S3
Bruchomorpha oculata	eyed elephant hopper		SR	GNR	SNR
Chlorotettix borealis	northern chlorotettix leafhopper		SR	GNR	S2
Chlorotettix fallax	Deceptive Chlorotettix Leafhopper		SR	GNR	S1S2
Cicadula straminea	Straw-colored Sedge Leafhopper		ST	GNR	S1S2
Cosmotettix bilineatus	Two-lined cosmotettix		SR	GNR	S1S2
Cribrus shingwauki	Two-striped Perforated Leafhopper		SR	GNR	S2S3
Dorydiella kansana	Kansas Spikerush Leafhopper		SR	GNR	S2S3
Flexamia delongi	DeLong's Flexamia Leafhopper		SR	GNR	S2
Flexamia pyrops	The Long-nose Three-awn Leafhopper		ST	GNR	S1
Flexamia reflexus	Indiangrass Flexamia		SR	GNR	S1S2
Graminella aureovittata	Red-banded Switchgrass Leafhopper		SR	GNR	S2
Graminella mohri	Mohr's Switchgrass Leafhopper		SE	GNR	S1
Hecalus major	Major Shovelhead Leafhopper		SR	GNR	S1S3
Laevicephalus acus	Pointed Fen Laevicephalus		SR	GNR	S1S2
Limotettix bisoni	Bison Limotettix Leafhopper		SR	GNR	S1S2
Limotettix divaricatus	forked limotettix leafhopper		ST	GNR	S1
Limotettix truncatus	Short-headed Limotettix Leafhopper		SR	GNR	S1S2
Mesamia nigridorsum	Black-banded Sunflower Leafhopper		WL	GNR	S2S3
Paraphilaenus parallelus	parallel-striped spittlebug		ST	GNR	S1
Paraphlepsius lobatus	Lobed Paraphlepsius Leafhopper		SR	GNR	S2
Paraphlepsius lupalus	Hamilton's Dune Paraphlepsius		SE	GNR	S1
Paraphlepsius maculosus	Peppered Paraphlepsius Leafhopper		ST	GNR	S1S2
Philaenarcys killa	Great Lakes dune spittlebug		SR	GNR	S2S3
Polyamia caperata	Little Bluestem Polyamia		SR	GNR	S2
Polyamia herbida	The Prairie Panic Grass Leafhopper		ST	GNR	S2

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: E = Endangered; T = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; S4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

01/13/2023

Indiana County Endangered, Threatened and Rare Species List

DNR Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Prairiana kansana	The Kansas Prairie Leafhopper		SE	GNR	S1
Prosapia ignipectus	Red-legged Spittle Bug		SR	G4	S2
Insect: Hymenoptera					
Bombus affinis	Rusty-patched Bumble Bee	E	SE	G2	S1
Dolichoderus plagiatus				G5	S2
Formica glacialis				G5	S2
Lasius flavus				G5	S2
Lasius minutus				GNR	S1
Lasius speculiventris				GNR	S1
Myrmica lobifrons				G5	S1
Solenopsis texana texana				GNRTNR	S1
Insect: Lepidoptera (Butterflies & Moths)					
Acronicta funeralis	Funerary Dagger Moth		ST	G5	S2S3
Aethes patricia	Patricia's Cochylid moth		ST	G3G4	S2S3
Agrotis stigmosa	Spotted Dart Moth		ST	G4	S1S2
Ancylis semiovana	New Jersey tea leaf-tier		SR	GNR	S2S3
Apamea burgessi	Burgess' Apamea		ST	G4	S1
Apamea indocilis	spastic apamea		ST	G5	S1S3
Apamea nigrior	black-dashed apamea		ST	G5	S2
Atrytonopsis hianna	Dusted Skipper		SR	G4G5	S2S3
Boloria selene myrina	Silver-bordered Fritillary		SR	G5	S2S3
Capis curvata	curved halter moth		ST	G5	S3S4
Capsula laeta	red sedge borer moth		ST	G4	S1S2
Caradrina meralis	rare sand Quaker		ST	G5	S2
Carectocultus perstrialis	reed-boring crambid		SR	GNR	S1
Catocala antinympha	sweet fern underwing		SE	G5	S1
Catocala gracilis	graceful underwing		SR	G5	S2S3
Catocala praeclara	Praeclara underwing		SR	G5	S3S4
Coenochroa illibella	dune panicgrass moth		SR	GNR	S2S3
Crambus bidens	forked grass-veneer moth		SR	GNR	S2S3
Cycnia collaris	unexpected tiger moth		ST	G4	S2S3
Danaus plexippus	Monarch	C	WL	G4	S4S5B
Dargida rubripennis	buff-edge Quaker		ST	G3G4	S1S2
Dichagyris acclivis	buff-edge Quaker		ST	G4G5	S2
Dichagyris grotei	Grote's black-tipped Quaker		ST	G4	S1S2
Dichomeris aleatrix	Buffy dichomeris		SR	GNR	S1S3
Digrammia eremiata	Goat's rue looper		SR	G4	S2S3
Digrammia mellistrigata	yellow-striped angle		SR	G5	S3
Erynnis lucilius	Columbine Duskywing		SE	G3	SH
Erynnis martialis	Mottled Duskywing		WL	G3	S3

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

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01/13/2023

Indiana County Endangered, Threatened and Rare Species List

DNR
Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Erynnis persius persius	Persius Duskywing		SE	G5T1T3	S1
Euchloe olympia	Olympia Marble		SR	G5	S2S3
Eucoptocnemis fimbriaris	fringed dart		ST	G4	S2
Eucosma bilineana	two-striped eucosma		SR	GNR	S2S3
Eucosma bipunctella	two-spotted eucosma		ST	GNR	S1S2
Eucosma giganteana	giant eucosma		ST	GNR	S2
Eucosma olivaceana	Olivaceous Eucosma		SR	GNR	S2S3
Eucosma umbrastriana	smokey-striped eucosma		SR	GNR	S3
Euphyes bimacula	Two-spotted Skipper		ST	G4	S1S2
Fagitana littera	marsh fern moth		ST	G4	S1S2
Feltia manifesta	record keeper		SR	G4	S3S4
Gabara subnivosella	snowy gabara		ST	G4	S1S2
Glaucopsyche lygdamus couperi	silvery blue		SE	G5T5	S1
Grammia figurata	figured grammia		SR	G5	S3
Grammia virguncula	little virgin tiger moth		SR	G5	S1S2
Hadena capsularis	starry campion capsule moth		SR	G5	S2
Hadena ectypa	starry campion moth		ST	G3G4	S1S2
Hemaris gracilis	blueberry clearwing sphinx		ST	G3G4	S1S2
Hesperia leonardus	Leonard's Skipper		SR	G4	S2S3
Hesperia ottoe	Ottoe Skipper		SE	G3	S1
Hypenodes caducus	large hypenodes		SR	GNR	S3S4
Hypocoena inquinata	tufted sedge moth		ST	G5	S1S2
Iodopepla u-album	white-eyed sedge-borer		SR	G5	S2S3
Lemmeria digitalis	fingered lemmeria		SR	G4	S1S2
Lethe eurydice eurydice	eyed brown		WL	G5T5	S3
Leucania amygdalina	salt marsh wainscot		SR	GNR	S2
Leucania inermis	unarmed wainscot		ST	G5	S2
Leucania multilinea	many-lined wainscot		SE	G5	S1
Limochores mystic	Long Dash Skipper			G5	S3S4
Lycaeides melissa samuelis	Karner Blue	E	SE	G1G2	S1
Lycaena dione	Gray Copper		SX	G5	SX
Lycaena helloides	Purplish Copper		SR	G5	S2S3
Macaria multilineata	many-lined angle		SR	G4	S4
Macrochilo louisiana	Louisiana macrochilo		SR	G4	S3S4
Melipotis jucunda	merry melipotis		SR	G5	S1S3
Meropleon ambifusca	Newman's brocade		ST	G3G4	S2
Meropleon diversicolor	multicolored brocade		ST	G5	S2
Metarranthis apiciaria	barrens metarranthis		SE	G1G3	S1
Neodactria murellus	prairie sedge moth		SE	GNR	S1
Nola cilicoides	blurry-patched nola		SR	G5	S3

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Notodonta scitipennis	finned-willow prominent		ST	G5	S1S2
Odontosia elegans	elegant prominent		SR	G5	S2S3
Oligia obtusa	obtuse sedge borer		SE	G4	S1
Papaipema beeriana	Beer's blazing star borer moth		ST	G2G3	S1S3
Papaipema cerina	golden borer moth		ST	G2G4	S1
Papaipema leucostigma	columbine borer moth		ST	G4G5	S1S2
Papaipema lysimachiae	St. John's wort borer moth		ST	G4G5	S2
Papaipema maritima	giant sunflower borer moth		ST	G3	S2S3
Papaipema rigida	rigid sunflower borer moth		SR	G4G5	S3S4
Papaipema sciata	Culver's root borer moth		SE	G3	S1S2
Papaipema silphii	Silphium Borer Moth		ST	G3G4	S2
Papaipema speciosissima	royal fern borer moth		ST	G4	S3S4
Parasa indetermina	stinging rose caterpillar moth		SR	G4	S3S4
Peoria gemmatella	gemmed cordgrass borer		ST	GNR	S2S3
Peoria tetradella	four-spotted peoria		SR	GNR	S2
Phaneta striatana	striated phaneta moth		SR	G5	S4
Photedes enervata	many-lined photedes		SE	G4	S1
Photedes includens	included photedes		ST	G4	S1
Photedes inops	helpless photedes		ST	G3G4	S1S2
Photedes panatela	northern sedge borer		SR	GNR	S2S3
Phytometra ernestinana	Ernestine's phytometra		SE	G4	S1
Poanes massasoit	Mulberry Wing Skipper			G4	S3S4
Poanes viator viator	Big Broad-winged Skipper		ST	G5T4	S2
Polygonia progne	gray comma		SR	G5	S2S3
Ponometia binocula	prairie tarachidia		SE	GNR	S1
Problema byssus	Bunchgrass Skipper		ST	G4	S1S2
Protorthodes incincta	Saturn quaker		SR	GNR	S2
Pygarctia spraguei	Sprague's pygartic		ST	G5	S1S2
Pyrausta laticlavia	southern purple mint moth		SR	GNR	S2S3
Pyrrhia aurantiago	false-foxglove sun moth		ST	G3G4	S1S2
Resapamea stipata	four-lined cordgrass borer		SE	G4	S1S2
Schinia indiana	phlox flower moth		SE	G2G4	S1
Schinia sanguinea	blazingstar flower moth		SE	G4	S1
Schinia septentrionalis	northern flower moth		ST	G3G4	S2
Sitochroa dasconalis	pearly wild indigo borer		ST	GNR	S1S2
Sonia fulminana	smokey prairie dock borer		SR	GNR	S2
Speyeria idalia	Regal Fritillary	C	SE	G3?	S1S2
Sphinx luscitiosa	luscious willow sphinx		ST	G5	S1S2
Spilosoma latipennis	red-legged tussock moth		SR	G4	S3S4
Sympistis riparia	dune oncocnemis		SE	G4	S1

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Tricholita notata	noted sunflower moth		ST	G5	S1S2
Zomaria interruptolineana	broken-lined zomaria		SR	GNR	S4
Insect: Odonata (Dragonflies & Damselflies)					
Anax longipes	Comet Darner		ST	G5	S2
Rhionaeschna mutata	Spatterdock Darner		ST	G4	S2S3
Somatochlora hineana	Hine's Emerald	E	SX	G2G3	SX
Sympetrum semicinctum	Band-winged Meadowhawk		SR	G5	S2S3
Insect: Orthoptera					
Chloealtis conspersa	Sprinkled Locust		SR	G5	S2S3
Conocephalus saltans	Prairie Meadow Katydid		SR	G5	S1S2
Hesperotettix viridis pratensis	snakeweed grasshopper		ST	G5T5	S1S2
Melanoplus fasciatus	Huckleberry Spur-throat Grasshopper		SR	G5	S2
Melanoplus keeleri luridus	Keeler's Spur-throated Grasshopper		SR	G5T5	S3S4
Neoconocephalus nebrascensis	Nebraska Conehead		SR	GNR	S1S2
Orphulella pelidna	Spotted-wing Grasshopper		SE	G5	S1
Pardalophora phoenicoptera	Orange-winged Grasshopper		SR	G5	S1S2
Paroxya atlantica	Atlantic Spastic Grasshopper		ST	GU	S2
Phoetaliotes nebrascensis	Large-headed Grasshopper		ST	G5	S1S2
Psinidia fenestralis	Sand Locust		SR	G5	S2
Trimerotropis maritima	Seaside Grasshopper		ST	G5	S1S2
Arachnida					
Araneus juniperi	white-striped orbweaver		SE	GNR	S1
Coras aerialis	big-eyed spurred woodland funnelweaver		SE	GNR	S1
Disembolus bairdi	a money spider		SE	GNR	S1
Emertonella emertoni	a cobweb spider		SE	GNR	S1
Grammonota pallipes	pale-footed patterned money spider		SE	GNR	S1
Iviella ohioensis	Ohio meshweaver		SE	GNR	S1
Mecaphesa carletonica	Northeastern flower crab spider		SE	GNR	S1
Ozyptila georgiana	curled leaflitter crab spider		WL	GNR	S3S4
Phantyna pixi	a meshweaver		SE	GNR	S1
Phruronellus formica	an araenomorph spider		SE	GNR	S1
Phrurotimpus dulcineus	slender antmimic corrine spider		SE	GNR	S1
Scironis tarsalis	Tarsal sheet-web weaver		SE	G5	S1
Scotinotylus vernalis	vernal money spider		SE	GNR	S1
Zelotes exiguoides	small-spined preening ground spider		ST	GNR	S2
Fish					

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Acipenser fulvescens	Lake Sturgeon		SE	G3G4	S1
Ichthyomyzon fossor	Northern Brook Lamprey		SSC	G4	S1
Rhinichthys cataractae	Longnose Dace		SSC	G5	S2
Amphibian					
Acris blanchardi	Blanchard's cricket frog		SSC	G5	S4
Ambystoma laterale	blue-spotted salamander		SSC	G5	S2
Necturus maculosus	common mudpuppy		SSC	G5	S3
Reptile					
Clemmys guttata	spotted turtle	C	SE	G5	S2
Clonophis kirtlandii	Kirtland's snake		SE	G2	S3
Emydoidea blandingii	Blanding's turtle	C	SE	G4	S2
Opheodrys vernalis	smooth green snake		SE	G5	S2
Sistrurus catenatus	eastern massasauga	T	SE	G3	S2
Terrapene carolina carolina	woodland box turtle		SSC	G5T5	S3
Terrapene ornata ornata	plains box turtle		SE	G5T5	S1
Thamnophis proximus proximus	western ribbon snake		SSC	G5T5	S3
Thamnophis radix	plains garter snake		SSC	G5	S3
Bird					
Accipiter striatus	Sharp-shinned Hawk		SSC	G5	S2B
Antigone canadensis	sandhill crane		SSC	G5	S2B,S1N
Ardea alba	Great Egret		SSC	G5	S1B
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Centronyx henslowii	Henslow's sparrow		SE	G4	S3B
Certhia americana	Brown Creeper			G5	S2B
Charadrius melodus	Piping Plover	E	SE	G3	SXB
Chlidonias niger	Black Tern		SE	G4G5	S1B
Chordeiles minor	Common Nighthawk		SSC	G5	S4B
Cistothorus palustris	marsh wren		SE	G5	S3B
Cistothorus stellaris	sedge wren		SE	G5	S3B
Cygnus buccinator	Trumpeter Swan		SE	G4	S1B
Euphagus cyanocephalus	Brewer's Blackbird			G5	SHB,S1N
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Gallinula galeata	Common gallinule		SE	G5	S3B
Haliaeetus leucocephalus	bald eagle			G5	S3
Hydroprogne caspia	Caspian Tern			G5	S1B
Ixobrychus exilis	Least Bittern		SE	G4G5	S3B
Lanius ludovicianus	loggerhead shrike		SE	G4	S2B
Laterallus jamaicensis	Black Rail	T	SE	G3	SHB

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Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Nyctanassa violacea	Yellow-crowned Night-heron		SE	G5	S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Pandion haliaetus	Osprey		SSC	G5	S1B
Phalaropus tricolor	Wilson's Phalarope		SSC	G5	SHB
Rallus elegans	King Rail		SE	G4	S1B
Rallus limicola	Virginia Rail		SE	G5	S3B
Scolopax minor	American Woodcock		SSC	G5	S4B
Spatula clypeata	Northern Shoveler			G5	SHB
Tringa melanoleuca	Greater Yellowlegs		SSC	G5	S3M
Tringa solitaria	Solitary Sandpiper		SSC	G5	S3M
Tyto alba	Barn Owl		SE	G5	S2
Xanthocephalus xanthocephalus	Yellow-headed Blackbird		SE	G5	S1B
Mammal					
Lasiurus borealis	Eastern red bat		SSC	G3G4	S4
Lasiurus cinereus	hoary bat		SSC	G3G4	S4
Myotis lucifugus	little brown myotis	C	SE	G3G4	S2
Myotis septentrionalis	Northern Long Eared Bat	T; PE	SE	G2G3	S2S3
Poliocitellus franklinii	Franklin's ground squirrel		SE	G5	S2
Reithrodontomys megalotis	Western Harvest Mouse			G5	S2
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Agalinis auriculata	earleaf foxglove		ST	G3	S2
Agalinis gattingeri	roundstem foxglove		ST	G4	S3
Agalinis skinneriana	pale false foxglove		ST	G3G4	S2
Alnus incana ssp. rugosa	speckled alder		WL	G5T5	S3?
Amelanchier humilis	running serviceberry		SE	G5	S1
Androsace occidentalis	western rockjasmine		ST	G5	S2
Aralia hispida	bristly sarsaparilla		SE	G5	S1
Arctostaphylos uva-ursi	bearberry		ST	G5	S3
Arethusa bulbosa	swamp-pink		SX	G5	SX
Aristida longespica var. geniculata	slim-spike three-awn grass		WL	G5T5?	S3
Aristida tuberculosa	seabeach needlegrass		ST	G5	S3
Asclepias meadii	Mead's milkweed	T	SRE	G2	SX
Aureolaria grandiflora var. pulchra	large-flower false-foxglove		SX	G4G5T4T5	SX
Baptisia bracteata var. leucophaea	cream wild-indigo		WL	G4G5T4T5	S3S4
Baptisia tinctoria	yellow wild-indigo		WL	G5	S3
Betula papyrifera	paper birch		ST	G5	S3
Betula populifolia	gray birch		WL	G5	S2S3
Bidens beckii	Beck's water-marigold		SE	G5	S1

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Boltonia asteroides	white boltonia		WL	G5	S4
Botrychium matricariifolium	chamomile grape-fern		ST	G5	S3
Botrychium simplex	least grape-fern		SE	G5	S1
Buchnera americana	bluehearts		SE	G5?	S1
Calopogon oklahomensis	Oklahoma grass-pink		SX	G2	SX
Calylophus serrulatus	yellow sundrops		SE	G5	S1
Capnoides sempervirens	pale corydalis		SE	G5	S1
Carex atherodes	awned sedge		SE	G5	S1
Carex aurea	golden-fruited sedge		ST	G5	S3
Carex bebbii	Bebb's sedge		WL	G5	S3
Carex brunnescens	brownish sedge		ST	G5	S2
Carex conoidea	prairie gray sedge		ST	G5	S2
Carex crawei	Crawe's sedge		ST	G5	S2
Carex cumulata	clustered sedge		SE	G4G5	S1
Carex debilis var. rudgei	white-edge sedge		WL	G5T5	S3S4
Carex eburnea	ebony sedge		ST	G5	S3
Carex echinata	little prickly sedge		SE	G5	S1
Carex garberi	elk sedge		SE	G5	S1
Carex limosa	mud sedge		SE	G5	S1
Carex projecta	necklace sedge		SE	G5	SU
Carex richardsonii	Richardson's sedge		ST	G5	S2
Carex seorsa	weak stellate sedge		ST	G5	S3
Carex straminea	straw sedge		ST	G5	S2
Carex trichocarpa	hairy-fruit sedge		WL	G4	S3
Catalpa speciosa	northern catalpa		ST	G4?	S3
Ceanothus herbaceus	prairie redroot		SE	G5	S1
Chamaenerion angustifolium ssp. circumvagum	fireweed		SE	G5T5	S1
Chimaphila maculata	spotted wintergreen		WL	G5	S3
Cirsium hillii	Hill's thistle		SE	G3	S1
Cirsium pitcheri	dune thistle	T	SE	G3	S1
Clinopodium arkansanum	calamint		ST	G5	S2
Clintonia borealis	Clinton's lily		SE	G5	S1
Comptonia peregrina	sweet fern		WL	G5	S3
Cornus amomum ssp. amomum	silky dogwood		SE	G5	S1
Cornus canadensis	bunchberry		SE	G5	S1
Cornus rugosa	roundleaf dogwood		ST	G5	S3
Cyperus dentatus	toothed sedge		SE	G4	S1
Cypripedium acaule	pink lady's-slipper		SE	G5	S1
Cypripedium candidum	small white lady's-slipper		ST	G4	S3
Cypripedium parviflorum var. makasin	small yellow lady's-slipper		ST	G5T4T5	S3

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Cypripedium parviflorum var. pubescens	large yellow lady's-slipper		WL	G5T5	S3
Cypripedium reginae	showy lady's-slipper		ST	G4G5	S3
Dactylorhiza viridis	long-bract green orchid		SE	G5	S1
Dichanthelium boreale	northern witchgrass		ST	G5	S3
Dichanthelium commonsianum	Commons' panic-grass		SE	GNR	SU
Dichanthelium deamii	Deam's panic-grass		SE	GNR	SU
Dichanthelium leibergii	Leiberg's witchgrass		ST	G4	S2
Diervilla lonicera	northern bush-honeysuckle		WL	G5	S3
Drosera intermedia	spoon-leaved sundew		ST	G5	S3
Drymocallis arguta	tall cinquefoil		WL	G5	SU
Eleocharis atropurpurea	purple spikerush		SE	G4G5	SU
Eleocharis geniculata	capitate spike-rush		ST	G5	S2
Eleocharis melanocarpa	black-fruited spike-rush		ST	G4	S2
Eleocharis wolfii	Wolf's spike-rush		ST	G3G5	S2
Epigaea repens	trailing arbutus		ST	G5	S3
Equisetum variegatum var. variegatum	variegated horsetail		SE	G5T5	S1
Eriophorum angustifolium	narrow-leaved cotton-grass		ST	G5	S3
Eriophorum gracile	slender cotton-grass		ST	G5	S2
Euphorbia polygonifolia	seaside spurge		ST	G5?	S2
Eurybia furcata	forked aster		ST	G3	S3
Fimbristylis puberula	Carolina fimbry		SE	G5	S1
Gentiana alba	yellow gentian		ST	G4	S3
Gentiana puberulenta	downy gentian		SE	G4G5	S1
Geranium bicknellii	Bicknell's northern cranesbill		SE	G5	S1
Geum aleppicum	yellow avens		ST	G5	SU
Glyceria borealis	small floating manna-grass		SE	G5	S1
Hudsonia tomentosa	sand-heather		ST	G5	S2
Hydrastis canadensis	golden seal		WL	G3G4	S3
Hypericum adpressum	creeping St. John's-wort		SE	G3	S2
Hypericum canadense	Canadian St. John's-wort		WL	G5	SU
Hypericum kalmianum	Kalm's St. John's-wort		WL	G4	S3
Hypericum swinkianum	Swink's St. John's-wort		SE	GNR	SU
Juglans cinerea	butternut		ST	G3	S2
Juncus articulatus	jointed rush		ST	G5	S1
Juncus balticus var. littoralis	Baltic rush		WL	G5T5	S3
Juncus pelocarpus	brown-fruited rush		SE	G5	S1
Juncus scirpoides	scirpus-like rush		ST	G5	S2
Juniperus communis var. depressa	ground juniper		ST	G5T5	S3
Juniperus horizontalis	creeping juniper		SX	G5	SX
Lactuca hirsuta	hairy lettuce		ST	G5?	SU

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01/13/2023

Indiana County Endangered, Threatened and Rare Species List

DNR Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Lathyrus japonicus	beach peavine		SE	G5	S1
Lathyrus venosus	smooth veiny pea		SE	G5	S1
Lechea stricta	upright pinweed		SX	G4?	SX
Lemna gibba	inflated duckweed		SE	G4G5	SU
Liatris pycnostachya	cattail gay-feather		SE	G5	S1
Lilium philadelphicum	wood lily		WL	G5	SU
Linnaea borealis	twinflower		SX	G5	SX
Linum sulcatum	grooved yellow flax		ST	G5	S3
Liparis loeselii	Loesel's twayblade		WL	G5	S3
Lipocarpha drummondii	Drummond's hemicarpha		SE	G4G5	S1
Ludwigia sphaerocarpa	globe-fruited false-loosestrife		SE	G5	S1
Lycopodiella inundata	northern bog clubmoss		SE	G5	S1
Lycopodiella subappressa	northern appressed bog clubmoss		SE	G2	S1
Malaxis unifolia	green adder's-mouth		SE	G5	S1
Matteuccia struthiopteris	ostrich fern		ST	G5	S3
Melampyrum lineare	American cow-wheat		SE	G5	S1
Mikania scandens	climbing hempweed		SE	G5	S1
Minuartia michauxii var. michauxii	Michaux's stitchwort		ST	G5T5	S2
Myosotis laxa	smaller forget-me-not		ST	G5	S2
Myriophyllum verticillatum	whorled water-milfoil		ST	G5	S3
Najas gracillima	thread-like naiad		ST	G5?	S3
Oenothera perennis	small sundrops		ST	G5	S3
Oligoneuron album	prairie goldenrod		ST	G5	S3
Orobanche fasciculata	clustered broomrape		SE	G4G5	S1
Orthilia secunda	one-sided wintergreen		SX	G5	SX
Panax quinquefolius	American ginseng		WL	G3G4	S3
Perideridia americana	eastern eulophus		SE	G4	S1
Persicaria careyi	Carey's smartweed		ST	G4	S2
Phemeranthus rugospermus	prairie fame-flower		SE	G3G4	S1
Pinus banksiana	jack pine		ST	G5	S3
Pinus strobus	eastern white pine		ST	G5	S3
Plantago cordata	heart-leaved plantain		SE	G4	S1
Platanthera aquilonis	leafy northern green orchid		ST	G5	S2
Platanthera ciliaris	yellow-fringe orchid		SE	G5	S1
Platanthera flava var. herbiola	pale green orchid		WL	G4?T4Q	S3
Platanthera hookeri	Hooker's orchid		SX	G4	SX
Platanthera lacera	green-fringe orchid		WL	G5	S3
Platanthera leucophaea	eastern prairie white-fringed orchid	T	SE	G2G3	S1
Platanthera psycodes	small purple-fringe orchid		ST	G5	S3

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Indiana County Endangered, Threatened and Rare Species List

DNR
Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Pogonia ophioglossoides	rose pogonia		WL	G5	S3
Polygonum articulatum	eastern jointweed		ST	G5	S3
Polytaenia nuttallii	prairie parsley		SE	G5	S1
Populus balsamifera	balsam poplar		SE	G5	S1
Potamogeton pulcher	spotted pondweed		ST	G5	S2
Potamogeton pusillus	slender pondweed		WL	G5	S2
Potamogeton richardsonii	redheadgrass		ST	G5	S3
Potamogeton robbinsii	flatleaf pondweed		ST	G5	S3
Potamogeton strictifolius	straight-leaf pondweed		ST	G5	S2
Potentilla anserina	silverweed		ST	G5	S2
Prenanthes aspera	rough rattlesnake-root		ST	G4?	S3
Prunus pensylvanica	fire cherry		ST	G5	S3
Pyrola americana	American wintergreen		ST	G5	S2
Rhus aromatica var. arenaria	beach sumac		ST	G5T3Q	S3
Rhynchospora macrostachya	tall beaked-rush		ST	G4	S3
Rhynchospora recognita	globe beaked-rush		SE	G5?	S1
Rhynchospora scirpoides	long-beaked baldrush		ST	G4	S3
Rorippa aquatica	lake cress		SE	G4?	S1
Rubus setosus	small bristleberry		SE	G5	SU
Salix cordata	heartleaf willow		SE	G4	S1
Sceptridium rugulosum	ternate grape-fern		SX	G3	SX
Schoenoplectiella hallii	Hall's bulrush		SE	G3	S1
Schoenoplectiella purshiana	weakstalk bulrush		ST	G4G5	S3
Schoenoplectiella smithii	Smith's Bulrush		ST	G5?	S2
Schoenoplectus subterminalis	water bulrush		ST	G5	S3
Schoenoplectus torreyi	Torrey's Bulrush		SE	G5?	S1
Scleria pauciflora	fewflower nutrush		WL	G5	S3
Scleria reticularis	reticulated nutrush		ST	G4	S2
Selaginella apoda	meadow spike-moss		WL	G5	S1
Selaginella rupestris	ledge spike-moss		SE	G5	S1
Shepherdia canadensis	Canada buffalo-berry		SX	G5	SX
Sisyrinchium montanum	strict blue-eyed-grass		SE	G5	S1
Solidago hispida	hairy goldenrod		WL	G5	S3
Solidago simplex var. gillmanii	sticky goldenrod		ST	G5T3?	S2
Solidago speciosa	showy goldenrod		WL	G5	SU
Sparganium androcladum	branching bur-reed		ST	G4G5	S2
Sparganium natans	small bur-reed		SX	G5	SX
Spiranthes lucida	shining ladies'-tresses		ST	G4	S3
Spiranthes magnicamporum	Great Plains ladies'-tresses		SE	G3G4	S2S3
Strophostyles leiosperma	slick-seed wild-bean		WL	G5	S3

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Indiana County Endangered, Threatened and Rare Species List

DNR Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Stuckenia filiformis ssp. occidentalis	slender pondweed		SE	G5T5	SU
Styrax americanus	American snowbell		ST	G5	S3
Symphyotrichum boreale	rushlike aster		ST	G5	S2
Symphyotrichum sericeum	western silvery aster		ST	G5	S2
Thuja occidentalis	northern white cedar		SE	G5	S1
Triantha glutinosa	false asphodel		ST	G5	S2S3
Trichostema dichotomum	forked bluecurl		WL	G5	S3
Triglochin palustris	marsh arrow-grass		ST	G5	S2
Utricularia cornuta	horned bladderwort		SE	G5	S1
Utricularia intermedia	flatleaf bladderwort		WL	G5	S3
Utricularia minor	lesser bladderwort		ST	G5	S1
Utricularia purpurea	purple bladderwort		ST	G5	S3
Utricularia resupinata	northeastern bladderwort		SE	G4	S1
Utricularia subulata	zigzag bladderwort		ST	G5	S2
Vaccinium myrtilloides	velvetleaf blueberry		SE	G5	S1
Valerianella chenopodiifolia	goose-foot corn-salad		WL	G4	S3
Viburnum opulus var. americanum	highbush-cranberry		SE	G5T5	S1
Viola pedatifida	prairie violet		ST	G5	S2
Viola primulifolia	primrose-leaf violet		ST	G5	S3
High Quality Natural Community					
Forest - floodplain wet	Wet Floodplain Forest		SG	G3?	S3
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry Northwestern Morainal	Northwestern Morainal Dry Upland Forest		SG	GNR	S1
Forest - upland dry-mesic Northwestern Morainal	Northwestern Morainal Dry-mesic Upland Forest		SG	GNR	S1
Forest - upland mesic Northwestern Morainal	Northwestern Morainal Mesic Upland Forest		SG	GNR	S1
Lake - pond	Pond		SG	GNR	SNR
Prairie - dry-mesic	Dry-mesic Prairie		SG	G3	S2
Prairie - mesic	Mesic Prairie		SG	G2	S2
Prairie - sand dry	Dry Sand Prairie		SG	G3	S2
Prairie - sand dry-mesic	Dry-mesic Sand Prairie		SG	G3	S3
Prairie - sand mesic	Mesic Sand Prairie		SG	GNR	SNR
Prairie - sand wet	Wet Sand Prairie		SG	G3	S3
Prairie - sand wet-mesic	Wet-mesic Sand Prairie		SG	G1?	S2
Prairie - wet	Wet Prairie		SG	G3	S1
Primary - dune lake	Foredune		SG	G3	S1
Savanna - mesic	Mesic Savanna		SG	GNR	SNR
Savanna - sand dry	Dry Sand Savanna		SG	G2?	S2
Savanna - sand dry-mesic	Dry-mesic Sand Savanna		SG	G2?	S2S3

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Indiana County Endangered, Threatened and Rare Species List

Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Savanna - sand mesic	Mesic Sand Savanna		SG	GNR	SNR
Wetland - fen	Fen		SG	G3	S3
Wetland - marsh	Marsh		SG	GU	S4
Wetland - meadow sedge	Sedge Meadow		SG	G3?	S1
Wetland - panne	Panne		SG	G2	S1
Wetland - swamp shrub	Shrub Swamp		SG	GU	S2
Other Significant Feature					
Migratory Bird Concentration Area	Migratory Bird Concentration Site		SG	G3	SNRM

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APPENDIX D. WATER WELL RECORDS

Record of Water Well

1

Indiana Department of Natural Resources

Reference Number **Driving directions to well** **Date completed**

10686

Owner-Contractor	**Name**	**Address**	**Telephone**
Owner	HARBISON WALKER CO		
Driller	S.B. GEIGER CO		

Construction Details

Well	**Use:** Industry	**Drilling method:**	**Pump type:**
	Depth: 1830.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:** 160.0	**Material:**	**Diameter:** 12.0
Screen	**Length:**	**Material:**	**Diameter: Slot size:** 8 OPEN HOLE

Well Capacity Test **Type of test:** **Test rate:** 300.0 gpm for 1.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 52.0 ft. **Static water level:** 142.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the NE of Section 28 **Topo map:** WHITING
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: 2500.0 **Ft N of SL:** **Ft E of WL:** **Ft S of NL:** 850.0
Ground elevation: 590.0 **Depth to bedrock:** 154.0 **Bedrock elevation:** 436.0 **Aquifer elevation:**
UTM Easting: 461595.0 **UTM Northing:** 4609355.0

Well Log

Top	Bottom	Formation
0.0	20.0	SAND
20.0	40.0	GRAY QUICKSAND
40.0	154.0	CLAY
154.0	640.0	GRAY LIMESTONE (SILURIAN)
640.0	770.0	GRAY SHALE (ORDOVICIAN)
770.0	1100.0	GRAY LIMESTONE
1100.0	1345.0	SANDSTONE(ORD. CAMBRIAN)
1345.0	1530.0	RED LAYERED SANDSTONE
1530.0	1550.0	LIMESTONE
1550.0	1560.0	SANDSTONE
1560.0	1570.0	LIMESTONE & QUARTZ (CHERT?)

1570.0	1620.0	LIMESTONE & SOME FRACTURES
1620.0	1820.0	SANDSTONE
1820.0	1830.0	GRAY SHALE

Comments SEE ALSO #10691

1

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
10691	KENNEDY AVE. AT 143 ST (EXT) E. CHICAGO, IN	Jan 01, 1929

Owner-Contractor	Name	Address	Telephone
Owner	HARBISON & WALKER		
Driller	S.B. GEIGER CO.		

Construction Details

Well	**Use:** Industry	**Drilling method:**	**Pump type:**
	Depth: 1830.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:** 160.0	**Material:**	**Diameter:** 12.0
Screen	**Length:** 8.0	**Material:**	**Diameter: Slot size:**

Well Capacity Test

Type of test: **Test rate:** 350.0 gpm for 2.0 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 52.0 ft. **Static water level:** 142.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the NE of Section 28 **Topo map:** WHITING
Grant Number:
Field located by: USGS **on:** Jan 01, 1957
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: 2500.0 **Ft N of SL:** **Ft E of WL:** **Ft S of NL:** 850.0
Ground elevation: 590.0 **Depth to bedrock:** 154.0 **Bedrock elevation:** 436.0 **Aquifer elevation:**
UTM Easting: 461595.0 **UTM Northing:** 4609355.0

Well Log

Top	Bottom	Formation
0.0	20.0	DRY SAND
20.0	40.0	GRAY QUICKSAND
40.0	154.0	CLAY
154.0	640.0	GRAY LIME
640.0	770.0	GRAY SHALE
770.0	1100.0	GRAY LIME
1100.0	1345.0	ST PETER SS
1345.0	1530.0	RED RK W/LAYER SS 2'-4' THICK
1530.0	1550.0	LIME
1550.0	1560.0	SAND
1560.0	1570.0	LIME QUARTZ

1570.0	1620.0	LIME AND BREAKS
1620.0	1820.0	POTTSDAM SAND(GALESVILLE-BP)
1820.0	1830.0	GRAY SHALE(EAU CLAIRE-BP 1980)

Comments CASED: 800-970FT; 1530-1725FT; SKETCH MAP INCLUDED SEE ALSO #10686

2

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413870	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2008

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test

Type of test: **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2005
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 585.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 566.0
UTM Easting: 461006.0 **UTM Northing:** 4610021.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

3

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413842	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2008
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 581.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 562.0
UTM Easting: 461001.0 **UTM Northing:** 4610209.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND W/SILT

Comments

Record of Water Well

4

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413862	FROM INTERSTATES 80 E OR W TAKE EXIT #2 INDIANAPOLIS LBVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON L (N)	Jul 31, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Jul 31, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 578.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 559.0
UTM Easting: 461001.0 **UTM Northing:** 4610220.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413917	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 583.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 563.0
UTM Easting: 461004.0 **UTM Northing:** 4610220.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED BROWN SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413890	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLEPLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 589.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 570.0
UTM Easting: 461006.0 **UTM Northing:** 4610221.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND W/SILT

Comments

Record of Water Well

7

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413854	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:**	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test

Type of test: **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 584.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 565.0
UTM Easting: 461007.0 **UTM Northing:** 4610227.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413913	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD. N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON LEFT (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVIT **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 585.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 566.0
UTM Easting: 461003.0 **UTM Northing:** 4610235.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED BROWN SAND TRACE SILT

Comments

Record of Water Well

9

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
8317		Nov 12, 1986

Owner-Contractor	Name	Address	Telephone
Owner	NORTHERN INDIANA DOCK CO.	3601 CANAL ST, EAST CHICAGO, IN 46312	
Driller	JOHN FARMER & SONS WELL & PUMP	9703 KENNEDY AVENUE, HIGHLAND, IN 46322	
Operator	EVERETT W. FARMER	License: null	

Construction Details

Well	**Use:** Other	**Drilling method:** Rotary	**Pump type:**
	Depth: 35.0	**Pump setting depth:**	**Water quality:** CLEAR
Casing	**Length:** 25.0	**Material:**	**Diameter:** 8.0
Screen	**Length:** 10.0	**Material:**	**Diameter:** 8.0 **Slot size:** .013

Well Capacity Test **Type of test:** Pumping **Test rate:** 20.0 gpm for 2.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 17.0 ft. **Static water level:** 8.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative **County:** LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: JRN **on:** Jul 23, 1993
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** 1900.0 **Ft E of WL:** 500.0 **Ft S of NL:**
Ground elevation: 587.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 552.0
UTM Easting: 460928.3 **UTM Northing:** 4610212.0

Well Log

Top	Bottom	Formation
0.0	35.0	SAND

Comments TALKED TO THE PLANT MANAGER. THE WELL IS LOCATED IN ANOTHER BUILDING. IT IS NOT NOW IN USE.

Record of Water Well

10

Indiana Department of Natural Resources

Reference Number **Driving directions to well** **Date completed**

10743

Owner-Contractor	**Name**	**Address**	**Telephone**
Owner	US GYPSUM CO	3501 CANAL E CHICAGO	

Construction Details

Well	**Use:**	**Drilling method:** Other	**Pump type:**
	Depth: 97.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:**	**Material:**	**Diameter:**
Screen	**Length:**	**Material:**	**Diameter: Slot size:**

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the SW of the NW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: JRN **on:** Aug 23, 1993
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** 50.0 **Ft S of NL:** 2350.0
Ground elevation: 585.0 **Depth to bedrock:** 95.0 **Bedrock elevation:** 490.0 **Aquifer elevation:**
UTM Easting: 460770.0 **UTM Northing:** 4610497.0

Well Log

Top	Bottom	Formation
0.0	36.0	SAND
36.0	82.0	BLUE CLAY
82.0	85.0	HARDPAN
85.0	88.0	QUICKSAND
88.0	95.0	HARDPAN
95.0	97.0	LIMESTONE

Comments NO GPS, 8/23/93 JRN, TALKED TO A GENTLEMAN NAMED VERN WHO SAID THAT THE WELL WAS LOCATED ON THE SE CORNER OF THE PROPERTY, NEAR THE CANAL, IN AN AREA THAT IS NOT ACCESSIBLE.

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
393018	NORTH ON RT 41 TO 133RD AVE. WEST ON 133RD AVE. 1 BLOCK TO WOODMAR. SOUTH ON WOODMAR TO FOUR-PLEX ON WEST SIDE OF WOODMAR. WOODMAR CEDAR LAKE, IN 4630	Nov 11, 2005

Owner-Contractor	Name	Address	Telephone
Owner	MJM PROPERTIES C/O JESSE GEBER	11504 W 134TH CT APT C CEDAR LAKE, IN	(219) 374-2450
Driller	SHEEHY WELL & PUMP CO INC	PO BOX 606 15530 WICKER AVE CEDAR LAKE, IN	(219) 696-0455
Operator	TOM SHEEHY	License: 1641	
Company	RICE CONSTRUCTION		

Construction Details

Well	**Use:** Home	**Drilling method:** Rotary	**Pump type:** Submersible
	Depth: 133.0	**Pump setting depth:** 100.0	**Water quality:** CLEAR
Casing	**Length:** 129.0	**Material:** PVC	**Diameter:** 4.0
Screen	**Length:** 5.0	**Material:** PVC	**Diameter:** 4.0 **Slot size:** .008

Well Capacity Test

Type of test: Air **Test rate:** 20.0 gpm for 1.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 0.0 ft. **Static water level:** ft. **Bailer Drawdown** ft.

Grouting Information

Material: BENTONITE SLURRY **Depth:** from 0.0 to 70.0
Installation Method: PUMPING **Number of bags used:** 3.0

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: NE of Section 29 **Topo map:** ST. JOHN
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:**
UTM Easting: **UTM Northing:**

Well Log

Top	Bottom	Formation
0.0	22.0	YELLOW CLAY
22.0	45.0	GRAY CLAY
45.0	60.0	SAND
85.0	122.0	FINE SAND
122.0	135.0	SAND
135.0	138.0	FINE SAND

Comments FIRST WELL ON PROPERTY

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
9942	144TH & RAILROAD ST.	Feb 26, 1984

Owner-Contractor	Name	Address	Telephone
Owner	BLAW-KNOW FOUNDRY	EAST CHICAGO, ILL	
Driller	LAYNE-NORTHERN	MISHAWAKA, IN	
Operator	DON SNYDER	License: null	

Construction Details

Well	**Use:** Industry	**Drilling method:** Rotary	**Pump type:**
	Depth: 30.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:**	**Material:**	**Diameter:** 12.75
Screen	**Length:** 15.0	**Material:**	**Diameter:** 12.0 **Slot size:** .012

Well Capacity Test **Type of test:** **Test rate:** 25.0 gpm for 1.0 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 15.0 ft. **Static water level:** 5.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SE of the NE of Section 29 **Topo map:** WHITING
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:**
UTM Easting: **UTM Northing:**

Well Log

Top	Bottom	Formation
0.0	12.0	FILL
12.0	30.0	FINE SILTY SAND

Comments GRAVEL WALL WELL NO. 11.

APPENDIX E. SITE INVESTIGATION REPORT

SITE INVESTIGATION REPORT

Former Oil Storage Tank Area > Osharai Indiana Site
4323 Kennedy Ave., East Chicago, IN 46312
Site # 6211101

Prepared For:
Indiana Department of Environmental Management
Voluntary Remediation Program
Indianapolis, Indiana

Prepared By:
Douglas L. Abeln R.G. – Managing Consultant

TRINITY CONSULTANTS
16252 Westwoods Business Park Dr.
Ellisville, MO 63021
636-256-5643

August 2, 2022

222601.0094

Trinity Consultants

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Registered Geologist Certification Statement

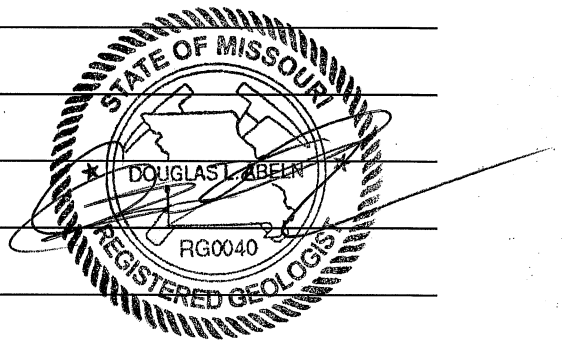
I certify that I have examined the Site Investigation Report for the Former Oil Storage Tank Area at the Osharai Indiana Site located at 4323 Kennedy Avenue, East Chicago, Illinois.

The certification is required pursuant to Part II of the Voluntary Remediation Agreement relating to Osharai Indiana Site #621101. Based on the information obtained, I certify that the site investigation activities were performed in accordance with the approved Investigation Work Plan dated April 6, 2022.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date: August 2, 2022

Signature:



Name (printed): Douglas L. Abeln, R.G.

Title: Engineering Manager

Registered Geologist No: RG0040

Company: Trinity Consultants

1. INTRODUCTION

Tradebe Environmental Services, LLC (Tradebe) on behalf of Osharai Indiana, entered into the Indiana Department of Environmental Management's (IDEMs), Voluntary Remediation Program (VRP) upon receiving an executed Voluntary Remediation Agreement (VRA), entered into by and between IDEM and Osharai Indiana dated January 12, 2022, and assigned Site # 6211101.

Trinity Consultants (Trinity) prepared an Investigation Work Plan for the site as a means to collect current soil and groundwater data from a prior Oil Storage Tank Area at the Osharai Indiana site, formerly the Marport Smelting Facility, located at 4323 Kennedy Avenue in East Chicago, Indiana. The Investigation Work Plan was submitted to IDEM on February 28, 2022. IDEM reviewed the submitted work plan and subsequently approved the work plan with comments in a letter dated April 1, 2022. Trinity revised the work plan to address the comments provided by IDEM and submitted a Revised Investigation Work Plan to IDEM on April 6, 2022 which was approved by Mr. Nick Daily-Hill of IDEM via email on April 22, 2022.

The following sections detail the investigation activities performed on May 17, 2022, and presents the analytical results obtained as a result of implementation of the approved work plan and recommendations for steps.

1.1 Objectives of the Site Investigation

The objectives of the Site Investigation Work Plan were as follows:

- Conduct a follow up investigation to assess current site conditions with respect to previously identified soil and groundwater contamination near the former above ground Fuel Oil Storage Tank Secondary Containment Area.
- Characterize the extent and magnitude of any actual or potential soil or groundwater contamination.
- Collect data of sufficient quality that it will be possible to compare detected constituent concentrations to IDEMs 2022 Remediation Closure Guide (RCG) Screening Level Table A-6.

1.2 Purpose of the Site Investigation Report

The purpose of this document is to describe the investigation activities conducted as part of the approved Site Investigation Work Plan and to present the analytical results obtained compared to IDEM RCG Screening Levels.

2. SITE BACKGROUND

2.1 Site Location and History

2.1.1 Facility Name & Address

- Osharai Indiana
  4323 Kennedy Avenue
  East Chicago, Indiana 46312

2.1.2 Facility Description

The Site is located at 4323 Kennedy Avenue, in the 3rd District of the city of east Chicago, in Lake County Indiana. The property is on the east side Kennedy Avenue between Chicago Avenue and Columbus Avenue.

The Site can also be described as encompassing nearly 8 acres located in the Southwest Quarter of the Northeast Quarter of Section 28, Township 37 North, Range 9 West, Lake County, Indiana. The location of the Site is shown on Figure 1 that overlays an excerpt from the United States Geologic Survey (USGS) Topographic Map, Whiting Quadrangle, 1988.

The Indiana Harbor Canal is approximately one-half mile west of the Site. The Canal connects the Grand Calumet River, approximately one and one-quarter miles to the south and the Indiana Harbor of Lake Michigan, located about two and one-half miles to the northeast of the Site. The immediate area of the site is light to heavy industrial and manufacturing, industrial waste management, and transportation (rail) use. The surficial geology in this area is man-made, being composed of fill materials that often include sand, slag, refuse, cinders, brick fragments, and other industrial byproducts.

Currently, no manufacturing, storage, or commercial operations are being conducted on the property, with the exception of a 10-Day transfer facility operated by Tradebe. The transfer facility operation only includes the parking of trucks in commerce. The former manufacturing building was recently raised and only the building foundations and slab concrete floors remain on the premises. Prior to the recent demolition of the building, all equipment and raw materials were removed. Demolition debris and waste generated during the demolition of the Osharai Indiana site was transported and disposed of at various disposal facilities including Republic Landfill, US Ecology and Tradebe.

2.1.3 Site Map

A site location map is presented as Figure 1. A surrounding area map is presented as Figure 2.

2.1.4 Site History Summary

Most of the former plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. City directories indicated that Harbison Walker Refractories continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on information obtained from a previous Phase I ESA Report, the US Reduction Company purchased the Site in the 1970s and operated it for aluminum smelting. Marport Smelting Co. began secondary aluminum smelting operations at the Site in 1985. Another company, Portage Alloys, Inc. appears at the Marport smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the Site has

not been in use since. Recently, the existing buildings on the Site were demolished and currently only the building footings and concrete slab floors and pads remain.

2.1.5 Contamination Discovery Overview

A Phase I ESA was performed on the Site in May of 2005 by Andrews Engineering, which identified several areas of concern or recognized environmental conditions (RECs) associated with the subject property. Subsequently, Andrews Engineering performed a Phase II ESA to assess whether the RECs identified in the Phase I ESA had negatively impacted the Site. Results of the Phase II ESA indicated that a release of petroleum was identified in the area west of the plant building and adjacent to the former concrete, AST fuel oil tank containment area. A second Phase II ESA, also performed by Andrews Engineering, was performed in 2010, to further delineate the signs of petroleum contamination, identified in the 2005 Phase II ESA. Results of this Phase II ESA indicated that a release of petroleum was identified in the area west of the former plant building and adjacent to the former 120,000 gallon fuel oil tank, concrete containment area. Exceedances of Industrial RISC standards for TPH/GRO were noted in the soil and groundwater in this area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 8,590 mg/kg have been detected in soils surrounding the former fuel oil tank containment area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 7.7 mg/L have been detected in the shallow groundwater in the area of the former fuel oil tank containment area.

2.1.6 Summary of Phase II ESA Results

Summaries from the previously conducted Phase II ESAs at the Site are presented below:

- Phase II Environmental Site Assessment Report, Former Marport Smelting Co. Site. (Andrews Engineering, 2005).

  "Andrews has performed a Phase II ESA at the Site, that consisted of drilling (15) Geoprobe borings to determine or define subsurface conditions at eleven (11) selected locations or areas. The boring locations were selected in order to broadly evaluate potential impacts from the historical industrial operations on and near the Site. The borings were also located in areas to determine the general depth and continuity of saturated soils at the Site. In addition, three (3) surface material samples were taken of exposed materials inside of the plant structure on the Site.

  No groundwater samples were obtained from the uppermost saturated soil zone during this Phase II ESA and, therefore, these conclusions do not address that media.

  Based on observations and analytical results from the soil borings and surface samples, the Site subsurface is in markedly good condition considering the nature of the historical fill materials emplaced in the area and the long industrial use of the property and the vicinity. The sample analytical results indicate several instances of elevated PAHs or metals on the property, but these are not consistent across the site or at levels of concern. The historical use of the Site (refractory manufacturer and secondary aluminum smelting) has undoubtedly contributed to the identification of PAHs and several metals in the site soils from the raw materials, coal, and other fossil fuel used over the years. However, solvents, other volatile or semi-volatile organic compounds, or inorganic materials common to other types of manufacturing uses were not found in the subsurface soils on the site.

  One (1) definite release of petroleum was identified in the area west of the plant building and adjacent to the former concrete tank containment area. The subsurface plume appears to head to

the east and was not fully defined, but groundwater impact is likely based on the sample results and physical observations during the soil borings.

Additionally, care should be taken in disturbing the surface materials (fine particulates or dust) covering much of the interior surfaces of the structure. Direct contact with the apparent baghouse dusts should be minimized and the materials should be wetted or collected using High Efficiency Particulate Air (HEPA) filters to prevent the material becoming respirable. This material, based on the results from Sample MEC-1, should also be characterized prior to any disposal using the TCLP test method for lead and cadmium."

- Phase II Environmental Site Assessment Report, Thunderbird Real Estate (Former Marport Smelting Facility). (Andrews Engineering, 2010).

  "Nineteen soil borings were advanced in order to characterize soil and groundwater quality surrounding the former boring MS-4. The soils consisted of sandy fill that is saturated within 2 to 4 feet of ground surface.

  Soil results indicate that none of the RCRA metals exceed RISC default residential default levels. In addition, TPH/GRO from all sampling locations and depths are well below their respective RISC non-default residential closure levels. Exceedances of industrial RISC standards were limited to locations immediately adjacent to former boring MS-4. Borings beyond those distances had either no detections or were below RISC standards.

  Groundwater samples were obtained from AEI-1, immediately adjacent to MS-4 and from the furthest borings from MS-4 in each direction. All sample results were below detection limits for BTEX compounds and TPH/GRO. Exceedances of the Industrial RISC standard for TPH/HEO occurred at locations AEI-1 (immediately adjacent to MS-4) and 1N3. There were exceedances of the industrial RISC default level for lead at AEI-1 and 1N3, but these results are ambiguous due to the presence of entrained sediment as evidenced by high turbidity readings."

2.1.7 IDEM Voluntary Remediation Program Summary

Tradebe on behalf of Osharai Indiana, entered into the Indiana Department of Environmental Management's (IDEMs), Voluntary Remediation Program (VRP) upon receiving an executed Voluntary Remediation Agreement (VRA), entered into by and between IDEM and Osharai Indiana dated January 12, 2022, and assigned Site # 6211101.

Trinity prepared an Investigation Work Plan for the site as a means to collect current soil and groundwater data from a prior Oil Storage Tank Area at the Osharai Indiana site, formerly the Marport Smelting Facility, located at 4323 Kennedy Avenue in East Chicago, Indiana. The Investigation Work Plan was submitted to IDEM on February 28, 2022. IDEM reviewed the submitted work plan and subsequently approved the work plan with comments in a letter dated April 1, 2022. Trinity revised the work plan to address the comments provided by IDEM and submitted a Revised Investigation Work Plan to IDEM on April 6, 2022 which was approved by Mr. Nick Daily-Hill of IDEM via email on April 22, 2022. Trinity implemented the Revised Site Investigation Work Plan on May 17, 2022.

2.2 Site Documentation

2.2.1 Previous Reports

A number of reports documenting subsurface investigations and contamination assessments have been completed for the Osharai Indiana Site. These assessments and sampling events have included:

- Phase I Environmental Site Assessment Report, Former Marport Smelting Co. Site, East Chicago, Indiana, prepared for Pollution Control Industries, Inc. (Andrews Engineering, May 2005).
- Phase II Environmental Site Assessment Report, Former Marport Smelting Co. Site, East Chicago, Indiana, prepared for Pollution Control Industries, Inc. (Andrews Engineering, May 2005).
- Phase II Environmental Site Assessment Report, Former Marport Smelting Facility, East Chicago, Indiana, prepared for Tradebe Pollution Control Industries, Inc. (Andrews Engineering, April 2010).

3. FIELD INVESTIGATION ACTIVITIES

In an effort to assess current site conditions with respect to previously identified soil and groundwater contamination near the former above ground Fuel Oil Storage Tank Secondary Containment Area, Trinity conducted the following investigation activities at the Osharai Indiana site. The following sections detail the scope of work implemented to collect subsurface soil samples, background soil samples and shallow groundwater samples.

Field investigation activities were conducted on May 17, 2022. A photographic log of the field activities is presented in Appendix A while Appendix B contains Logs of Test Borings.

3.1 Subsurface Soil Sampling and Analysis

3.1.1 Sampling Locations, Depths, and Frequency

Fourteen probe holes were advanced within and around the former Fuel Oil Tank Containment Area. These probes were advanced to a depth of 8 feet bgs. Soils from the probeholes were screened with a Photo Ionization Detector (PID) for indications of organic vapors. One soil sample was collected from the interval exhibiting the highest PID reading. If no PID readings were detected, the soil sample was collected from the interval immediately above the soil saturated zone. The approximate probehole locations are shown on Figure 3. Probe hole locations were placed near and surrounding previously advanced borings from Phase II Site Investigations conducted in 2005 and 2010 which exhibited petroleum hydrocarbon contamination.

It should be noted that four of the probe hole locations were advanced to a deeper depth, approximately 12-16 feet bgs and temporary monitoring wells were installed as described in Section 3.3.

3.1.2 List of Equipment

Probehole advancement was performed utilizing a Geoprobe® GH 41 unit equipped with four foot continuous stainless steel rods and replaceable inner core sleeves. A MiniRae Photo Ionization Detector was be used to screen soils.

3.1.3 Description of Sampling Procedures

Sampling procedures followed are described in detail within the QAPP (Appendix A) of the Revised Investigation Work Plan. A summary of the sampling procedure is presented as follows.

Probeholes were advanced and sampled continuously throughout the entire depth. Upon retrieval, the sampler was opened and physical observations were recorded on a boring log. Portions of each sampled interval were placed in a Ziplock bag, allowed several minutes to volatilize, and screened with a PID. PID measurements and corresponding depths were recorded on the boring log.

One soil sample was collected from the soil interval exhibiting the highest PID reading in each probe hole. If no PID reading was detected, the soil sample was collected from the soil interval immediately above the soil saturated zone. Samples were placed in clean, laboratory-provided containers; sealed; labeled; and stored in an iced chest. Samples were delivered under chain of custody to Pace Laboratory for testing. Upon completion of the sample collection activities, the probe hole was backfilled with hand-fed medium grade bentonite chips and hydrated. The concrete surface area was also be repaired.

3.1.4 Target Parameters and Analytical Methods

Subsurface soils were analyzed for:

- PAHs – Method SW 846 8270 SIM
- VOCs – Method SW 846 8260

3.2 Background Soil Sampling and Analysis

3.2.1 Sampling Locations, Depths, and Frequency

Three background probeholes were advanced in an area in close proximity to the former Fuel Oil Tank Containment Area, but at locations that would not have been impacted by former operations. These probes were advanced to a depth of 8 feet bgs. Soils from the probeholes were screened with a PID for indications of organic vapors. One composite soil sample was collected from each of the probe holes. The approximate background probehole locations are shown on Figure 3.

3.2.2 List of Equipment

Probehole advancement was performed utilizing a Geoprobe® GH 41 unit equipped with four-foot continuous stainless steel rods and replaceable inner core sleeves. A MiniRae Photo Ionization Detector was be used to screen soils.

3.2.3 Description of Sampling Procedures

Sampling procedures followed are described in detail within the QAPP (Appendix A) of the Revised Investigation Work Plan. A summary of the sampling procedure is presented as follows.

Probeholes were advanced and sampled continuously throughout the entire depth. Upon retrieval, the sampler was opened and physical observations were recorded on a boring log. Portions of each sampled interval were placed in a ziplock bag, allowed several minutes to volatilize, and screened with a PID. PID measurements and corresponding depths were recorded on the boring log.

One composite soil sample was collected from the soil interval exhibiting the highest PID reading in each probe hole. If no PID reading is detected, the soil sample was collected from the soil interval immediately above the soil saturated zone. Samples were placed in clean, laboratory-provided containers; sealed; labeled; and stored in an iced chest. Samples were delivered under chain of custody to Pace Laboratory for testing. Upon completion of the sample collection activities, the probe hole was backfilled with hand-fed medium grade bentonite chips and hydrated. The concrete surface area was also be repaired.

3.2.4 Target Parameters and Analytical Methods

Background subsurface soils were analyzed for:

- PAHs – Method SW 846 8270 SIM
- VOCs – Method SW 846 8260

3.3 Shallow Groundwater Sampling and Analysis

3.3.1 Installation and Development of Shallow Groundwater Wells

Four temporary shallow groundwater monitoring wells were installed around the former Fuel Oil Tank Containment Area at probehole locations PH 04, PH 06, PH 12, and PH 15. Probeholes were advanced a minimum of ten feet below the top of the saturated soil zone to ensure enough sample water was available for laboratory analysis. The depth of the temporary monitoring wells were from 12 -16 bgs. Each temporary groundwater monitoring well was constructed of 1-inch, # 10 slot screen- SCH 40 PVC inserted into the probe hole.

3.3.2 Sample Locations, Depth, and Frequency

The temporary shallow groundwater monitoring wells were located approximately as indicated on Figure 3. Shallow groundwater samples were collected from each of the temporary shallow groundwater monitoring wells. Prior to obtaining groundwater samples, the temporary shallow groundwater monitoring wells were allowed to sit until the static water level stabilized. One shallow groundwater samples was collected from each temporary groundwater well.

3.3.3 Description of Sampling Procedure

Sampling procedures to be followed are described in detail within the QAPP (Appendix A) of the Revised Investigation Work Plan. A summary of the sampling procedure is presented as follows.

Groundwater samples were collected from the temporary shallow groundwater monitoring wells using a peristaltic pump with new Teflon tubing. Prior to sample collection, the static groundwater level was measured from the top of the monitoring well to the nearest 0.01 foot.

Samples were placed in clean, laboratory-provided containers; sealed, labeled; and stored in an iced chest. Samples were delivered under chain of custody to Pace Analytical laboratory for testing.

3.3.4 Target Parameters and Analytical Methods

Shallow groundwater samples will be analyzed for:

- PAHs – Method SW 846 8270 SIM
- VOCs – Method SW 846 8260

4. SITE HYDROLOGY

4.1 Lithology and Occurrence of Groundwater

The strata encountered during the investigation activities were similar to the sequence described by Andrews Environmental Engineering, Inc. as presented in previous investigations performed in 2005 and 2010. Beneath approximately six inches of concrete and three to four inches of gravel, was approximately six to twenty-four inches of black coke ash fill, underlain by a fine, well-graded, loose sand with occasional pebbles and gravel till termination of the probehole. Boring logs are presented in Appendix B. Based on well logs from borings in the surrounding area, the subsurface lithology consists of fill material of various thickness or gray sand to a depth of 40 feet bgs followed by clay material until a limestone bedrock formation is encountered approximately 154 feet bgs.

In addition to characterization of the subsurface stratigraphy, an effort to determine the presence and continuity of groundwater at the site was made. Groundwater at the temporary monitoring wells was measured at depths between 3.59 to 4.40 feet bgs. Because the temporary monitoring wells were not survey in the actual gradient of the groundwater encountered during the investigation could not be made, however, the area of the temporary monitoring wells was relatively flat with no discernable elevation variation, it appears that the groundwater flow direction is to the northeast towards Lake Michigan. Based upon the observations made during the investigation and information provided in previous reports, it can be concluded that the groundwater encountered is relatively consistent across the site. The encountered groundwater during the investigation would indicate that the saturated zone begins at approximately 3.7-4.4 feet bgs.

4.2 Water Well Search

A water well search was conducted in an effort to identify water well records of all low-and high capacity wells within a one mile radius of the Osharai Indiana site. Water wells within a 1-mile radius of the Osharai Indiana site are presented on Figure 4. The water well search was conducted by accessing the Indiana Department of Natural Resources (IDNRs) Water Well Viewer database. A review of the data indicates the presence of sixteen (16) water wells being located within one mile of the Osharai Indiana site. Table 3 presents a summary of the water wells identified within the search radius and water well records are presented in Appendix C. In summary, there are four (4) Significant Withdraw Wells located at the Buckeyes Terminal LLC located to the northwest of the Osharai Indiana property. The Buckeyes Terminal site has multiple extraction wells ranging in depth from nineteen (19) to twenty-five (25) feet in depth extracting water at rates ranging from 75 to 148 gallons per minute. Conoco Phillips also located northwest of the Osharai Indiana site, is identified as having seven (7) shallow wells to a depth of nineteen (19) feet below ground surface (bgs). The nearest identified water well is located immediately to the north of the Osharai Indiana site and is registered to Harbison Walker Co. The well was installed in 1929 and is 1,830 feet deep and is believed to not currently be in use. All identified wells are used for process water purposes. There were no drinking water wells identified as the City of East Chicago has been providing drinking water to residences since 1918.

5. LABORATORY ANALYTICAL PROGRAM

Pace Analytical (Pace) laboratories of Mount Juliet, Tennessee, performed the laboratory analysis of the soil and groundwater samples that were obtained in accordance with the Revised Investigation Work Plan. Pace's work was performed in accordance with their QA/QC manual. Data validation was provided by Pace and is summarized in the Case Summary and Quality Control Summary Section of each analytical report.

During the field investigation, samples were collected in individual, clean, laboratory supplied containers appropriate for the sample matrix and analytical selection. As specified in the Revised Investigation Work Plan, samples collected as part of this investigation were analyzed for PAHs and VOCs.

The significance of potential released was evaluated by comparing the measured values to applicable screening criteria. These screening criteria include IDEMs 2022 Remediation Closure Guide (RCG) Screening Level Table A-6 and site background levels.

6. FIELD INVESTIGATION RESULTS

Analytical results for the investigation samples collected are presented in the Tables section of this report and are summarized in the following subsections. Complete analytical reports are provided in Appendix D. Investigation results for subsurface soil, background subsurface soil, and groundwater samples are presented by media and analytical suite in the following subsections.

6.1 Subsurface Soil Analytical Results

A total of fourteen subsurface soil samples were collected in the area of the Former Oil Storage Tank Area at sample depths between 1.5 to 3 feet bgs at locations depicted on Figure 3 were analyzed for VOC and PAH constituents. Subsurface soil sampling results are presented in Table 1. Constituent concentrations were compared to IDEMs 2021 Remediation Closure Guide (RCG) Screening Level Table A-6 concentrations and site background levels. No subsurface soil sampling location produced constituent concentrations that were above IDEM RCG Screening Levels.

6.1.1 Volatile Organic Constituents

Twenty-two VOC constituents were detected above the laboratory method detection limit (MDL). At least one VOC constituent was detected in every collected sample except sample PH 10 SOIL 1.5-2.25. The following presents a summary of the detected VOCs.

Acetone was detected in one collected sample (PH 16 SOIL 1.5-2.5) as a concentration of 0.181 mg/kg.

Benzene was detected in four collected samples: (PH 06 SOIL 1.5-2) 0.0036 mg/kg, (PH 07 SOIL 1-1.5) 0.000844 J mg/kg, (PH 08 SOIL 2.5-3) 0.0864 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0062 mg/kg.

n-Butylbenzene was detected in five collected samples: (PH 05 SOIL 1.5-2) 0.286 mg/kg, (PH 06 SOIL 1.5-2) 0.056 mg/kg, (PH 08 SOIL 2.5-3) 0.11 mg/kg, (PH 09 SOIL 2-2.5) 0.56 mg/kg and (PH 16 SOIL 1.5-2.5) 0.0218 mg/kg.

sec-Butylbenzene was detected in five collected samples: (PH 05 SOIL 1.5-2) 0.152 J mg/kg, (PH 06 SOIL 1.5-2) 0.0398 mg/kg, (PH 08 SOIL 2.5-3) 0.0741 mg/kg, (PH 09 SOIL 2-2.5) 0.348 mg/kg and (PH 16 SOIL 1.5-2.5) 0.0113 J mg/kg.

tert-Butylbenzene was detected in two collected samples: (PH 06 SOIL 1.5-2) 0.00343 J mg/kg and (PH 08 SOIL 2.5-3) 0.00465 J mg/kg.

Carbon Tetrachloride was detected in two collected samples: (PH 05 SOIL 1.5-2) 0.0237 J mg/kg and (PH 06 SOIL 1.5-2) 0.00306 J mg/kg.

Cis-1,2-Dichloroethene was detected in one collected sample (PH 16 SOIL 1.5-2) 0.013 mg/kg.

Ethylbenzene was detected in four collected samples: (PH 06 SOIL 1.5-2) 0.0214 mg/kg. (PH 07 SOIL 1-1.5) 0.00159 J mg/kg, (PH 08 SOIL 2.5-3) 0.0656 mg/kg.

Isopropylbenzene was detected in seven collected samples: (PH 05 SOIL 1.5-2) 0.193 mg/kg, (PH 06 SOIL 1.5-2) 0.0551 mg/kg, (PH 07 1-1.5) 0.0551 mg/kg, (PH 08 SOIL 2.5-3) 0.154 mg/kg, (PH 09 SOIL 2-2.5) 0.113 mg/kg, (PH 12 SOIL 1.5-2) 0.0842 J mg/kg, and (PH 12 SOIL 1.5-2.5) 0.0181 mg/kg.

p-Isopropyltoluene was detected in five collected samples: (PH 05 SOIL 1.5-2) 0.231 mg/kg, (PH 06 SOIL 1.5-2) 0.0743 mg/kg, (PH 07 SOIL 1-1.5) 0.00296 J mg/kg, (PH 08 SOIL 2.5-3) 0.169 mg/kg, and (PH 16 SOIL 1.5-2) 0.0281 mg/kg.

2-Butanone (MEK) was detected in ten collected samples: (PH 04 SOIL 1.5-2) 0.0871 J mg/kg, (PH 06 SOIL 1.5-2) 0.148 mg/kg, (PH 07 SOIL 1-1.5) 0.0656 J mg/kg, (PH 08 SOIL 2.5-3) 0.114 mg/kg, (PH 11 SOIL 2-2.5) 0.0804 J mg/kg, (PH 13 SOIL 2-2.5) 0.0871 J mg/kg, (PH 14 SOIL 1.5-2.5) 0.146 mg/kg, (PH 15 SOIL 1.5-2) 0.133 mg/kg, (PH 16 SOIL 1.5-2.5) 0.0952 J mg/kg, and (PH 17 1.5-2) 0.0925 J mg/kg.

Naphthalene was detected in seven collected samples: (PH 05 SOIL 1.5-2) 0.355 mg/kg, (PH 06 SOIL 1.5-2) 0.171 mg/kg, (PH 07 SOIL 1.5-2) 0.0257 mg/kg, (PH 08 SOIL 2.5-3) 0.513 mg/kg, (PH 09 SOIL 2-2.5) 0.265 mg/kg, (PH 12 SOIL 1.5-2) 0.194 J mg/kg, and (PH 16 Soil 1.5-2) 0.0198 mg/kg.

n-Propylbenzene was detected in seven collected samples: (PH 05 SOIL 1.5-2) 0.222 mg/kg, (PH 06 SOIL 1.5-2) 0.0538 mg/kg, (PH 07 SOIL 1.5-2) 0.00298 J mg/kg, (PH 08 SOIL 2.5-3) 0.125 mg/kg, (PH 09 SOIL 2-2.5) 0.201 mg/kg, (PH 12 SOIL 1.5-2) 0.617 J mg/kg, and (PH 16 Soil 1.5-2) 0.118 mg/kg.

1,1,2,2-Tetrachlorethane was detected in one sample (PH 13 SOIL 2-2.5) 0.299 mg/kg.

Tetrachloroethene was detected in two collected samples: (PH 06 SOIL 1.5-2 0.00806 mg/kg and (PH 07 SOIL 1-1.5) 0.0121 mg/kg.

Toluene was detected in five collected samples: (PH 06 SOIL 1.5-2) 0.0154 mg/kg, (PH 07 SOIL 1-1.5) 0.00632 mg/kg, (PH 08 SOIL 2.5-3) 0.498 mg/kg, (PH 13 SOIL 2-2.5) 0.00295 BJ mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0123 mg/kg.

1,1,2-Trichloroethane was detected in two collected samples: (PH 05 SOIL 1.5-2, 0.367 mg/kg and (PH 16 SOIL 1.5-2.5) 0.011 mg/kg.

Trichloroethene was detected in five collected samples: (PH 05 SOIL 1.5-2) 0.685 mg/kg, (PH 06 SOIL 1.5-2) 2.78 mg/kg, (PH 07 SOIL 1-1.5) 0.0101 mg/kg, (PH 12 SOIL 1.5-2) 0.100 mg/kg, and (PH 16 SOIL 0.0497 mg/kg.

1,2,4-Trimethylbenzene was detected in six collected soil samples: (PH 05 SOIL 1.5-2) 0.122 mg/kg, (PH 06 SOIL 1.5-2) 0.0847 mg/kg, (PH 07 SOIL 1-1.5) 0.0128 mg/kg, (PH 08 2.5-3) 0.620 mg/kg, (PH 09 2-2.5) 0.0661 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.125 mg/kg.

1,2,3-Trimethylbenzene was detected in six collected samples: (PH 05 SOIL 1.5-2) 0.389 mg/kg, (PH 06 SOIL 1.5-2) 0.139 mg/kg, (PH 07 SOIL 1-1.5) 0.00801 mg/kg, (PH 08 SOIL 2.5-3) 0.250 mg/kg, (PH 12 SOIL 1.5-2) 0.141 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.084 mg/kg.

1,3,5- Trimethylbenzene was detected in five collected samples: (PH 05 SOIL 1.5-2) 0.813 mg/kg, (PH 06 SOIL 1.5-2) 0.248 mg/kg, (PH 07 SOIL 1-1.5) 0.00904 mg/kg, (PH 08 SOIL 2.5-3) 0.305 mg/kg, and (PH 16 SOIL 1.5-2) 0.0909 mg/kg.

Total Xylenes were detected in eight collected samples: (PH 05 SOIL 1.5-2) 0.0244 BJ mg/kg, (PH 06 SOIL 1.5-2) 0.0648 mg/kg, (PH 07 SOIL 1-1.5) 0.0187 mg/kg, (PH 08 SOIL 2.5-3) 1.36 mg/kg, (PH 11 SOIL 2-2.5) 0.00151 BJ mg/kg, (PH 13 SOIL 2-2.5) 0.00590 BJ mg/kg (PH 15 SOIL 1.5-2) 0.000880 J mg/kg, and (PH 16 SOIL 0.0621 mg/kg.

6.1.2 PAH Constituents

Nineteen PHA constituents were detected above the laboratory method detection limit (MDL). At least one VOC constituent was detected in every collected sample except samples PH 04 SOIL 1.5-2 and PH 17 SOIL 1.5-2.0. The following presents a summary of the detected PAHs.

Anthracene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 0.418 mg/kg, (PH 06 SOIL 1.5-2) 0.0124 mg/kg, (PH 07 1-1.5) 0.28 mg/kg, (PH 08 SOIL 2.5-3) 0.186 mg/kg, (PH 09 SOIL 1.5-2) 1.12 mg/kg, (PH 10 SOIL 1.5-2.25) 0.00418 J mg/kg, (PH SOIL 12 1.5-2) 0.696 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0555 mg/kg.

Acenaphthene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 0.316 mg/kg, (PH 06 SOIL 1.5-2) 0.00968 mg/kg, (PH 07 1-1.5) 0.172 mg/kg, (PH 08 SOIL 2.5-3) 0.2 mg/kg, (PH 09 SOIL 1.5-2) 5.6 mg/kg, (PH 11 SOIL 1.5-2.25) 0.173 mg/kg, (PH SOIL 12 1.5-2) 1.39 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0309 mg/kg.

Acenaphthylene was detected in two samples: (PH 10 SOIL 1.5-2.25) 0.00230 J mg/kg and (PH 13 SOIL 2-2.6) 0.0351 J mg/kg.

Benzo(a)anthracene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 1.06 mg/kg, (PH 06 SOIL 1.5-2) 0.0373 mg/kg, (PH 07 1-1.5) 1.13 mg/kg, (PH 08 SOIL 2.5-3) 0.25 mg/kg, (PH 09 SOIL 1.5-2) 0.759 mg/kg, (PH 11 SOIL 2-2.5) 0.0125 mg/kg, (PH SOIL 12 1.5-2) 1.48 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.163 mg/kg.

Benzo(a)pyrene was detected in ten collected soil samples: (PH 05 SOIL 1.5-2) 0.612 mg/kg, (PH 06 SOIL 1.5-2) 0.0258 mg/kg, (PH 07 1-1.5) 0.780 mg/kg, (PH 08 SOIL 2.5-3) 0.126 mg/kg, (PH 09 SOIL 1.5-2) 0.578 mg/kg, (PH 11 SOIL 2-2.5) 0.00603 mg/kg, (PH SOIL 12 1.5-2) 0.0844 mg/kg, (PH 13 SOIL 2-2.5) 0.0596 J mg/kg, (PH 15 SOIL 1.5-2) 0.0133 mg/kg and (PH 16 SOIL 1.5-2.5) 0.125 mg/kg.

Benzo(b)fluoranthene was detected ten collected soil samples: (PH 05 SOIL 1.5-2) 0.824 mg/kg, (PH 06 SOIL 1.5-2) 0.0389 mg/kg, (PH 07 1-1.5) 1.14 mg/kg, (PH 08 SOIL 2.5-3) 0.152 mg/kg, (PH 09 SOIL 1.5-2) 0.446 mg/kg, (PH 11 SOIL 2-2.5) 0.00557 J mg/kg, (PH SOIL 12 1.5-2) 0.0577 mg/kg, (PH 13 SOIL 2-2.5) 0.0461 J mg/kg, (PH 15 SOIL 1.5-2) 0.00544 J mg/kg and (PH 16 SOIL 1.5-2.5) 0.16 mg/kg.

Benzo(g,h,i)perylene was detected in eleven collected samples: (PH 05 SOIL 1.5-2) 0.293 mg/kg, (PH 06 SOIL 1.5-2) 0.0302 mg/kg, (PH 07 1-1.5) 0.517 mg/kg, (PH 08 SOIL 2.5-3) 0.149 mg/kg, (PH 09 SOIL 1.5-2) 0.264 mg/kg, (PH 10 1.5-2.25) 0.0223 mg/kg, (PH 11 SOIL 2-2.5) 0.00412 J mg/kg, (PH SOIL 12 1.5-2) 0.0702 mg/kg, (PH 13 SOIL 2-2.5) 0.0500 J mg/kg, (PH 15 SOIL 1.5-2) 0.0695 mg/kg and (PH 16 SOIL 1.5-2.5) 0.0848 mg/kg.

Benzo(k)fluoranthene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 0.304 mg/kg, (PH 06 SOIL 1.5-2) 0.0121 mg/kg, (PH 07 1-1.5) 0.363 mg/kg, (PH 08 SOIL 2.5-3) 0.0372 mg/kg, (PH 09 SOIL 1.5-2) 0.0971 mg/kg, (PH SOIL 12 1.5-2) 0.00853 mg/kg, (PH 13 SOIL 2-2.5) 0.153 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.061 mg/kg.

Chrysene was detected in nine collected samples: (PH 05 SOIL 1.5-2) 0.931 mg/kg, (PH 06 SOIL 1.5-2) 0.0381 mg/kg, (PH 07 1-1.5) 1.15 mg/kg, (PH 08 SOIL 2.5-3) 0.179 mg/kg, (PH 09 SOIL 1.5-2) 0.677 mg/kg, (PH 11 SOIL 2-2.5) 0.0153 mg/kg, (PH SOIL 12 1.5-2) 0.185 mg/kg, (PH 13 SOIL 2-2.5) 0.0302 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.141 mg/kg.

Dibenzo(a,h)anthracene was detected in six collected samples: (PH 05 SOIL 1.5-2) 0.0951 mg/kg, (PH 06 SOIL 1.5-2) 0.00507 J mg/kg, (PH 07 1-1.5) 0.121 mg/kg, (PH 09 SOIL 1.5-2) 0.0688 mg/kg, (PH 13 SOIL 2-2.5) 0.531 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0185 mg/kg.

Fluoranthene was detected in ten collected samples: (PH 05 SOIL 1.5-2) 1.93 mg/kg, (PH 06 SOIL 1.5-2) 0.0738 mg/kg, (PH 07 1-1.5) 1.14 mg/kg, (PH 08 SOIL 2.5-3) 0.409 mg/kg, (PH 09 SOIL 1.5-2) 1.54 mg/kg, (PH 11 SOIL 2-2.5) 0.0416 mg/kg, (PH SOIL 12 1.5-2) 0.359 mg/kg, (PH 13 SOIL 2-2.5) 0.0380 J mg/kg, (PH 15 SOIL 1.5-2) 0.00409 J mg/kg and (PH 16 SOIL 1.5-2.5) 0.317 mg/kg.

Fluorene was detected in nine collected samples: (PH 05 SOIL 1.5-2) 0.288 mg/kg, (PH 06 SOIL 1.5-2) 0.00735 mg/kg, (PH 07 1-1.5) 0.11 mg/kg, (PH 08 SOIL 2.5-3) 0.279 mg/kg, (PH 09 SOIL 1.5-2) 7.19 mg/kg, (PH 11 SOIL 2-2.5) 0.294 mg/kg, (PH SOIL 12 1.5-2) 1.94 mg/kg, (PH 13 SOIL 2-2.5) 0.0625 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0296 mg/kg.

Indeno(1,2,3-cd)pyrene was detected in nine collected samples: (PH 05 SOIL 1.5-2) 0.367 mg/kg, (PH 06 SOIL 1.5-2) 0.0191 mg/kg, (PH 07 1-1.5) 0.569 mg/kg, (PH 08 SOIL 2.5-3) 0.0702 mg/kg, (PH 09 SOIL 1.5-2) 0.197 mg/kg, (PH 11 SOIL 2-2.5) 0.00277 J mg/kg, (PH 13 SOIL 2-2.5) 0.0433 J mg/kg, (PH 15 SOIL 1.5-2) 0.0117 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.0296 mg/kg.

Naphthalene was detected in nine collected samples: (PH 05 SOIL 1.5-2) 1.08 mg/kg, (PH 06 SOIL 1.5-2) 0.157 mg/kg, (PH 07 1-1.5) 0.232 mg/kg, (PH 08 SOIL 2.5-3) 0.886 mg/kg, (PH 09 SOIL 1.5-2) 5.44 mg/kg, (PH 11 SOIL 2-2.5) 0.00732 J mg/kg, (PH SOIL 12 1.5-2) 0.57 mg/kg, (PH 13 SOIL 2-2.5) 0.0493 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.218 mg/kg.

Phenanthrene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 4.73 mg/kg, (PH 06 SOIL 1.5-2) 0.232 mg/kg, (PH 07 1-1.5) 1.19 mg/kg, (PH 08 SOIL 2.5-3) 2.07 mg/kg, (PH 09 SOIL 1.5-2) 15.9 mg/kg, (PH SOIL 12 1.5-2) 8.21 mg/kg, (PH 13 SOIL 2-2.5) 0.114 J mg/kg, and (PH 16 SOIL 1.5-2.5) 0.482 mg/kg.

Pyrene was detected in ten collected samples: (PH 05 SOIL 1.5-2) 1.51 mg/kg, (PH 06 SOIL 1.5-2) 0.0683 mg/kg, (PH 07 1-1.5) 1.93 mg/kg, (PH 08 SOIL 2.5-3) 0.37 mg/kg, (PH 09 SOIL 1.5-2) 2.91 mg/kg, (PH 11 SOIL 2-2.5) 0.186 mg/kg, (PH SOIL 12 1.5-2) 1.33 mg/kg, (PH 13 SOIL 2-2.5) 0.081 mg/kg, (PH 15 SOIL 1.5-2) 0.0754 mg/kg and (PH 16 SOIL 1.5-2.5) 0.292 mg/kg.

1-Methylnaphthalene was detected in nine collected samples: (PH 05 SOIL 1.5-2) 1.77 mg/kg, (PH 06 SOIL 1.5-2) 0.209 mg/kg, (PH 07 1-1.5) 0.334 mg/kg, (PH 08 SOIL 2.5-3) 1.37 mg/kg, (PH 09 SOIL 1.5-2) 73 mg/kg, (PH 11 SOIL 2-2.5) 0.428 mg/kg, (PH SOIL 12 1.5-2) 25.2 mg/kg, (PH 13 SOIL 2-2.5) 0.154 mg/kg, and (PH 16 SOIL 1.5-2.5) 0.387 mg/kg.

2-Methylnaphthalene was detected in eight collected samples: (PH 05 SOIL 1.5-2) 2.11 mg/kg, (PH 06 SOIL 1.5-2) 0.259 mg/kg, (PH 07 1-1.5) 0.411 mg/kg, (PH 08 SOIL 2.5-3) 1.65 mg/kg, (PH 09 SOIL 1.5-2) 32 mg/kg, (PH 13 SOIL 2-2.5) 0.126 J mg/kg, (PH 15 SOIL 1.5-2) 0.0051 J mg/kg and (PH 16 SOIL 1.5-2.5) 0.469 mg/kg.

2-Chloronaphthalene was detected in one collected sample: (PH 13 SOIL 2-2.5) 0.185 J mg/kg.

6.2 Background Soil Analytical Results

A total of three background subsurface soil samples were collected on the Osharai Indiana property. The sample locations were determined to have been outside of the area of potential impact from the Former Oil

Storage Tank Area and were located to the north, southwest and south of the Former Oil Storage Tank Area at locations depicted on Figure 3. Background soil samples were collected from the soil interval immediately above the saturated soil interval and were analyzed for VOC and PAH constituents. Background subsurface soil sampling results are presented in Table 1. Constituent concentrations were compared to IDEMs 2021 Remediation Closure Guide (RCG) Screening Level Table A-6 concentrations and sample investigation results. No background subsurface soil sampling location produced constituent concentrations that were above IDEM RCG Screening Levels.

6.2.1 Volatile Organic Constituents

Eleven VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Acetone was detected in one collected sample (PH 01 SOIL 5-6) at a concentration of 0.221 mg/kg.

Isopropylbenzene was detected in one collected sample: (PH 03 SOIL 1.25-2.25) at a concentration of 0.00272 J mg/kg.

2-Butanone (MEK) was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.0936 J mg/kg.

n-Propylbenzene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00341 J mg/kg.

Tetrachloroethene was detected in two collected samples: (PH 02 SOIL 1.25-2.25) 0.0165 mg/kg and (PH 03 SOIL 1.25-2.25) 0.00497 mg/kg.

Toluene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00439 J mg/kg.

Trichloroethene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00265 mg/kg.

1,2,4-Trimethylbenzene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00540 J mg/kg.

1,2,3-Trimethylbenzene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00852 mg/kg.

1,3,5- Trimethylbenzene was detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00797 mg/kg.

Total Xylenes were detected in one collected sample (PH 03 SOIL 1.25-2.25) at a concentration of 0.00892 J mg/kg.

6.2.2 PAH Constituents

Thirteen PAH constituents were detected above the laboratory method detection limit (MDL). PAH constituents were only detected in sample PH 03 SOIL 1.25-2.25. The following presents a summary of the detected PAHs.

Anthracene was detected at a concentration of 0.00637 mg/kg.

Benzo(a)anthracene was detected at a concentration of 0.014 mg/kg.

Benzo(a)pyrene was detected at a concentration of 0.00590 J mg/kg.

Benzo(b)fluoranthene was detected at a concentration of 0.0062 mg/kg.

Benzo(g,h,i)perylene was detected at a concentration of 0.00456 J mg/kg.

Chrysene was detected at a concentration of 0.0156 mg/kg.

Fluoranthene was at a concentration of 0.0236 mg/kg.

Indeno(1,2,3-cd)pyrene was detected at a concentration of 0.0024 J mg/kg.

Naphthalene was detected at a concentration of 0.0150 J mg/kg.

Phenanthrene was detected at a concentration of 0.21 mg/kg.

Pyrene was detected in at a concentration of 0.0155 mg/kg.

1-Methylnaphthalene was detected at a concentration of 0.0523 mg/kg.

2-Methylnaphthalene was detected at a concentration of 0.0306 mg/kg.

6.3 Shallow Groundwater Analytical Results

A total of four shallow groundwater samples were collected in the area of the Former Oil Storage Tank Area at sample locations depicted on Figure 3. Shallow groundwater samples were analyzed for VOC and PAH constituents and laboratory results are presented in Table 2. Constituent concentrations were compared to IDEMs 2021 Remediation Closure Guide (RCG) Screening Level Table A-6 concentrations. Three shallow groundwater samples produced several PAH constituent concentrations that were above IDEM RCG Screening Levels for residential tap water.

6.3.1 Volatile Organic Constituents

Eleven VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Acetone was detected in one collected sample (PH 15 GW) at a concentration of 12.5 J ug/L.

Benzene was detected in all four collected samples: (PH 04 GW) 0.370 J ug/L, (PH 06 GW) 0.150 J ug/L, (PH 12 GW) 0.382 J ug/L, and (PH 15 GW) 0.112 J ug/L.

n-Butylbenzene was detected in one collected sample (PH 12 GW) at a concentration of 0.266 J ug/L.

sec-Butylbenzene was detected in one collected sample (PH 12 GW) at a concentrations of 0.257 J ug/L.

Isopropylbenzene was detected in one collected sample (PH 12 GW) at a concentration of 0.259 J ug/L.

2-Butanone (MEK) was detected in one collected sample (PH 04 GW) at a concentration of 3.50 J ug/L.

n-Propylbenzene was detected in one collected sample (PH 12 GW) at a concentration of 0.379 J ug/L.

Toluene was detected in one collected sample (PH 12 GW) at a concentration of 0.682 J ug/L.

Trichloroethene was detected in one collected sample (PH 06 GW) at a concentration of 0.649 J ug/L

1,2,3-Trimethylbenzene was detected in one collected sample (PH 12 GW) at a concentration of 0.272 J ug/L.

Xylenes, Total was detected in two collected soil samples: (PH 04 GW) 0.231 J ug/L, and (PH 12 GW) 0.660 J ug/L.

6.3.2 PAH Constituents

Eighteen PAH constituents were detected above the laboratory method detection limit (MDL). PAH constituents were detected in each sample collected. 2-Chloronaphthalene was the only PAH constituent not detected in any collected sample. The following presents a summary of the detected PAHs.

Anthracene was detected in three collected samples: (PH 06 GW) 1.02 ug/L, (PH 12 GW) 0.276 J ug/L, and (PH 15 GW) 0.0652 ug/L.

Acenaphthene was detected in three collected samples (PH 06 GW) 2.28 ug/L, (PH 12 GW) 4.42 ug/L, and (PH 15 GW) 0.095 ug/L.

Acenaphthylene was detected in one collected sample (PH 06 GW) at a concentration of 0.172 ug/L.

Benzo(a)anthracene was detected three collected samples: (PH 04 GW) 0.0384 J ug/L, (PH 06 GW) 3.3 ug/L, (PH 15 GW) 0.348 ug/L.

Benzo(a)pyrene was detected in two collected samples: (PH 06 GW) 3.51 J ug/L and (PH 15 GW) 0.343 ug/L.

Benzo(b)fluoranthene was detected in three collected samples: (PH 04 GW) 0.0500 J ug/L, (PH 06 GW) 5.38 ug/L, and (PH 15 GW) 0.557 ug/L.

Benzo(g,h,i)perylene was detected in three collected samples: (PH 04 GW) 0.0364 J ug/L, (PH 06 GW) 2.67 ug/L, and (PH 15 GW) 0.349 ug/L.

Benzo(k)fluoranthene was detected in two collected samples: (PH 06 GW) 1.98 J ug/L and (PH 15 GW) 0.195 ug/L.

Chrysene was detected in three collected samples: (PH 04 GW) 0.0426 J ug/L, (PH 06 GW) 3.55 ug/L, and (PH 15 GW) 0.353 ug/L.

Dibenzo(a,h)anthracene was detected in two collected samples: (PH 06 GW) 0.518 J ug/L, and (PH 15 GW) 0.0541 ug/l.

Fluoranthene was detected in three collected samples: (PH 04 GW) 0.0908 J ug/L, (PH 06 GW) 9.01 ug/L, and (PH 15 GW) 0.763 ug/L.

Fluorene was detected in three collected samples: (PH 06 GW) 1.27 ug/l, (PH 12 GW) 4.51 ug/L, and (PH 15 GW) 0.064 ug/l.

Indeno(1,2,3-cd)pyrene was detected in two collected samples: (PH 06 GW) 2.1 J ug/L, and (PH 15 GW) 0.308 ug/L.

Naphthalene was detected in three collected samples: (PH 06 GW) 1.29 ug/L, (PH 12 GW) 1.25 J ug/L, and (PH 15 GW) 0.222 J ug/L.

Phenanthrene was detected in three collected samples: (PH 06 GW) 6.82 ug/L, (PH 12 GW) 5.87 ug/L and (PH 15 GW) 0.572 ug/L.

Pyrene was detected in three collected samples: (PH 06 GW) 7.86 ug/L, (PH 12 GW) 0.924 ug/L and (PH 15 GW) 0.768 ug/L.

1-Methylnaphthalene was detected in three collected samples: (PH 06 GW) 7.51 ug/L, (PH 12 GW) 81.3 ug/L and (PH 15 GW) 0.361 ug/L.

2-Methylnaphthalene was detected in three collected samples: (PH 06 GW) 0.587 ug/L, (PH 12 GW) 3.42 ug/L and (PH 15 GW) 0.371 ug/L.

7. QUALITY ASSURANCE/QUALITYCONTROL

This project was performed in accordance with QA/QC specifications outlined in the approved Revised Investigation Work Plan. Specifically, the work plan outlined the collection of field QC samples, data verification, and analysis of data quality objectives based on precision, accuracy, representativeness, completeness, and comparability.

7.1 Field Control Samples

The Revised Quality Assurance Project Plan (QAPP) specified the number and location for the collection of field duplicates, field blanks, and rinsate blanks. The field blank consisted of distilled water samples collected for background comparison. Rinsate blanks consisted of distilled water used as a final rinse of decontamination sampling equipment to verify that decontamination procedures were performed properly. Analytical results for the collected field bland and rinsate blank are presented in Table 2. Field duplicate samples were of the matrix and location as identified. Duplicate sample results are presented in Table 1.

7.1.1 Field Blanks

One field blank sample was collected during field investigation activities and submitted for analytical testing. The field blank was collected while collecting sample PH 06 SOIL. Numerous constituents were detected above the laboratory MDL. Table 2 presents the constituents that were detected. It should be noted that no detected concentrations exceeded IDEM Screening Levels.

A review of the field blank sample results (FB 01) indicates that one VOC constituent was present in the collected sample. Chloroform was detected at a concentration of 0.145 J ug/L. Nine PAH constituents were detected in the collected sample as follows: Benzo(a)anthracene (0.0261 J ug/l), Benzo(a)pyrene (0.0257 J ug/L), Benzo(b)fluoranthene (0.0351 J ug/L), Benzo(g,h,i)perylene (0.0196 J ug/L), Chrysene (0.0248 J ug/L), Fluoranthene (0.0666 J ug/L), Indeno(1,2,3-cd)pyrene (0.0226 J ug/L), Phenanthrene (0.0403 J ug/L), and Pyrene (0.0556 J ug/L). The results of the field blank present the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results.

7.1.2 Rinsate Blanks

One rinsate blank was collected during field investigation activities and submitted for analytical testing. The sample was collected by rinsing a previously decontaminated sampling spoon which was utilized to collect soil from the sampling devise. One constituent was detected above the laboratory MDL. Table 2 presents the constituent which was detected. It should be noted that this constituent concentration did not exceed the IDEM Screening Level.

A review of the data indicates that Chloroform was the only detected constituent present in the rinsate blank. Chloroform was detected at a concentration of 0.119 J ug/L. The results of the rinsate sample indicate that the decontamination procedure was effective and that no residual constituent concentrations were introduced into the collected sample during the sample collection activity. The detected Chloroform concentration is likely associated with laboratory contamination as Chloroform is a common laboratory contaminant. It is also possible that the deionized water used to collect the rinsate sample may exhibit Chloroform. Chloroform was not detected in any soil or groundwater samples collected. Chloroform was only detected in QC samples that utilized distilled water.

7.1.3 Duplicate Samples

One duplicate soil sample was collected and submitted for analytical testing. DUP 01 SOIL was a duplicate sample of PH 02 SOIL 1.25-2.25. The duplicate sample results are presented in Table 1. DUP 01 SOIL produced detections of two VOC constituents (Acetone and Tetrachloroethene) while PH 02 SOIL 1.25-2.25 produced a detection of Tetrachloroethene while Acetone was below the laboratory MDL. An evaluation of this data indicates that these detected concentrations should be considered valid.

7.2 Field Control Samples

Matrix spike and matrix spike duplicate were analyzed for every batch of testing performed by the laboratory. The matrix spike/matrix spike duplicate results, as well as a narrative description of the method-specified calibrations and quality control performance criteria are contained in Appendix D.

7.2.1 Data Validation

The data generated for this project was reviewed utilizing procedures derived from the USEPA's Contract Laboratory Program (CLP), National Functional Guidelines for Organic Data Review, Multi-concentration, February 1993. The data review for this project included evaluation of the following:

- Holding times
- Matrix spike/matrix spike duplicate recoveries
- Duplicate precision
- Field and laboratory blank results

7.2.2 Data Quality Objectives

Data validation was used in an effort to evaluate if the data quality objectives (DQO) for field and laboratory measurements had been achieved. The DQO included considerations of precision, accuracy, completeness, representativeness, and comparability.

Precision quantifies the repeatability of a given measurement. Precision is estimated by calculating the Relative Percent Difference (RPD) of laboratory and field duplicates analytical results, as shown by the following equation:

$$RPD = \frac{Orginial - Duplicate}{(Original + Duplicate)/2} * 100$$

Laboratory accuracy refers to the percentage of a known amount of analyte recovered from a given matrix. The anticipated recovery of metals typically ranges between 75 to 125%. Percent recoveries for samples are estimated by the following equation:

$$R(\%) = \frac{(Spike\ Conc) - (Original)}{(Amount\ of\ Spike)} * 100$$

Completeness refers to the percentage of valid data received from actual testing performed in the laboratory. Completeness is calculated using the following equation:

$$Completeness = \frac{\#\ Valid\ Measurements}{Total\ \#\ Measurements} * 100$$

Comparability is the degree to which one data set can be compared to another. To ensure comparability, samples were taken at specified intervals and using similar sampling methodologies. In addition, the samples were analyzed at the laboratory within the required holding times and using accepted USEPA protocols.

Representativeness is the degree to which a sample or group of samples is indicative of the population being sampled. Over the course of the investigation, samples were collected in such a manner that they were representative of the chemical composition and physical state of the matrix at the time of sampling.

7.2.3 Qualification of Data Results

The analytical testing results for the tested analytes for the submitted samples were acceptable based on the fact that all method blanks for the associated batches met method specific criteria.

8. OBSERVATIONS

A summary of the Osharai Indiana Investigation Work Plan implementation observations is presented in the following subsections.

8.1 Subsurface Soil Observations

8.1.1 PH 04 SOIL 1.5-2

Analytical results from sample PH 04 Soil 1.5-2, which was located on the north side of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID readings were detected.
- Collected sample material consisted of tan sand immediately above the moist/saturated zone.
- One VOC constituent was detected above the laboratory MDLs. 2-Butanone (MEK) was detected at a concentration of 0.0871 J mg/kg, which is below the IDEM screening level of 28,000 mg/kg. 2-Butanone was also detected in background soil sample PH 03 SOIL 1.25-2.25.
- No PAH constituents were detected above laboratory MDLs.
- PH 04 unsaturated soil has not been impacted by operations associated with the former oil storage tank.

8.1.2 PH 05 SOIL 1.5-2

Analytical results from sample PH 05 Soil 1.5-2, which was located on the east side of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID readings were detected.
- Collected sample material consisted of black coke ash fill material immediately above the moist/saturated zone.
- Thirteen VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Seventeen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 05 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.3 PH 06 SOIL 1.5-2

Analytical results from sample PH 06 Soil 1.5-2, which was located on the southeast side of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. A PID reading (4.3 ppm) was detected from soil material in the saturated zone.

- Collected sample material consisted of black coke ash fill material immediately above the moist/saturated zone.
- Eighteen VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 2.78 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Seventeen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 06 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.4 PH 07 SOIL 1-1.5

Analytical results from sample PH 07 Soil 1-1.5, which was located approximately nineteen feet south of the southeast corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. A PID reading (1.8 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material immediately above the moist/saturated zone.
- Fourteen VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Seventeen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 07 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.5 PH 08 SOIL 2.5-3

Analytical results from sample PH 08 Soil 2.5-3, which was located approximately seven feet south of the southeast corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. A PID reading (47 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material immediately above the moist/saturated zone.

- Fifteen VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1.36 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Sixteen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 08 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.6 PH 09 SOIL 2-2.5

Analytical results from sample PH 09 Soil 2-2.5, which was located approximately seven feet south of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- A PID reading (16 ppm) was detected in the unsaturated soil of the probe hole. A PID reading (56 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and grey sand immediately above the moist/saturated zone.
- Six VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Seventeen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 09 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.7 PH 10 SOIL 1.5-2.25

Analytical results from sample PH 10 Soil 1.5-2.25, which was located immediately adjacent to the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. No PID reading was detected from soil material in the saturated zone.
- Collected sample material consisted of black sand immediately above the moist/saturated zone.
- No VOC constituents were detected above the laboratory MDLs.
- Three PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- PH 10 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected constituents are likely associated with the black coke ash fill material present immediately above the sampled black sand layer and are not associated with the former oil storage tank operations.

8.1.8 PH 11 SOIL 2-2.5

Analytical results from sample PH 11 Soil 2-2.5, which was located approximately twenty-three feet southwest of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- A PID reading (1.6 ppm) was detected in the unsaturated soil of the probe hole. A PID reading (0.1 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and grey black sand immediately above the moist/saturated zone.
- Two VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Twelve PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 11 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.9 PH 12 SOIL 1.5-2

Analytical results from sample PH 12 Soil 1.5-2, which was located approximately seven feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- A PID reading (20 ppm) was detected in the unsaturated soil of the probe hole. A PID reading (22.4 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and grey black sand immediately above the moist/saturated zone.
- Five VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Fourteen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 12 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.10 PH 13 SOIL 2-2.5

Analytical results from sample PH 13 Soil 2-2.5, which was located approximately twenty-five feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- A PID reading (7.3 ppm) was detected in the unsaturated soil of the probe hole. A PID reading (21.3 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and brown and black sand immediately above the moist/saturated zone.

- Four VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Sixteen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 13 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.11 PH 14 SOIL 1.5-2.5

Analytical results from sample PH 14 Soil 1.5-2.5, which was located approximately fifty feet southwest of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. No PID reading was detected from soil material in the saturated zone.
- Collected sample material consisted of tan sand immediately above the moist/saturated zone.
- One VOC constituent was detected above the laboratory MDLs. The detected constituent concentration was less than 1 mg/kg and was below the IDEM screening level.
- Sixteen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- No PAH constituents were detected above the laboratory MDLs.
- PH 14 unsaturated soil has not been impacted by operations associated with the former oil storage tank. The detected VOC constituent (MEK) is like a lab contaminant and not associated with the former oil storage tank operations.

8.1.12 PH 15 SOIL 1.5-2

Analytical results from sample PH 15 Soil 1.5-2, which was located approximately forty-seven feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- A PID reading (0.1) was detected in the unsaturated soil of the probe hole. No PID reading was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and tan and black sand immediately above the moist/saturated zone.
- Two VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Seven PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 13 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.13 PH 16 SOIL 1.5-2.5

Analytical results from sample PH 16 Soil 1.5-2.5, which was located approximately forty-seven feet south of the south side of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. A PID reading (6.6 ppm) was detected from soil material in the saturated zone.
- Collected sample material consisted of black coke ash fill material and tan sand immediately above the moist/saturated zone.
- Eighteen VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Detected VOC constituent concentrations are similar to VOC constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- Seventeen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected PAH constituent concentration are similar to PAH constituent concentrations detected in background sample PH 03 SOIL 1.25-2.25 which also consisted of black coke ash fill material.
- PH 16 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC and PAH constituents are associated with the black coke ash fill material present throughout the investigation area and are not associated with the former oil storage tank operations.

8.1.14 PH 17 SOIL 1.5-2

Analytical results from sample PH 17 Soil 1.5-2, which was located approximately sixty-three feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations:

- No PID reading was detected in the unsaturated soil of the probe hole. No PID reading was detected from soil material in the saturated zone.
- Collected sample material consisted of tan sand immediately above the moist/saturated zone.
- One VOC constituent was detected above the laboratory MDL. The detected constituent concentration was less than 1 mg/kg and was below the IDEM screening level.
- No PAH constituents were detected above laboratory MDLs.
- PH 17 unsaturated soil has not been impacted by operations associated with the former oil storage tank. Detected VOC The detected VOC constituent (MEK) is like a lab contaminant and not associated with the former oil storage tank operations.

8.2 Background Soil Observations

8.2.1 PH 01 SOIL 5-6

Analytical results from background sample PH 01 Soil 5-6, which was located on the south side of the property, as depicted on Figure 3, produced the following observations:

- No PID readings were detected.
- Collected sample material consisted of tan sand immediately above the moist/saturated zone.
- One VOC constituent was detected above the laboratory MDLs. Acetone was detected at a concentration below the IDEM screening level. Acetone is also a common laboratory contaminant.

- No PAH constituents were detected above laboratory MDLs.

8.2.2 PH 02 SOIL 1.25-2.25

Analytical results from background sample PH 02 Soil 1.25-2.25, which was located on the west side of the property, as depicted on Figure 3, produced the following observations:

- No PID readings were detected.
- Collected sample material consisted of tan sand immediately above the moist/saturated zone.
- One VOC constituent was detected above the laboratory MDLs. Tetrachloroethene was detected at a concentration of 0.0165 mg/kg which is below the IDEM screening level.
- No PAH constituents were detected above laboratory MDLs.

8.2.3 PH 03 SOIL 1.25-2.25

Analytical results from background sample PH 03 Soil 1.25-2.25, which was located on the north side of the property, as depicted on Figure 3, produced the following observations:

- No PID readings were detected.
- Collected sample material consisted of black coke ash fill material immediately above the moist/saturated zone.
- Ten VOC constituents were detected above the laboratory MDLs. All detected constituent concentration were less than 1 mg/kg and were all below the IDEM screening level of every detected constituent.
- Thirteen PAH constituents were detected above laboratory MDLs. All detected constituent concentrations were below the IDEM screening level.
- Detected VOC and PAH constituents are representative of constituents associated with coke ash which was the material sampled at this location and is also present throughout the entire property at various depths and thicknesses.

8.3 Shallow Groundwater Observations

8.3.1 PH 04 GW

Analytical results from the groundwater sample collected at PH 04, which was located to the north of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Three VOC constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Benzene (0.370 J ug/L), 2-Butanone (3.50 J ug/L) and total xylenes (0.231 J ug/L were detected.
- Detected VOC constituent concentrations are below IDEMs screening level for tap water.
- Five PAH constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Detected PAH concentrations were all less than 1 ug/L.
- Detected PAH constituents are below IDEMs screening level for tap water.
- Detected PAH constituents are representative of constituents associated with coke ash material that was used as fill material throughout the entire site.
- Every detected PAH constituent was also present in the field blank sample (FB 01), which indicates the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results.

8.3.2 PH 06 GW

Analytical results from the groundwater sample collected at PH 06, which was located to the east of the southeast corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Two VOC constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Benzene (0.150 J ug/L), and trichloroethene (0.649 J ug/L were detected.
- Detected VOC constituent concentrations are below IDEMs screening level for tap water.
- Thirteen PAH constituents were detected above the laboratory reporting limit. Five PAH constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Detected PAH concentrations ranged from 0.172 ug/L to 7.86 ug/L.
- Six detected PAH constituents are above IDEMs screening level for tap water. Benzo(a)anthracene exhibited a concentration of 3.3 ug/L exceeding the IDEM screening level of 0.3 ug/L. Benzo(a)pyrene exhibited a concentration of 3.51 J ug/L which exceeds the IDEM screening level of 1.8 ug/L. Benzo(b)fluoranthene exhibited a concentration of 5.38 ug/L which exceeds the IDEM screening level of 2.5 ug/L. Dibenzo(a,h)anthracene exhibited a concentration of 0.518 J ug/L which exceeds the IDEM screening level of 0.25 ug/L. Indeno(1,2,3-cd)pyrene exhibited a concentration of 2.61 J ug/L which exceeds the IDEM screening level of 2.5 ug/L and naphthalene exhibited a concentration of 1.29 ug/L which exceeds the IDEM screening level of 1.2 ug/L
- Detected PAH constituents are representative of constituents associated with coke ash material that was used as fill material throughout the entire site.
- Five of the six detected PAH constituents were also present in the field blank sample (FB 01), which indicates the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results.

8.3.3 PH 12 GW

Analytical results from the groundwater sample collected at PH 12, which was located approximately seven feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Eight VOC constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Benzene (0.382 J ug/L), n-Butylbenzene (0.266 J ug/L, sec-Butylbenzene (0.257 J ug/L, Isopropylbenzene (0.259 J ug/L), n-propylbenzene (0.379 J ug/L), Toluene (0.682 J ug/L), 1,2,3-Trimethylbenzene (0.272 J ug/L), and total Xylenes (0.231 J ug/L) were detected.
- Detected VOC constituent concentrations are below IDEMs screening level for tap water.
- Six PAH constituents were detected above the laboratory reporting limit. Two PAH constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Detected PAH concentrations ranged from 0.276 J ug/L to 81.3 ug/L ug/L.
- Two detected PAH constituents are above IDEMs screening level for tap water. Naphthalene exhibited a concentration of 1.25 J ug/L which exceeds the IDEM screening level of 1.2 ug/L, and 1-Methylnaphthalene exhibited a concentration of 81.3 ug/L which exceeds the IDEM screening level of 11 ug/L.
- Detected PAH constituents are representative of constituents associated with coke ash material that was used as fill material throughout the entire site.

8.3.4 PH 15 GW

Analytical results from the groundwater sample collected at PH 15, which was located approximately forty-seven feet south of the southwest corner of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Two VOC constituents were detected above the laboratory MDL but below the laboratory reporting limit and are considered an estimated value. Acetone (12.5 ug/L) and Benzene (0.112 J ug/L) were detected.
- Detected VOC constituent concentrations are below IDEMs screening level for tap water.
- Sixteen PAH constituents were detected above the laboratory reporting limit. One PAH constituent was detected above the laboratory MDL but below the laboratory reporting limit and is considered an estimated value. Detected PAH concentrations ranged from 0.064 ug/L to 0.768 ug/L.
- One detected PAH constituent was above the IDEM screening level for tap water. Benzo(a)anthracene exhibited a concentration of 0.348 ug/L which exceeds the IDEM screening level of 0.3 ug/L for tap water.
- Detected PAH constituents are representative of constituents associated with coke ash material that was used as fill material throughout the entire site.
- Nine of the seventeen detected PAH constituents were also present in the field blank sample (FB 01), which indicates the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results.

9. CONCLUSIONS

Tradebe has successfully implemented the approved Revised Investigation Work Plan for the Former Oil Storage Tank Area at the Osharai Indiana site in East Chicago, Indiana. Results of the investigation have been evaluated and have produced the following conclusions.

- Strata encountered during the investigation beneath the concrete and gravel layer consists of six to twenty-four inches of black coke ash fill material underlain by a fine-grained, loose sand with occasional pebbles and gravel.
- The uppermost water bearing strata at the Osharai Indiana site was encountered in a sand layer at a depth of 3.7-4.4 feet below ground surface.
- The unconfined shallow water bearing strata in and around the Osharai Indiana site is not utilized as a drinking water source.
- Several groundwater extraction wells are located within a one mile radius of the Osharai Indiana site. The groundwater extraction wells are located to the northwest of the Osharai Indiana site and the shallow extraction wells are hydraulically upgradient of the Osharai Indiana site. The nearest groundwater extraction well is located to the immediate north of the Osharai Indiana site, on the former Harbison Walker site and is 1,830 feet deep. The well is currently not in use.
- Soil samples were collected from the soil core interval which exhibited the highest PID reading, or if no PID reading was detected, was collected from the soil interval immediately above the moist/saturated zone of the boring. Soil samples were comprised of two material types; black coke ash fill material, and a black or tan fine grained sand.
- Detected soil VOC and PAH constituent detections were dependent on which material type was collected for analysis. Samples comprised of coke ash fill material exhibited detectable concentrations of VOC and PAH constituents in the low part per billion range and are representative of constituents historically associated with coke ash fill material. Samples comprised of sand material did not exhibit PAH constituents and only a few VOC constituents in the low part per billion range.
- Background soil sample PH 03 1.25-2.25, comprised of coke ash fill material, produced VOC and PAH constituent concentrations in the low parts per billion range and were similar to VOC and PAH constituent concentrations exhibited in samples collected around the Former Oil Storage Tank Area.
- All detected VOC and PAH constituent concentrations were below IDEM RCG Screening Levels as presented in Table A-6.
- Potential impact from site conditions is indicated by detections of PAH constituents in the FB 01 sample. The results of the field blank present the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results of both soil and water samples. Nine PAH constituents were detected above the laboratory MDL in the Field Blank sample. These constituents were also detected in many of the soil and groundwater samples as well.
- Detected soil concentrations are representative of the coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional soil characterization is necessary and no soil Remediation Work Plan is necessary as all detected VOC and PAH constituent concentrations are below IDEM RCG Screening Levels as presented in Table A-6.
- Groundwater samples were collected from four temporary monitoring wells surrounding the Former Oil Storage Tank Area. Detections of VOC constituents were below IDEM RCG Screening Levels as presented in Table A-6 in all four monitoring well samples. Various PAH constituents were detected in each of the four monitoring wells. The majority of PAH constituent concentrations were below IDEM RCG Screening

Levels as presented in Table A-6. Seven PAH constituent concentrations were detected slightly above the IDEM RCG Screening Level for Tap Water.

- Groundwater PAH constituent concentrations are ambiguous due to the presence of entrained sediment in the collected water samples from the temporary monitoring wells. Groundwater samples collected from temporary monitoring wells traditionally produce elevated concentrations due to entrained sediment, in this case, coke ash fill material.
- Detected groundwater concentrations are representative of shallow groundwater impacted by the use of coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional groundwater characterization is necessary, and no groundwater Remediation Work Plan is necessary as shallow groundwater in the East Chicago, Indiana area is not used for drinking water and the detected PAH concentrations are representative of background shallow groundwater in areas where coke ash fill material was placed.

10. RECOMMENDATIONS

Tradebe recommends, that since the Investigation Work Plan for the Osharai Indiana site did not produce results indicating that the Former Oil Storage Tank Area has not negatively impacted the soil and groundwater, that IDEM provide a Certificate of Completion to Tradebe followed by the issuance of Covenant Not to Sue from the Governor's office.

FIGURES

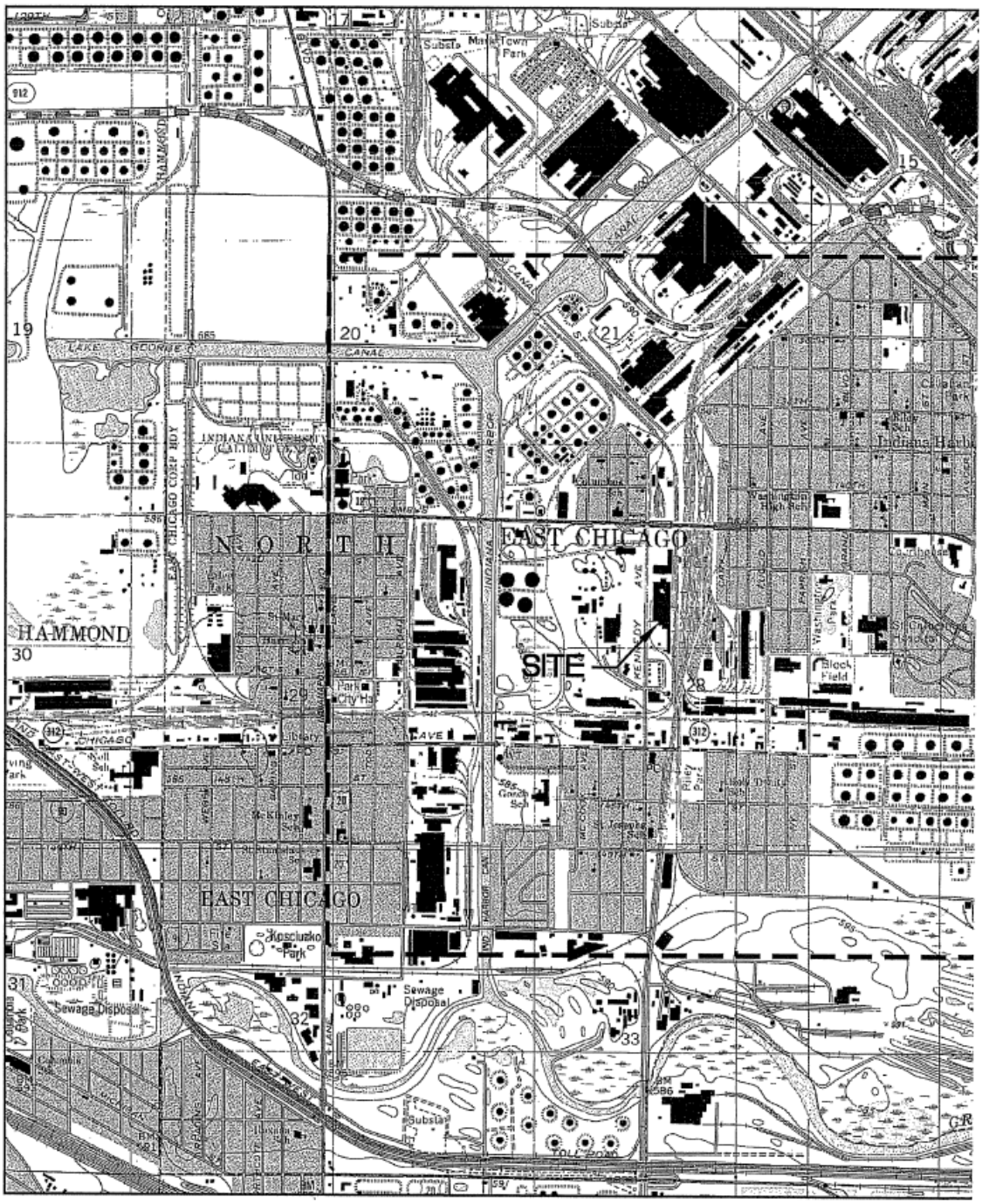


FIGURE 1

SITE LOCATION MAP

OSHARAI INDIANA SITE

FIGURE 2

AREA MAP

OSHARAI INDIANA SITE

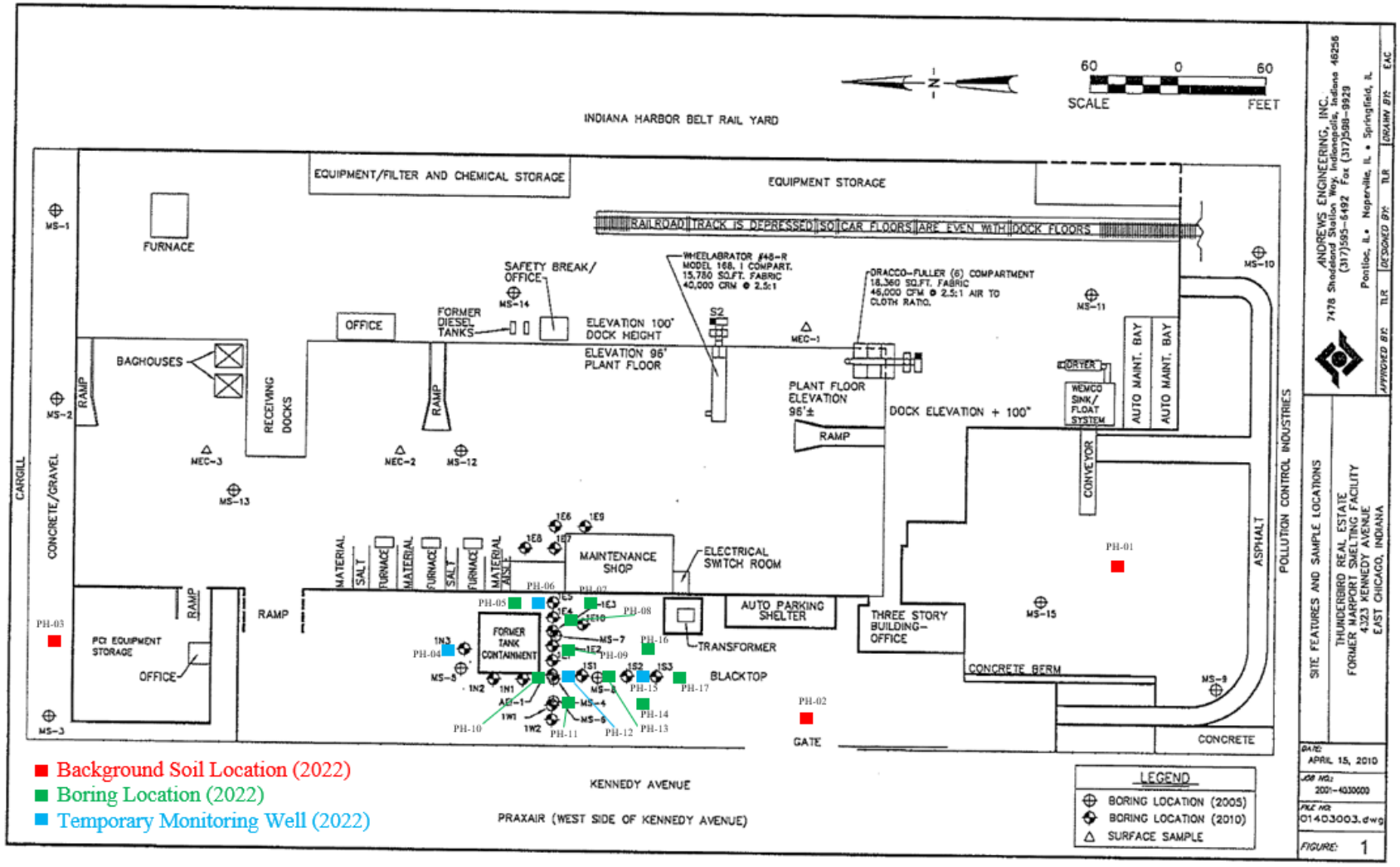


FIGURE 3
SAMPLE LOCATION MAP
OSHARAI INDIANA SITE

Trinity Consultants

Figure 4
Water Well Search Location Map
(1 Mile Radius) Osharai Indiana Site

TABLES

Table 1
Soil Results Summary

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID																	
			Background																	
			PH 01 Soil 5-6	PH 02 Soil 1.25-2.25	DUP 01	PH 03 Soil 1.25-2.25	PH 04 SOIL 1.5-2	PH 05 SOIL 1.5-2	PH 06 SOIL 1.5-2	PH 07 SOIL 1-1.5	PH 08 SOIL 2.5-3	PH 09 SOIL 2-2.5	PH 10 SOIL 1.5-2.25	PH 11 SOIL 2-2.5	PH 12 SOIL 1.5-2	PH 13 SOIL 2-2.5	PH 14 SOIL 1.5-2.5	PH 15 SOIL 1.5-2	PH 16 SOIL 1.5-2.5	PH 17 SOIL 1.5-2
VOCs 8260B	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acetone	100,000	0.0365	**0.221**	ND	**0.0732**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.181**	ND
Acrylonitrile		0.00361	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	51	0.000467	ND	ND	ND	ND	ND	ND	**0.0035**	**0.000844 J**	**0.0864**	ND	ND	ND	ND	ND	ND	ND	**0.00626**	ND
Bromobenzene		0.000900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.000725	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.00117	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.00197	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	110	0.00525	ND	ND	ND	ND	ND	**0.286**	**0.056**	ND	**0.11**	**0.56**	ND	ND	ND	ND	ND	ND	**0.0218**	ND
sec-Butylbenzene	150	0.00288	ND	ND	ND	ND	ND	**0.152 J**	**0.0398**	ND	**0.0741**	**0.348**	ND	ND	ND	ND	ND	ND	**0.0113 J**	ND
tert-Butylbenzene	180	0.00195	ND	ND	ND	ND	ND	ND	**0.00343 J**	ND	**0.00465 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	29	0.000898	ND	ND	ND	ND	ND	**0.0237 J**	**0.00306 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.000210	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.000612	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.00170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.00103	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.00435	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.000865	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.000450	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.00390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.000648	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.000750	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.000425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.000600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.000700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.00161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.000491	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.000649	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.000606	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2,300	0.000734	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.013**	ND
trans-1,2-Dichloroethene		0.00104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.00142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.000809	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.000501	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.000757	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.00114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.00138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	250	0.000737	ND	ND	ND	ND	ND	ND	**0.0214**	**0.00159 J**	**0.227**	ND	ND	ND	ND	ND	ND	ND	**0.0656**	ND
Hexachloro-1,3-butadiene		0.00600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.000425	ND	ND	ND	**0.00272 J**	ND	**0.193**	**0.0551**	**0.00191 J**	**0.154**	**0.113**	ND	ND	**0.0842 J**	ND	ND	ND	**0.0181**	ND
p-Isopropyltoluene	__	0.00255	ND	ND	ND	ND	ND	**0.231**	**0.0743**	**0.00296 J**	**0.169**	ND	ND	ND	ND	ND	ND	ND	**0.0281**	ND
2-Butanone (MEK)	28,000	0.0635	ND	ND	ND	**0.0936 J**	**0.0871 J**	ND	**0.148**	**0.0656 J**	**0.114**	ND	ND	**0.0804 J**	ND	**0.0871 J**	**0.146**	**0.133**	**0.0952 J**	**0.0925 J**
Methylene Chloride		0.00664	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.00228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.000350	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	86	0.00488	ND	ND	ND	ND	ND	**0.355**	**0.171**	**0.0257**	**0.513**	**0.265**	ND	ND	**0.617 J**	ND	ND	ND	**0.118**	ND
n-Propylbenzene	260	0.000950	ND	ND	ND	**0.00341 J**	ND	**0.222**	**0.0538**	**0.00298 J**	**0.125**	**0.201**	ND	ND	**0.194 J**	ND	ND	ND	**0.0198**	ND
Styrene		0.000229	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.000948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	27	0.000695	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.299**	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.000754	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	170	0.000896	ND	**0.0165**	**0.00904**	**0.00497**	ND	ND	**0.00806**	**0.0121**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	820	0.00130	ND	ND	ND	**0.00439 J**	ND	ND	**0.0154**	**0.00632**	**0.498**	ND	ND	ND	ND	**0.00295 BJ**	ND	ND	**0.0123**	ND
1,2,3-Trichlorobenzene		0.00733	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.00440	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.000923	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	6.3	0.000597	ND	ND	ND	ND	ND	**0.367**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.011**	ND
Trichloroethene	19	0.000584	ND	ND	ND	**0.00265**	ND	**0.685**	**2.78**	**0.0101**	ND	ND	ND	ND	**0.100**	ND	ND	ND	**0.0497**	ND
Trichlorofluoromethane		0.000827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.00162	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	220	0.00158	ND	ND	ND	**0.00540 J**	ND	**0.122**	**0.0847**	**0.0128**	**0.620**	**0.0661 J**	ND	ND	ND	ND	ND	ND	**0.125**	ND
1,2,3-Trimethylbenzene	290	0.00158	ND	ND	ND	**0.00852**	ND	**0.389**	**0.139**	**0.00801**	**0.250**	ND	ND	ND	**0.141 J**	ND	ND	ND	**0.084**	ND
1,3,5-Trimethylbenzene	180	0.00200	ND	ND	ND	**0.00797**	ND	**0.813**	**0.248**	**0.00904**	**0.305**	ND	ND	ND	ND	ND	ND	ND	**0.0909**	ND
Vinyl chloride		0.00116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	260	0.000880	ND	ND	ND	**0.00892 J**	ND	**0.0244 BJ**	**0.0648**	**0.0187**	**1.36**	ND	ND	**0.00151 BJ**	ND	**0.00590 BJ**	ND	**0.000880 J**	**0.0621**	ND
PAHs 8270 SIM																				
Anthracene	100,000	0.00230	ND	ND	ND	**0.00637**	ND	**0.418**	**0.0124**	**0.28**	**0.186**	**1.12**	**0.00418 J**	ND	**0.696**	ND	ND	ND	**0.0555**	ND
Acenaphthene	45,000	0.00209	ND	ND	ND	ND	ND	**0.316**	**0.00968**	**0.172**	**0.2**	**5.6**	ND	**0.173**	**1.39**	ND	ND	ND	**0.0309**	ND
Acenaphthylene	__	0.00216	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.00230 J**	ND	ND	**0.0351 J**	ND	ND	ND	ND
Benzo(a)anthracene	210	0.00173	ND	ND	ND	**0.014**	ND	**1.06**	**0.0373**	**1.13**	**0.25**	**0.759**	ND	**0.0125**	**0.148**	ND	ND	ND	**0.163**	ND
Benzo(a)pyrene	21	0.00179	ND	ND	ND	**0.00590 J**	ND	**0.612**	**0.0258**	**0.780**	**0.126**	**0.578**	ND	**0.00603**	**0.0844**	**0.0596 J**	ND	**0.0133**	**0.125**	ND
Benzo(b)fluoranthene	210	0.00153	ND	ND	ND	**0.0062**	ND	**0.824**	**0.0389**	**1.14**	**0.152**	**0.446**	ND	**0.00557 J**	**0.0577**	**0.0461 J**	ND	**0.00544 J**	**0.16**	ND
Benzo(g,h,i)perylene	__	0.00177	ND	ND	ND	**0.00456 J**	ND	**0.293**	**0.0302**	**0.517**	**0.149**	**0.264**	**0.0223**	**0.00412 J**	**0.0702**	**0.0500 J**	ND	**0.0695**	**0.0848**	ND
Benzo(k)fluoranthene	2,100	000215	ND	ND	ND	ND	ND	**0.304**	**0.0121**	**0.363**	**0.0372**	**0.0971**	ND	ND	**0.00853**	**0.153**	ND	ND	**0.061**	ND

Chrysene	21,000	0.00232	ND	ND	ND	**0.0156**	ND	**0.931**	**0.0381**	**1.15**	**0.179**	**0.677**	ND	**0.0153**	**0.185**	**0.0302 J**	ND	ND	**0.141**	ND
Dibenz(a,h)anthracene	21.0	0.00172	ND	ND	ND	ND	ND	**0.0951**	**0.00507 J**	**0.121**	ND	**0.0688**	ND	ND	ND	**0.0531 J**	ND	ND	**0.0185**	ND
Fluoranthene	30,000	0.00227	ND	ND	ND	**0.0236**	ND	**1.93**	**0.0738**	**2.38**	**0.409**	**1.54**	ND	**0.0416**	**0.359**	**0.0380 J**	ND	**0.00409 J**	**0.317**	ND
Fluorene	30,000	0.00205	ND	ND	ND	ND	ND	**0.288**	**0.00735**	**0.11**	**0.279**	**7.19**	ND	**0.294**	**1.94**	**0.0625**	ND	ND	**0.0296**	ND
Indeno(1,2,3-cd)pyrene	210	0.00181	ND	ND	ND	**0.0024 J**	ND	**0.367**	**0.0191**	**0.569**	**0.0702**	**0.197**	ND	**0.00277 J**	ND	**0.0433 J**	ND	**0.0117**	**0.0823**	ND
Naphthalene	86	0.00408	ND	ND	ND	**0.0150 J**	ND	**1.08**	**0.157**	**0.232**	**0.886**	**5.44**	ND	**0.00732 J**	**0.57**	**0.0493 J**	ND	ND	**0.218**	ND
Phenanthrene	__	0.00231	ND	ND	ND	**0.21**	ND	**4.73**	**0.232**	**1.91**	**2.07**	**15.9**	ND	ND	**8.21**	**0.114 J**	ND	ND	**0.482**	ND
Pyrene	23,000	0.00200	ND	ND	ND	**0.0155**	ND	**1.51**	**0.0683**	**1.93**	**0.37**	**2.91**	ND	**0.186**	**1.33**	**0.081**	ND	**0.0754**	**0.292**	ND
1-Methylnaphthalene	390	0.00449	ND	ND	ND	**0.0523**	ND	**1.77**	**0.209**	**0.334**	**1.37**	**73**	ND	**0.428**	**25.2**	**0.154**	ND	ND	**0.387**	ND
2-Methylnaphthalene	3,000	0.00427	ND	ND	ND	**0.0306**	ND	**2.11**	**0.259**	**0.411**	**1.65**	**32**	ND	ND	ND	**0.126 J**	ND	**0.0051 J**	**0.469**	ND
2-Chloronaphthalene	60,000	0.00466	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.185 J**	ND	ND	ND	ND

J = The identification of the analyte is acceptable; the reported value is an estimate.
B = The same analyte is found in the associated blank.
ND = Not Detected Above Laboratory MDL

Table 2
Groundwater Results Summary

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID					
			PH 04 GW	PH 06 GW	PH 12 GW	PH 15 GW	FB 01	RB 01
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	**12.5 J**	ND	ND
Acrylonitrile		2.54	ND	ND	ND	ND	ND	ND
Benzene	5	0.671	**0.370 J**	**0.150 J**	**0.382 J**	**0.112 J**	ND	ND
Bromobenzene		0.0941	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.118	ND	ND	ND	ND	ND	ND
Bromoform		0.136	ND	ND	ND	ND	ND	ND
Bromomethane		0.129	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.605	ND	ND	**0.266 J**	ND	ND	ND
sec-Butylbenzene	2,000	0.157	ND	ND	**0.257 J**	ND	ND	ND
tert-Butylbenzene		0.125	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.127	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.128	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.116	ND	ND	ND	ND	ND	ND
Chloroethane		0.140	ND	ND	ND	ND	ND	ND
Chloroform		0.192	ND	ND	ND	ND	**0.145 J**	**0.119 J**
Chloromethane		0.111	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.960	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.114	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.276	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		0.126	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene		0.149	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.142	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.110	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.111	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.161	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.105	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	**0.259 J**	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	**3.50 J**	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	**0.379 J**	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND
Tetrachloroethene		0.300	ND	ND	ND	ND	ND	ND
Toluene	1,000	0.278	ND	ND	**0.682 J**	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	ND	**0.649 J**	ND	ND	ND	ND
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	**0.272 J**	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	**0.231 J**	ND	**0.660 J**	ND	ND	ND
PAHs 8270 SIM								
Anthracene	1,800	0.0346	ND	**1.02**	**0.276 J**	**0.0652**	ND	ND
Acenaphthene	530	0.0346	ND	**2.28**	**4.42**	**0.095**	ND	ND
Acenaphthylene	__	0.0311	ND	**0.172**	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0369	**0.0384 J**	**3.3**	ND	**0.348**	**0.0261 J**	ND
Benzo(a)pyrene	1.8	0.0335	ND	**3.51 J**	ND	**0.343**	**0.0257 J**	ND
Benzo(b)fluoranthene	2.5	0.0306	**0.0500 J**	**5.38**	ND	**0.557**	**0.0351 J**	ND
Benzo(g,h,i)perylene	__	0.0335	**0.0364 J**	**2.67 J**	ND	**0.349**	**0.0196 J**	ND
Benzo(k)fluoranthene	25	0.0368	ND	**1.98 J**	ND	**0.195**	ND	ND
Chrysene	250	0.0326	**0.0426 J**	**3.55**	ND	**0.353**	**0.0248 J**	ND
Dibenz(a,h)anthracene	0.25	0.0291	ND	**0.518 J**	ND	**0.0541**	ND	ND
Fluoranthene	800	0.0491	**0.0908 J**	**9.01**	ND	**0.763**	**0.0666 J**	ND
Fluorene	290	0.0308	ND	**1.27**	**4.51**	**0.064**	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0288	ND	**2.61 J**	ND	**0.308**	**0.0226 J**	ND
Naphthalene	1.2	0.167	ND	**1.29**	**1.25 J**	**0.222 J**	ND	ND
Phenanthrene	__	0.0328	ND	**6.82**	**5.87**	**0.572**	**0.0403 J**	ND
Pyrene	120	0.0308	ND	**7.86**	**0.924**	**0.768**	**0.0556 J**	ND
1-Methylnaphthalene	11	0.125	ND	**7.51**	**81.3**	**0.361**	ND	ND
2-Methylnaphthalene	36	0.123	ND	**0.587**	**3.42**	**0.371**	ND	ND
2-Chloronaphthalene	750	0.124	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

ND = Not Detected Above Laboratory MDL

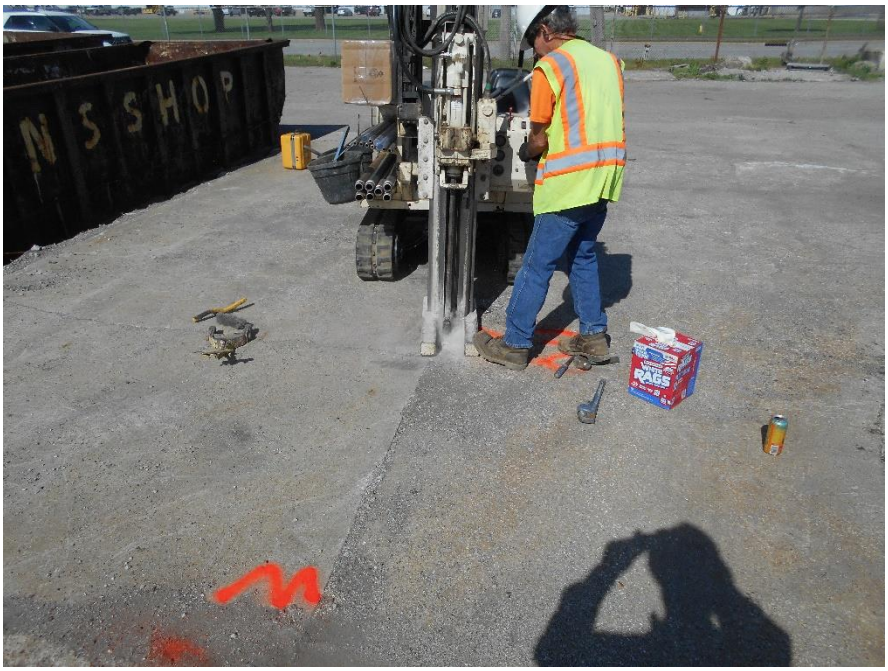
Concentration exceeds IDEM Screening Level for Tap Water

Table 3
Water Well Search Summary

Well Location ID #	Owner	Installation Date	Depth (ft)	Diameter (in)	Ground Elevation (MSL)	Water Elevation (MSL)
1	Harbison Walker Co.	1/1/1929	1,830	12	590	448
2	Conoco Phillips	8/2/2008	19	6	585	566
3	Conoco Phillips	8/2/2007	19	6	581	562
4	Conoco Phillips	7/31/2007	19	6	578	559
5	Conoco Phillips	8/1/2007	19	6	583	563
6	Conoco Phillips	8/2/2007	19	6	589	570
7	Conoco Phillips	8/1/2007	19	6	584	565
8	Conoco Phillips	8/1/2007	19	6	585.00000	566
9	Northern Indiana Dock Co.	11/12/1986	35	8	587	552
10	US Gypsum	-	97	-	585	-
11	MJM Properties	11/11/2005	133	4	-	-
12	BLAW - KNOW Founding	2/26/1984	30	12.75	-	-
13	Buckeye Pipeline Co	-	25	3	-	-
14	Buckeye Pipeline Co	-	19	6	-	-
15	Buckeye Pipeline Co	-	19	6	-	-
16	Buckeye Pipeline Co	-	19	6	-	-

APPENDIX A. PHOTOGRAPHIC LOG

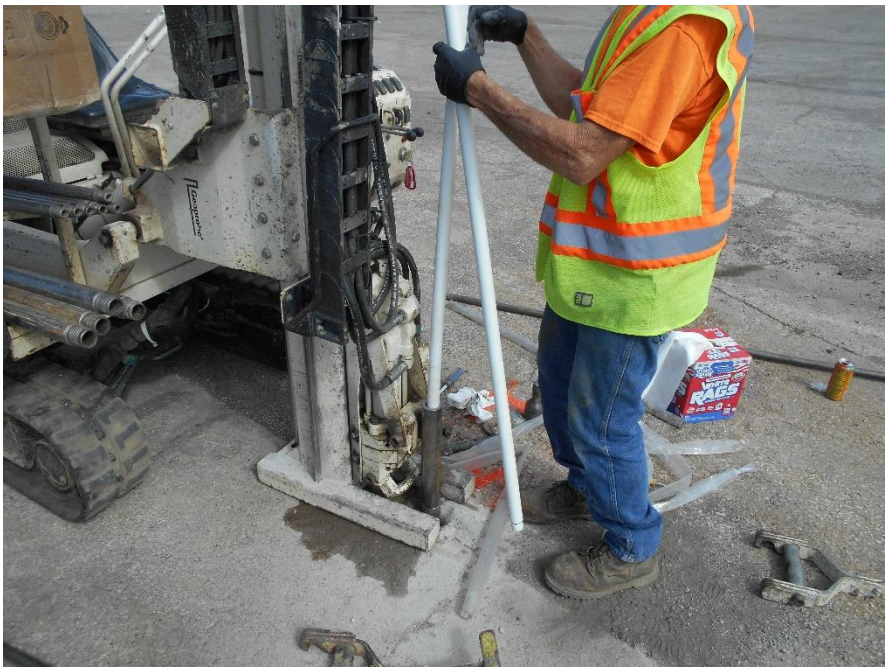
1. View of Geoprobe GH 41 unit



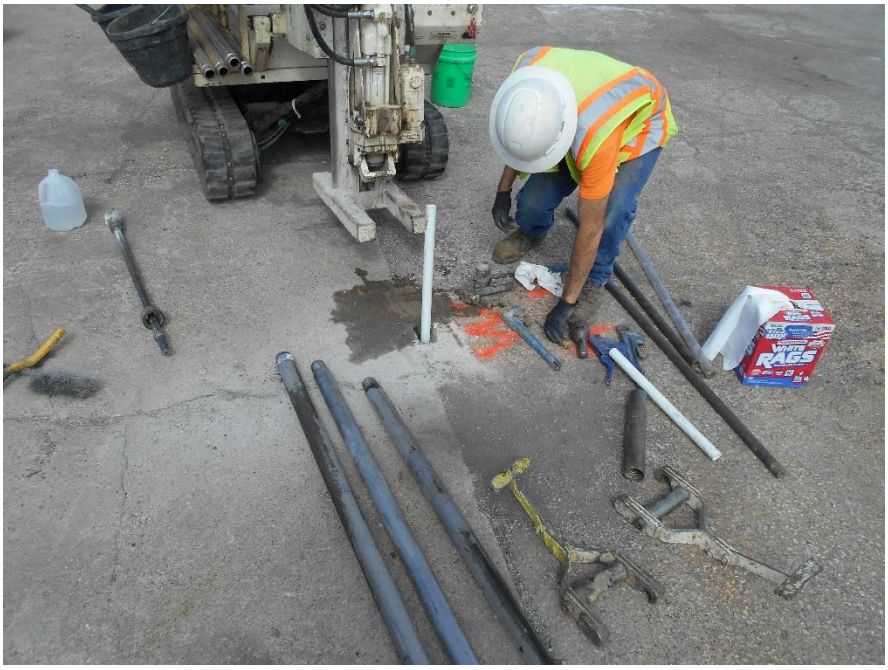
2. View of probe hole location PH 04

OSHARAI INDIANA SITE
4323 Kennedy Ave.
East Chicago, IN 46312

Trinity Consultants



3. Temporary monitoring well PVC Screen at PH 04



4. Temporary monitoring well at PH 04

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5. Soil cores from PH 04

6. View of probe hole location PH 06

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7. Soil cores from PH 06

8. View of probe hole PH 12

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9. Soil cores from PH 12

10. View of probe hole PH 15

11. Soil cores from PH 15

12. View of probe hole PH 17

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13. Soil cores from PH 17

14. View of probe hole PH 14

15. Soil cores from PH 14

16. View of probe hole PH 13

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17. Soil cores from PH 13

18. View of probe hole PH 11

19. Soil cores from PH 11

20. View of probe hole PH 10

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21. Soil cores from PH 10

22. View of probe hole PH 09

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23. Soil cores from PH 09

24. View of probe hole PH 08

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25. Soil cores from PH 08

26. View of probe hole PH 05

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27. Soil cores from PH 05

28. View of probe hole PH 07

29. Soil cores from PH 07

30. View of probe hole PH 16

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31. Soil cores from PH 02

32. View of probe hole PH 01

33. Soil cores rom PH 01

34. View of probe hole PH 03

35. Soil cores from PH 03

36. Sampling of temporary monitoring well

37. Typical probe hole surface repair

APPENDIX B. BORING LOGS

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 01
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		54	0.0	3" gravel				
3					23" tan sand				
4									
5					tan sand - saturated last				
6	2		75	0.0	foot				
7									
8									
9					Sample PH 01 SOIL 5-6'				
10					collected @ 5:00				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 02
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		54	0.0	1" gravel 8" tan sand				
3					7" black coke ~~sand~~ ash fill				
4					10" tan sand - moist				
5					Tan sand - saturated				
6	2		75	0.0					
7									
8									
9					Sample PH 02 SOIL 1.25-2.25'				
10					collected @ 4:20				
11					collected DUP 01 SOIL @ 4:20				
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 03
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					1" black silty loam				
2	1		60	0.0	28" black coke ash fill - moist				
3									
4									
5					tan/brown sand - saturated				
6	2		56	0.0					
7									
8									
9					Sample PH 03 SOIL 1.25-2.25' collected @ 5:20				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 04
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 12 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth 12 feet	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		50	0.0	6" gravel 1' black coke ash fill				
3					6" tan sand - moist				
4									
5					Tan sand w/pebbles - saturated				
6	2		75	0.0					
7									
8									
9					No soil recovered				
10	3		—	—					
11									
12									
13					Sample PH 04 SOIL 1.5-2'				
14					collected @ 9:50				
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 05
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		50	0.0	1" gravel				
3					23" black cohesive fill-moist				
4									
5					tan sand - saturated				
6	2		66	0.0					
7									
8									
9					Sample PH 05 SOIL 1.5-2'				
10					collected @ 3:00				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 06
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 12 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth 12'	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		37	0.0	18" gravel w/ black coke ash fill				
3									
4									
5					2" black coke ash fill - moist				
6	2		50	4.3	6" tan sand - saturated				
7					16" black sand w/ gravel - saturated petroleum odor				
8									
9					2' black sand - saturated				
10	3		75	0.0	1' grey sand - saturated				
11									
12									
13					Sample PH 06 1.5-2' collected @ 10:45				
14									
15					Field blank collected @ 10:45				
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 07
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2	1		41	0.0	3" gravel 12" black coke ash fill, pebble/sand mix - moist				
3									
4									
5					22" black sand - saturated				
6	2		75	1.8	9" grey sand - saturated petroleum odor				
7									
8									
9					sample PH 07 SOIL 1-1.5' collected @ 3:20				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 08
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" Concrete				
2	1		75	0.0	3" gravel 33" black coke ash fill - moist				
3									
4									
5					Black/grey sand - saturated				
6	2		79	47	Petroleum odor				
7									
8									
9					Sample PH 08 SOIL 2.5-3'				
10					collected @ 2:40				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 09
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1	1		66	16	6" concrete 2" gravel 24" black coke ash fill 2" grey sand - moist				
2									
3									
4									
5	2		70	56	grey sand - saturated petroleum odor				
6									
7									
8									
9					Sample PH 09 SOIL 2-2.5' collected @ 2:20				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 10
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" gravel				
2	1		62	0.0	2" black coke ash fill				
3					22" black sand - moist				
4									
5					gray sand - saturated				
6	2		75	0.0					
7									
8									
9					Sample PH 10 SOIL 1.5-2.25'				
10					collected @ 2:00				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 11
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" Concrete				
2	1		62	1.6	2" gravel 15" black coke ash fill				
3					13" grey black sand - moist				
4									
5					grey coal tar sand. saturated				
6	2		79	0.1					
7									
8									
9					Sample PH 11 SOIL 2-2.5'				
10					collected @ 1:45				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 12
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 12 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth 12 feet	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete				
2					1" gravel				
3	1		50	20.0	9" Black coke ash fill 2" Brown coke ash fill 2" Black coke ash fill				
4					10" Gray and black sand - moist				
5					Black sand turning to a				
6	2		41	22.4	gray sand - saturated				
7					Petroleum odor				
8									
9					No soil collected				
10	3		—	—					
11									
12									
13					Sample PH 12 Soil 1.5-2'				
14					collected @ 11:35				
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 13
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1					6" concrete 2" gravel				
2	1		66	7.3	12" black coke ash fill				
3					14" brown sand				
4					4" black sand - moist				
5					10" black sand - saturated				
6	2		81	21.3	29" brown ad gray sand - saturated				
7									
8									
9					Sample PH 13 SOIL 2-2.5'				
10					collected @ 1:25				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 04
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1			66		6" concrete 2" gravel				
2	1		80	0.0	5" black coke ash fill 3" red brick				
3					18" tan sand - moist				
4									
5					grey sand - saturated				
6	2		83	0.0					
7									
8									
9					Sample PH 14 SOIL 1.5-2'				
10					collected @ 1:05				
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 15
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 12 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth 12 feet	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1	1		62.5	0.1	6" concrete 10" gravel 1" black coke ash fill 1" tan pebbles 2" black gravel 1' tan cal black sand - moist				
2									
3									
4									
5	2		62.5	0.0	grey sand - saturated				
6									
7									
8									
9	3		-	-	No soil recovered				
10									
11									
12									
13					Sample PH 15 SOIL 1.5-2' collected @ 12:05				
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 16
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1	1		66	0.0	6" concrete 4" gravel 23" black coke ash fill 2" tan sand w/pebbles - moist				
2									
3									
4									
5	2		75	6.6	6" black sand - saturated 30" grey sand - saturated Petroleum odor				
6									
7									
8									
9					Sample PH 16 SOIL 1.5-2.5' collected @ 3:45				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

Trinity Consultants

LOG OF TEST BORING

Client: Tradebe - Oshari Indiana Site	Project No: 222601.0094	Boring / Well No. PH 17
Project: VRP Investigation Work Plan		Page No. 1 of 1
Location: 4323 Kennedy Ave., East Chicago, IN		Start Date: 5/17/2022
Surface Elevation:	Top of Casing Elevation:	Completion Date: 5/17/2022
Drilling Contractor: Direct Push Analytical Corp. Drill Rig: GeoProbe GH 41		Sample Method: Direct Push
Water Encountered ? : YES	Total Boring Depth: 8 feet	Hole Diameter:2 inch
Initial Water Level:Approx. 4 ft. bgs	Surface Casing Depth:	Inspector(s): DA
Static Water Level:	Well Depth	Company: Trinity Consultants

Depth BGS (ft.)	Sample Interval	N	Rec. % RQD	PID Units	Description of Materials/Remarks	Moisture	Soil Class	Graphic Log	Well Diag.
1	1		60	0.0	6" Concrete 3" gravel 4" black coke ash fill 2" tan pebbles 6" black coke ash fill 14" tan sand – moist				
2									
3									
4									
5	2		83	0.0	grey sand – saturated				
6									
7									
8									
9					Sample PH 17 SOIL 1.5-2' collected @ 12:45				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Notes:

APPENDIX C. WATER WELL RECORDS

Record of Water Well

1

Indiana Department of Natural Resources

Reference Number **Driving directions to well** **Date completed**

10686

Owner-Contractor	**Name**	**Address**	**Telephone**
Owner	HARBISON WALKER CO		
Driller	S.B. GEIGER CO		

Construction Details

Well	**Use:** Industry	**Drilling method:**	**Pump type:**
	Depth: 1830.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:** 160.0	**Material:**	**Diameter:** 12.0
Screen	**Length:**	**Material:**	**Diameter: Slot size:** 8 OPEN HOLE

Well Capacity Test **Type of test:** **Test rate:** 300.0 gpm for 1.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 52.0 ft. **Static water level:** 142.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the NE of Section 28 **Topo map:** WHITING
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: 2500.0 **Ft N of SL:** **Ft E of WL:** **Ft S of NL:** 850.0
Ground elevation: 590.0 **Depth to bedrock:** 154.0 **Bedrock elevation:** 436.0 **Aquifer elevation:**
UTM Easting: 461595.0 **UTM Northing:** 4609355.0

Well Log

Top	Bottom	Formation
0.0	20.0	SAND
20.0	40.0	GRAY QUICKSAND
40.0	154.0	CLAY
154.0	640.0	GRAY LIMESTONE (SILURIAN)
640.0	770.0	GRAY SHALE (ORDOVICIAN)
770.0	1100.0	GRAY LIMESTONE
1100.0	1345.0	SANDSTONE(ORD. CAMBRIAN)
1345.0	1530.0	RED LAYERED SANDSTONE
1530.0	1550.0	LIMESTONE
1550.0	1560.0	SANDSTONE
1560.0	1570.0	LIMESTONE & QUARTZ (CHERT?)

1570.0	1620.0	LIMESTONE & SOME FRACTURES
1620.0	1820.0	SANDSTONE
1820.0	1830.0	GRAY SHALE

Comments SEE ALSO #10691

1

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
10691	KENNEDY AVE. AT 143 ST (EXT) E. CHICAGO, IN	Jan 01, 1929

Owner-Contractor	Name	Address	Telephone
Owner	HARBISON & WALKER		
Driller	S.B. GEIGER CO.		

Construction Details

Well	**Use:** Industry	**Drilling method:**	**Pump type:**
	Depth: 1830.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:** 160.0	**Material:**	**Diameter:** 12.0
Screen	**Length:** 8.0	**Material:**	**Diameter: Slot size:**

Well Capacity Test

Type of test: **Test rate:** 350.0 gpm for 2.0 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 52.0 ft. **Static water level:** 142.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the NE of Section 28 **Topo map:** WHITING
Grant Number:
Field located by: USGS **on:** Jan 01, 1957
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: 2500.0 **Ft N of SL:** **Ft E of WL:** **Ft S of NL:** 850.0
Ground elevation: 590.0 **Depth to bedrock:** 154.0 **Bedrock elevation:** 436.0 **Aquifer elevation:**
UTM Easting: 461595.0 **UTM Northing:** 4609355.0

Well Log

Top	Bottom	Formation
0.0	20.0	DRY SAND
20.0	40.0	GRAY QUICKSAND
40.0	154.0	CLAY
154.0	640.0	GRAY LIME
640.0	770.0	GRAY SHALE
770.0	1100.0	GRAY LIME
1100.0	1345.0	ST PETER SS
1345.0	1530.0	RED RK W/LAYER SS 2'-4' THICK
1530.0	1550.0	LIME
1550.0	1560.0	SAND
1560.0	1570.0	LIME QUARTZ

1570.0	1620.0	LIME AND BREAKS
1620.0	1820.0	POTTSDAM SAND(GALESVILLE-BP)
1820.0	1830.0	GRAY SHALE(EAU CLAIRE-BP 1980)

Comments CASED: 800-970FT; 1530-1725FT; SKETCH MAP INCLUDED SEE ALSO #10686

2

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413870	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2008

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test

Type of test: **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2005
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 585.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 566.0
UTM Easting: 461006.0 **UTM Northing:** 4610021.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

3

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413842	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2008
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 581.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 562.0
UTM Easting: 461001.0 **UTM Northing:** 4610209.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND W/SILT

Comments

Record of Water Well

4

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413862	FROM INTERSTATES 80 E OR W TAKE EXIT #2 INDIANAPOLIS LBVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON L (N)	Jul 31, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Jul 31, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 578.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 559.0
UTM Easting: 461001.0 **UTM Northing:** 4610220.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413917	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 583.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 563.0
UTM Easting: 461004.0 **UTM Northing:** 4610220.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED BROWN SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413890	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 02, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLEPLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 02, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 589.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 570.0
UTM Easting: 461006.0 **UTM Northing:** 4610221.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND W/SILT

Comments

Record of Water Well

7

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413854	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12). END AT 400 E COLUMBUS DR ON L (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:**	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS ST	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test

Type of test: **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information

Material: HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVITY **Number of bags used:** 0.5

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 584.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 565.0
UTM Easting: 461007.0 **UTM Northing:** 4610227.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED GRAY SAND TRACE SILT

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
413913	FROM INTERSTATE 80 E OR W TAKE EXIT #2 INDIANAPOLIS BLVD. N (IN 152N). TURN R (E) ON COLUMBUS DR (US 12), END AT 400 E COLUMBUS DR ON LEFT (N)	Aug 01, 2007

Owner-Contractor	Name	Address	Telephone
Owner	CONOCO PHILLIPS-RISK MANAGEMEN	1366 PHILLIPS BUILDING BARTLESVILLE, OK	(918) 661-1407
Driller	BOART LONGYEAR	101 ALDERSON ST SCHOFIELD, WI	(715) 359-7090
Operator	LAWRENCE EIDMAN	License: 1338	
Company	ALL SERVICE, INC	9441 N JANE CT LAKE ELMO, MN	(651) 227-2541

Construction Details

Well	**Use:** Other	**Drilling method:** Other	**Pump type:** Submersible
	Depth: 19.0	**Pump setting depth:** 15.0	**Water quality:**
Casing	**Length:** 8.0	**Material:** STEEL	**Diameter:** 6.0
Screen	**Length:** 10.0	**Material:** STAINLESS	**Diameter:** 6.0 **Slot size:** .010

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 7.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** HOLE PLUG **Depth:** from 5.5 to 4.5
Installation Method: GRAVIT **Number of bags used:** 0.5

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: DRILLER **on:** Aug 01, 2007
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: 585.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 566.0
UTM Easting: 461003.0 **UTM Northing:** 4610235.0

Well Log

Top	Bottom	Formation
0.0	19.0	MED BROWN SAND TRACE SILT

Comments

Record of Water Well

9

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
8317		Nov 12, 1986

Owner-Contractor	Name	Address	Telephone
Owner	NORTHERN INDIANA DOCK CO.	3601 CANAL ST, EAST CHICAGO, IN 46312	
Driller	JOHN FARMER & SONS WELL & PUMP	9703 KENNEDY AVENUE, HIGHLAND, IN 46322	
Operator	EVERETT W. FARMER	License: null	

Construction Details

Well	**Use:** Other	**Drilling method:** Rotary	**Pump type:**
	Depth: 35.0	**Pump setting depth:**	**Water quality:** CLEAR
Casing	**Length:** 25.0	**Material:**	**Diameter:** 8.0
Screen	**Length:** 10.0	**Material:**	**Diameter:** 8.0 **Slot size:** .013

Well Capacity Test **Type of test:** Pumping **Test rate:** 20.0 gpm for 2.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 17.0 ft. **Static water level:** 8.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative **County:** LAKE **Township:** 37N **Range:** 9W
Section: SW of the NW of the SW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: JRN **on:** Jul 23, 1993
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** 1900.0 **Ft E of WL:** 500.0 **Ft S of NL:**
Ground elevation: 587.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 552.0
UTM Easting: 460928.3 **UTM Northing:** 4610212.0

Well Log

Top	Bottom	Formation
0.0	35.0	SAND

Comments TALKED TO THE PLANT MANAGER. THE WELL IS LOCATED IN ANOTHER BUILDING. IT IS NOT NOW IN USE.

Record of Water Well

10

Indiana Department of Natural Resources

Reference Number **Driving directions to well** **Date completed**

10743

Owner-Contractor	**Name**	**Address**	**Telephone**
Owner	US GYPSUM CO	3501 CANAL E CHICAGO	

Construction Details

Well	**Use:**	**Drilling method:** Other	**Pump type:**
	Depth: 97.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:**	**Material:**	**Diameter:**
Screen	**Length:**	**Material:**	**Diameter: Slot size:**

Well Capacity Test **Type of test:** **Test rate:** gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: SW of the SW of the NW of Section 21 **Topo map:** WHITING
Grant Number:
Field located by: JRN **on:** Aug 23, 1993
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** 50.0 **Ft S of NL:** 2350.0
Ground elevation: 585.0 **Depth to bedrock:** 95.0 **Bedrock elevation:** 490.0 **Aquifer elevation:**
UTM Easting: 460770.0 **UTM Northing:** 4610497.0

Well Log

Top	Bottom	Formation
0.0	36.0	SAND
36.0	82.0	BLUE CLAY
82.0	85.0	HARDPAN
85.0	88.0	QUICKSAND
88.0	95.0	HARDPAN
95.0	97.0	LIMESTONE

Comments NO GPS, 8/23/93 JRN, TALKED TO A GENTLEMAN NAMED VERN WHO SAID THAT THE WELL WAS LOCATED ON THE SE CORNER OF THE PROPERTY, NEAR THE CANAL, IN AN AREA THAT IS NOT ACCESSIBLE.

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
393018	NORTH ON RT 41 TO 133RD AVE. WEST ON 133RD AVE. 1 BLOCK TO WOODMAR. SOUTH ON WOODMAR TO FOUR-PLEX ON WEST SIDE OF WOODMAR. WOODMAR CEDAR LAKE, IN 4630	Nov 11, 2005

Owner-Contractor	Name	Address	Telephone
Owner	MJM PROPERTIES C/O JESSE GEBER	11504 W 134TH CT APT C CEDAR LAKE, IN	(219) 374-2450
Driller	SHEEHY WELL & PUMP CO INC	PO BOX 606 15530 WICKER AVE CEDAR LAKE, IN	(219) 696-0455
Operator	TOM SHEEHY	License: 1641	
Company	RICE CONSTRUCTION		

Construction Details

Well	**Use:** Home	**Drilling method:** Rotary	**Pump type:** Submersible
	Depth: 133.0	**Pump setting depth:** 100.0	**Water quality:** CLEAR
Casing	**Length:** 129.0	**Material:** PVC	**Diameter:** 4.0
Screen	**Length:** 5.0	**Material:** PVC	**Diameter:** 4.0 **Slot size:** .008

Well Capacity Test

Type of test: Air **Test rate:** 20.0 gpm for 1.5 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 0.0 ft. **Static water level:** ft. **Bailer Drawdown** ft.

Grouting Information

Material: BENTONITE SLURRY **Depth:** from 0.0 to 70.0
Installation Method: PUMPING **Number of bags used:** 3.0

Well Abandonment

Sealing material: **Depth:** from to
Installation Method: **Number of bags used:**

Administrative

County: LAKE **Township:** 37N **Range:** 9W
Section: NE of Section 29 **Topo map:** ST. JOHN
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:**
UTM Easting: **UTM Northing:**

Well Log

Top	Bottom	Formation
0.0	22.0	YELLOW CLAY
22.0	45.0	GRAY CLAY
45.0	60.0	SAND
85.0	122.0	FINE SAND
122.0	135.0	SAND
135.0	138.0	FINE SAND

Comments FIRST WELL ON PROPERTY

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
9942	144TH & RAILROAD ST.	Feb 26, 1984

Owner-Contractor	Name	Address	Telephone
Owner	BLAW-KNOW FOUNDRY	EAST CHICAGO, ILL	
Driller	LAYNE-NORTHERN	MISHAWAKA, IN	
Operator	DON SNYDER	License: null	

Construction Details

Well	**Use:** Industry	**Drilling method:** Rotary	**Pump type:**
	Depth: 30.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:**	**Material:**	**Diameter:** 12.75
Screen	**Length:** 15.0	**Material:**	**Diameter:** 12.0 **Slot size:** .012

Well Capacity Test **Type of test:** **Test rate:** 25.0 gpm for 1.0 hrs. **BailTest rate:** gpm for hrs.
Drawdown: 15.0 ft. **Static water level:** 5.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative
County: LAKE **Township:** 37N **Range:** 9W
Section: SE of the NE of Section 29 **Topo map:** WHITING
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:**
UTM Easting: **UTM Northing:**

Well Log

Top	Bottom	Formation
0.0	12.0	FILL
12.0	30.0	FINE SILTY SAND

Comments GRAVEL WALL WELL NO. 11.

APPENDIX D. LABORATORY REPORTS

ANALYTICAL REPORT

June 03, 2022

Trinity Consultants

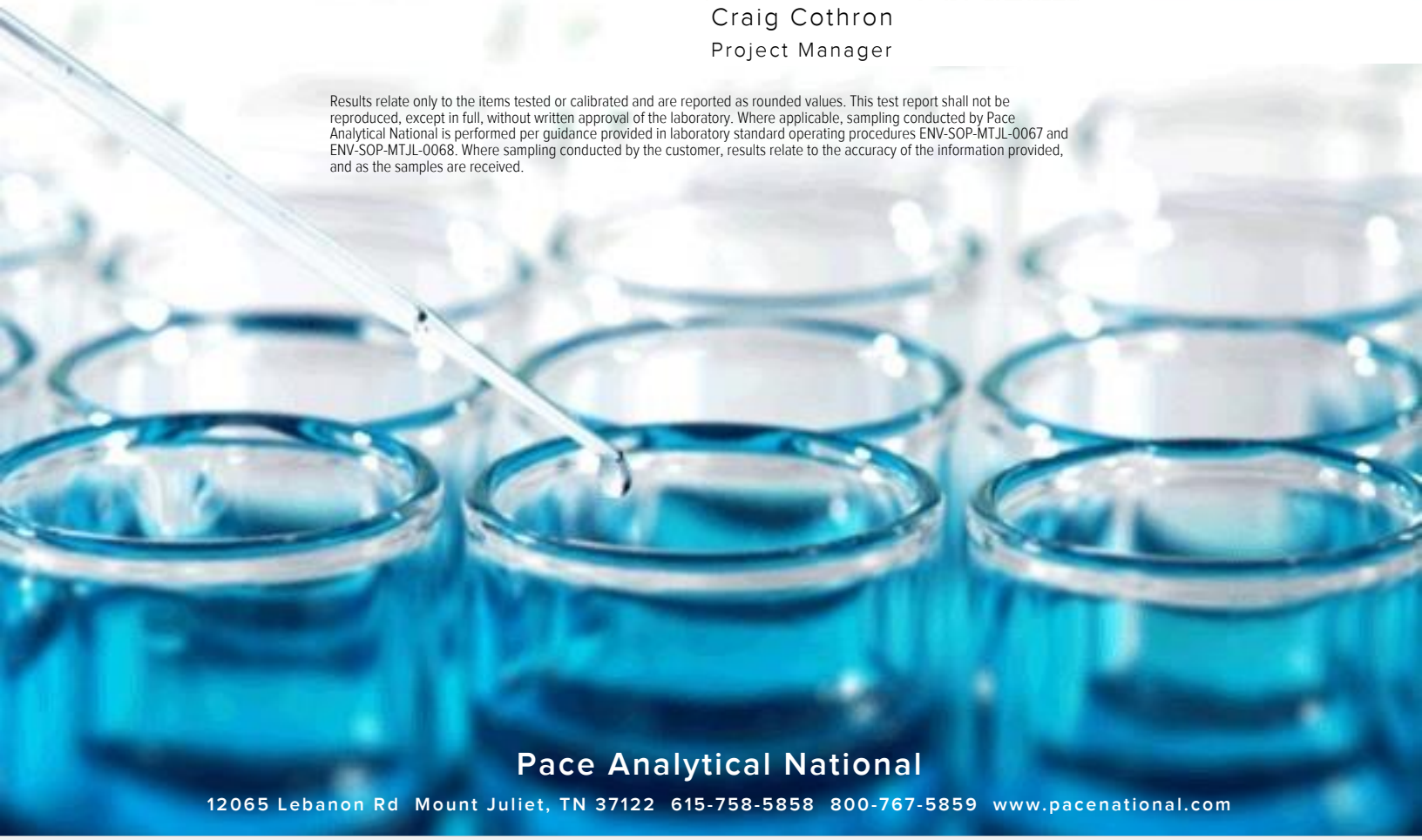
Sample Delivery Group:	L1496268
Samples Received:	05/19/2022
Project Number:	222601.0094
Description:	OsharA1 VRP

Report To:

Mr. Doug Abeln
16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Entire Report Reviewed By:

Craig Cothron
Project Manager



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PH 04 SOIL 1.5-2 L1496268-01 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 09:50 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868317	1	05/17/22 09:50	05/24/22 15:25	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 13:51	AGW	Mt. Juliet, TN

PH 06 SOIL 1.5-2 L1496268-02 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 10:45 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868317	1.26	05/17/22 10:45	05/24/22 15:44	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 15:11	AGW	Mt. Juliet, TN

PH 12 SOIL 1.5-2 L1496268-03 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 11:35 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868317	80	05/17/22 11:35	05/24/22 16:03	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 17:12	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	10	05/31/22 04:09	06/01/22 22:09	ADF	Mt. Juliet, TN

PH 15 SOIL 1.5-2 L1496268-04 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 12:05 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 12:05	05/24/22 01:24	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 15:51	AGW	Mt. Juliet, TN

PH 17 SOIL 1.5-2 L1496268-05 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 12:45 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 12:45	05/24/22 01:43	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 14:11	AGW	Mt. Juliet, TN

PH 14 SOIL 1.53-2.5 L1496268-06 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 13:05 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 13:05	05/24/22 02:02	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 14:31	AGW	Mt. Juliet, TN

PH 13 SOIL 2-2.5 L1496268-07 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 13:25 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868584	1	05/17/22 13:25	05/25/22 08:18	DWR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	10	05/31/22 04:09	05/31/22 20:12	AGW	Mt. Juliet, TN

PH 11 SOIL 2-2.5 L1496268-08 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 13:45 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868584	1	05/17/22 13:45	05/25/22 08:37	DWR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 14:51	AGW	Mt. Juliet, TN

PH 10 SOIL 1.5-2.25 L1496268-09 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 14:00 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 14:00	05/24/22 02:21	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 17:52	AGW	Mt. Juliet, TN

PH 09 SOIL 2-2.5 L1496268-10 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 14:20 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869434	1	05/25/22 18:08	05/25/22 18:18	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868584	20	05/17/22 14:20	05/25/22 09:15	DWR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 18:12	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	50	05/31/22 04:09	06/01/22 23:19	ADF	Mt. Juliet, TN

PH 08 SOIL 2.5-3 L1496268-11 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 14:40 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1.41	05/17/22 14:40	05/24/22 02:40	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 16:11	AGW	Mt. Juliet, TN

PH 05 SOIL 1.5-2 L1496268-12 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 15:00 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868584	13.9	05/17/22 15:00	05/25/22 09:34	DWR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 18:32	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	10	05/31/22 04:09	06/01/22 22:27	ADF	Mt. Juliet, TN

PH 07 SOIL 1-1.5 L1496268-13 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 15:20 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 15:20	05/24/22 02:59	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 17:32	AGW	Mt. Juliet, TN

PH 16 SOIL 1.5-2.5 L1496268-14 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 15:45 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1.36	05/17/22 15:45	05/24/22 03:18	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871318	1	05/31/22 04:09	05/31/22 15:31	AGW	Mt. Juliet, TN

PH 02 SOIL 1.25-2.25 L1496268-15 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 16:20 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 16:20	05/24/22 03:37	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871319	1	05/31/22 04:21	05/31/22 12:06	AGW	Mt. Juliet, TN

PH 01 SOIL 5-6 L1496268-16 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 17:00 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1	05/17/22 17:00	05/24/22 03:56	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871319	1	05/31/22 04:21	05/31/22 12:26	AGW	Mt. Juliet, TN

PH 03 SOIL 1.25-2.25 L1496268-17 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 17:20 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868318	1.45	05/17/22 17:20	05/24/22 04:15	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871319	1	05/31/22 04:21	05/31/22 12:46	AGW	Mt. Juliet, TN

DUP 01 SOIL L1496268-18 Solid

Collected by: D. Abeln | Collected date/time: 05/17/22 00:00 | Received date/time: 05/19/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1869443	1	05/25/22 18:20	05/25/22 18:31	CMK	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1868728	1.01	05/17/22 00:00	05/25/22 16:13	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1871319	1	05/31/22 04:21	05/31/22 13:06	AGW	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.4		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 15:25	WG1868317
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 15:25	WG1868317
Benzene	U		0.000467	0.00100	1	05/24/2022 15:25	WG1868317
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 15:25	WG1868317
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 15:25	WG1868317
Bromoform	U		0.00117	0.0250	1	05/24/2022 15:25	WG1868317
Bromomethane	U		0.00197	0.0125	1	05/24/2022 15:25	WG1868317
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 15:25	WG1868317
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 15:25	WG1868317
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 15:25	WG1868317
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 15:25	WG1868317
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 15:25	WG1868317
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 15:25	WG1868317
Chloroethane	U		0.00170	0.00500	1	05/24/2022 15:25	WG1868317
Chloroform	U		0.00103	0.00250	1	05/24/2022 15:25	WG1868317
Chloromethane	U		0.00435	0.0125	1	05/24/2022 15:25	WG1868317
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 15:25	WG1868317
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 15:25	WG1868317
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 15:25	WG1868317
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 15:25	WG1868317
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 15:25	WG1868317
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 15:25	WG1868317
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 15:25	WG1868317
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 15:25	WG1868317
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 15:25	WG1868317
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 15:25	WG1868317
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 15:25	WG1868317
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 15:25	WG1868317
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 15:25	WG1868317
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 15:25	WG1868317
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 15:25	WG1868317
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 15:25	WG1868317
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 15:25	WG1868317
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 15:25	WG1868317
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 15:25	WG1868317
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 15:25	WG1868317
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 15:25	WG1868317
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 15:25	WG1868317
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 15:25	WG1868317
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 15:25	WG1868317
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 15:25	WG1868317
2-Butanone (MEK)	0.0871	J	0.0635	0.100	1	05/24/2022 15:25	WG1868317
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 15:25	WG1868317
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 15:25	WG1868317
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 15:25	WG1868317
Naphthalene	U		0.00488	0.0125	1	05/24/2022 15:25	WG1868317
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 15:25	WG1868317
Styrene	U		0.000229	0.0125	1	05/24/2022 15:25	WG1868317
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 15:25	WG1868317
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 15:25	WG1868317

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 15:25	WG1868317
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 15:25	WG1868317
Toluene	U		0.00130	0.00500	1	05/24/2022 15:25	WG1868317
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 15:25	WG1868317
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 15:25	WG1868317
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 15:25	WG1868317
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 15:25	WG1868317
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 15:25	WG1868317
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 15:25	WG1868317
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 15:25	WG1868317
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 15:25	WG1868317
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 15:25	WG1868317
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 15:25	WG1868317
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 15:25	WG1868317
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 15:25	WG1868317
(S) Toluene-d8	*101*			*75.0-131*		*05/24/2022 15:25*	WG1868317
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*05/24/2022 15:25*	WG1868317
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*05/24/2022 15:25*	WG1868317

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 13:51	WG1871318
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 13:51	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 13:51	WG1871318
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 13:51	WG1871318
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 13:51	WG1871318
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 13:51	WG1871318
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 13:51	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 13:51	WG1871318
Chrysene	U		0.00232	0.00600	1	05/31/2022 13:51	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 13:51	WG1871318
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 13:51	WG1871318
Fluorene	U		0.00205	0.00600	1	05/31/2022 13:51	WG1871318
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 13:51	WG1871318
Naphthalene	U		0.00408	0.0200	1	05/31/2022 13:51	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 13:51	WG1871318
Pyrene	U		0.00200	0.00600	1	05/31/2022 13:51	WG1871318
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 13:51	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 13:51	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 13:51	WG1871318
(S) p-Terphenyl-d14	*54.7*			*23.0-120*		*05/31/2022 13:51*	WG1871318
(S) Nitrobenzene-d5	*40.0*			*14.0-149*		*05/31/2022 13:51*	WG1871318
(S) 2-Fluorobiphenyl	*45.8*			*34.0-125*		*05/31/2022 13:51*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.1		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0460	0.0630	1.26	05/24/2022 15:44	WG1868317
Acrylonitrile	U		0.00455	0.0158	1.26	05/24/2022 15:44	WG1868317
Benzene	0.00350		0.000588	0.00126	1.26	05/24/2022 15:44	WG1868317
Bromobenzene	U		0.00113	0.0158	1.26	05/24/2022 15:44	WG1868317
Bromodichloromethane	U		0.000913	0.00315	1.26	05/24/2022 15:44	WG1868317
Bromoform	U		0.00147	0.0315	1.26	05/24/2022 15:44	WG1868317
Bromomethane	U		0.00248	0.0158	1.26	05/24/2022 15:44	WG1868317
n-Butylbenzene	0.0656		0.00662	0.0158	1.26	05/24/2022 15:44	WG1868317
sec-Butylbenzene	0.0398		0.00363	0.0158	1.26	05/24/2022 15:44	WG1868317
tert-Butylbenzene	0.00343	J	0.00246	0.00630	1.26	05/24/2022 15:44	WG1868317
Carbon tetrachloride	0.00306	J	0.00113	0.00630	1.26	05/24/2022 15:44	WG1868317
Chlorobenzene	U		0.000265	0.00315	1.26	05/24/2022 15:44	WG1868317
Chlorodibromomethane	U		0.000771	0.00315	1.26	05/24/2022 15:44	WG1868317
Chloroethane	U		0.00214	0.00630	1.26	05/24/2022 15:44	WG1868317
Chloroform	U		0.00130	0.00315	1.26	05/24/2022 15:44	WG1868317
Chloromethane	U		0.00548	0.0158	1.26	05/24/2022 15:44	WG1868317
2-Chlorotoluene	U		0.00109	0.00315	1.26	05/24/2022 15:44	WG1868317
4-Chlorotoluene	U		0.000567	0.00630	1.26	05/24/2022 15:44	WG1868317
1,2-Dibromo-3-Chloropropane	U		0.00491	0.0315	1.26	05/24/2022 15:44	WG1868317
1,2-Dibromoethane	U		0.000816	0.00315	1.26	05/24/2022 15:44	WG1868317
Dibromomethane	U		0.000945	0.00630	1.26	05/24/2022 15:44	WG1868317
1,2-Dichlorobenzene	U		0.000535	0.00630	1.26	05/24/2022 15:44	WG1868317
1,3-Dichlorobenzene	U		0.000756	0.00630	1.26	05/24/2022 15:44	WG1868317
1,4-Dichlorobenzene	U		0.000882	0.00630	1.26	05/24/2022 15:44	WG1868317
Dichlorodifluoromethane	U		0.00203	0.00315	1.26	05/24/2022 15:44	WG1868317
1,1-Dichloroethane	U		0.000619	0.00315	1.26	05/24/2022 15:44	WG1868317
1,2-Dichloroethane	U		0.000818	0.00315	1.26	05/24/2022 15:44	WG1868317
1,1-Dichloroethene	U		0.000764	0.00315	1.26	05/24/2022 15:44	WG1868317
cis-1,2-Dichloroethene	U		0.000925	0.00315	1.26	05/24/2022 15:44	WG1868317
trans-1,2-Dichloroethene	U		0.00131	0.00630	1.26	05/24/2022 15:44	WG1868317
1,2-Dichloropropane	U		0.00179	0.00630	1.26	05/24/2022 15:44	WG1868317
1,1-Dichloropropene	U		0.00102	0.00315	1.26	05/24/2022 15:44	WG1868317
1,3-Dichloropropane	U		0.000631	0.00630	1.26	05/24/2022 15:44	WG1868317
cis-1,3-Dichloropropene	U		0.000954	0.00315	1.26	05/24/2022 15:44	WG1868317
trans-1,3-Dichloropropene	U		0.00144	0.00630	1.26	05/24/2022 15:44	WG1868317
2,2-Dichloropropane	U		0.00174	0.00315	1.26	05/24/2022 15:44	WG1868317
Di-isopropyl ether	U		0.000517	0.00126	1.26	05/24/2022 15:44	WG1868317
Ethylbenzene	0.0214		0.000929	0.00315	1.26	05/24/2022 15:44	WG1868317
Hexachloro-1,3-butadiene	U		0.00756	0.0315	1.26	05/24/2022 15:44	WG1868317
Isopropylbenzene	0.0551		0.000535	0.00315	1.26	05/24/2022 15:44	WG1868317
p-Isopropyltoluene	0.0743		0.00321	0.00630	1.26	05/24/2022 15:44	WG1868317
2-Butanone (MEK)	0.148		0.0800	0.126	1.26	05/24/2022 15:44	WG1868317
Methylene Chloride	U		0.00837	0.0315	1.26	05/24/2022 15:44	WG1868317
4-Methyl-2-pentanone (MIBK)	U		0.00287	0.0315	1.26	05/24/2022 15:44	WG1868317
Methyl tert-butyl ether	U		0.000441	0.00126	1.26	05/24/2022 15:44	WG1868317
Naphthalene	0.171		0.00615	0.0158	1.26	05/24/2022 15:44	WG1868317
n-Propylbenzene	0.0538		0.00120	0.00630	1.26	05/24/2022 15:44	WG1868317
Styrene	U		0.000289	0.0158	1.26	05/24/2022 15:44	WG1868317
1,1,1,2-Tetrachloroethane	U		0.00119	0.00315	1.26	05/24/2022 15:44	WG1868317
1,1,2,2-Tetrachloroethane	U		0.000876	0.00315	1.26	05/24/2022 15:44	WG1868317

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000950	0.00315	1.26	05/24/2022 15:44	WG1868317
Tetrachloroethene	0.00806		0.00113	0.00315	1.26	05/24/2022 15:44	WG1868317
Toluene	0.0154		0.00164	0.00630	1.26	05/24/2022 15:44	WG1868317
1,2,3-Trichlorobenzene	U		0.00924	0.0158	1.26	05/24/2022 15:44	WG1868317
1,2,4-Trichlorobenzene	U		0.00554	0.0158	1.26	05/24/2022 15:44	WG1868317
1,1,1-Trichloroethane	U		0.00116	0.00315	1.26	05/24/2022 15:44	WG1868317
1,1,2-Trichloroethane	U		0.000752	0.00315	1.26	05/24/2022 15:44	WG1868317
Trichloroethene	2.78		0.000736	0.00126	1.26	05/24/2022 15:44	WG1868317
Trichlorofluoromethane	U		0.00104	0.00315	1.26	05/24/2022 15:44	WG1868317
1,2,3-Trichloropropane	U		0.00204	0.0158	1.26	05/24/2022 15:44	WG1868317
1,2,4-Trimethylbenzene	0.0847		0.00199	0.00630	1.26	05/24/2022 15:44	WG1868317
1,2,3-Trimethylbenzene	0.139		0.00199	0.00630	1.26	05/24/2022 15:44	WG1868317
1,3,5-Trimethylbenzene	0.248		0.00252	0.00630	1.26	05/24/2022 15:44	WG1868317
Vinyl chloride	U		0.00146	0.00315	1.26	05/24/2022 15:44	WG1868317
Xylenes, Total	0.0648		0.00111	0.00819	1.26	05/24/2022 15:44	WG1868317
(S) Toluene-d8	*93.9*			*75.0-131*		*05/24/2022 15:44*	WG1868317
(S) 4-Bromofluorobenzene	*121*			*67.0-138*		*05/24/2022 15:44*	WG1868317
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*05/24/2022 15:44*	WG1868317

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.0124		0.00230	0.00600	1	05/31/2022 15:11	WG1871318
Acenaphthene	0.00968		0.00209	0.00600	1	05/31/2022 15:11	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 15:11	WG1871318
Benzo(a)anthracene	0.0373		0.00173	0.00600	1	05/31/2022 15:11	WG1871318
Benzo(a)pyrene	0.0258		0.00179	0.00600	1	05/31/2022 15:11	WG1871318
Benzo(b)fluoranthene	0.0389		0.00153	0.00600	1	05/31/2022 15:11	WG1871318
Benzo(g,h,i)perylene	0.0302		0.00177	0.00600	1	05/31/2022 15:11	WG1871318
Benzo(k)fluoranthene	0.0121		0.00215	0.00600	1	05/31/2022 15:11	WG1871318
Chrysene	0.0381		0.00232	0.00600	1	05/31/2022 15:11	WG1871318
Dibenz(a,h)anthracene	0.00507	J	0.00172	0.00600	1	05/31/2022 15:11	WG1871318
Fluoranthene	0.0738		0.00227	0.00600	1	05/31/2022 15:11	WG1871318
Fluorene	0.00735		0.00205	0.00600	1	05/31/2022 15:11	WG1871318
Indeno(1,2,3-cd)pyrene	0.0191		0.00181	0.00600	1	05/31/2022 15:11	WG1871318
Naphthalene	0.157		0.00408	0.0200	1	05/31/2022 15:11	WG1871318
Phenanthrene	0.232		0.00231	0.00600	1	05/31/2022 15:11	WG1871318
Pyrene	0.0683		0.00200	0.00600	1	05/31/2022 15:11	WG1871318
1-Methylnaphthalene	0.209		0.00449	0.0200	1	05/31/2022 15:11	WG1871318
2-Methylnaphthalene	0.259		0.00427	0.0200	1	05/31/2022 15:11	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 15:11	WG1871318
(S) p-Terphenyl-d14	*61.9*			*23.0-120*		*05/31/2022 15:11*	WG1871318
(S) Nitrobenzene-d5	*43.9*			*14.0-149*		*05/31/2022 15:11*	WG1871318
(S) 2-Fluorobiphenyl	*57.8*			*34.0-125*		*05/31/2022 15:11*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		2.92	4.00	80	05/24/2022 16:03	WG1868317
Acrylonitrile	U		0.289	1.00	80	05/24/2022 16:03	WG1868317
Benzene	U		0.0374	0.0800	80	05/24/2022 16:03	WG1868317
Bromobenzene	U		0.0720	1.00	80	05/24/2022 16:03	WG1868317
Bromodichloromethane	U		0.0580	0.200	80	05/24/2022 16:03	WG1868317
Bromoform	U		0.0936	2.00	80	05/24/2022 16:03	WG1868317
Bromomethane	U		0.158	1.00	80	05/24/2022 16:03	WG1868317
n-Butylbenzene	U		0.420	1.00	80	05/24/2022 16:03	WG1868317
sec-Butylbenzene	U		0.230	1.00	80	05/24/2022 16:03	WG1868317
tert-Butylbenzene	U		0.156	0.400	80	05/24/2022 16:03	WG1868317
Carbon tetrachloride	U		0.0718	0.400	80	05/24/2022 16:03	WG1868317
Chlorobenzene	U		0.0168	0.200	80	05/24/2022 16:03	WG1868317
Chlorodibromomethane	U		0.0490	0.200	80	05/24/2022 16:03	WG1868317
Chloroethane	U		0.136	0.400	80	05/24/2022 16:03	WG1868317
Chloroform	U		0.0824	0.200	80	05/24/2022 16:03	WG1868317
Chloromethane	U		0.348	1.00	80	05/24/2022 16:03	WG1868317
2-Chlorotoluene	U		0.0692	0.200	80	05/24/2022 16:03	WG1868317
4-Chlorotoluene	U		0.0360	0.400	80	05/24/2022 16:03	WG1868317
1,2-Dibromo-3-Chloropropane	U		0.312	2.00	80	05/24/2022 16:03	WG1868317
1,2-Dibromoethane	U		0.0518	0.200	80	05/24/2022 16:03	WG1868317
Dibromomethane	U		0.0600	0.400	80	05/24/2022 16:03	WG1868317
1,2-Dichlorobenzene	U		0.0340	0.400	80	05/24/2022 16:03	WG1868317
1,3-Dichlorobenzene	U		0.0480	0.400	80	05/24/2022 16:03	WG1868317
1,4-Dichlorobenzene	U		0.0560	0.400	80	05/24/2022 16:03	WG1868317
Dichlorodifluoromethane	U		0.129	0.200	80	05/24/2022 16:03	WG1868317
1,1-Dichloroethane	U		0.0393	0.200	80	05/24/2022 16:03	WG1868317
1,2-Dichloroethane	U		0.0519	0.200	80	05/24/2022 16:03	WG1868317
1,1-Dichloroethene	U		0.0485	0.200	80	05/24/2022 16:03	WG1868317
cis-1,2-Dichloroethene	U		0.0587	0.200	80	05/24/2022 16:03	WG1868317
trans-1,2-Dichloroethene	U		0.0832	0.400	80	05/24/2022 16:03	WG1868317
1,2-Dichloropropane	U		0.114	0.400	80	05/24/2022 16:03	WG1868317
1,1-Dichloropropene	U		0.0647	0.200	80	05/24/2022 16:03	WG1868317
1,3-Dichloropropane	U		0.0401	0.400	80	05/24/2022 16:03	WG1868317
cis-1,3-Dichloropropene	U		0.0606	0.200	80	05/24/2022 16:03	WG1868317
trans-1,3-Dichloropropene	U		0.0912	0.400	80	05/24/2022 16:03	WG1868317
2,2-Dichloropropane	U		0.110	0.200	80	05/24/2022 16:03	WG1868317
Di-isopropyl ether	U		0.0328	0.0800	80	05/24/2022 16:03	WG1868317
Ethylbenzene	U		0.0590	0.200	80	05/24/2022 16:03	WG1868317
Hexachloro-1,3-butadiene	U		0.480	2.00	80	05/24/2022 16:03	WG1868317
Isopropylbenzene	0.0842	J	0.0340	0.200	80	05/24/2022 16:03	WG1868317
p-Isopropyltoluene	U		0.204	0.400	80	05/24/2022 16:03	WG1868317
2-Butanone (MEK)	U		5.08	8.00	80	05/24/2022 16:03	WG1868317
Methylene Chloride	U		0.531	2.00	80	05/24/2022 16:03	WG1868317
4-Methyl-2-pentanone (MIBK)	U		0.182	2.00	80	05/24/2022 16:03	WG1868317
Methyl tert-butyl ether	U		0.0280	0.0800	80	05/24/2022 16:03	WG1868317
Naphthalene	0.617	J	0.390	1.00	80	05/24/2022 16:03	WG1868317
n-Propylbenzene	0.194	J	0.0760	0.400	80	05/24/2022 16:03	WG1868317
Styrene	U		0.0183	1.00	80	05/24/2022 16:03	WG1868317
1,1,1,2-Tetrachloroethane	U		0.0758	0.200	80	05/24/2022 16:03	WG1868317
1,1,2,2-Tetrachloroethane	U		0.0556	0.200	80	05/24/2022 16:03	WG1868317

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.0603	0.200	80	05/24/2022 16:03	WG1868317
Tetrachloroethene	U		0.0717	0.200	80	05/24/2022 16:03	WG1868317
Toluene	U		0.104	0.400	80	05/24/2022 16:03	WG1868317
1,2,3-Trichlorobenzene	U		0.586	1.00	80	05/24/2022 16:03	WG1868317
1,2,4-Trichlorobenzene	U		0.352	1.00	80	05/24/2022 16:03	WG1868317
1,1,1-Trichloroethane	U		0.0738	0.200	80	05/24/2022 16:03	WG1868317
1,1,2-Trichloroethane	U		0.0478	0.200	80	05/24/2022 16:03	WG1868317
Trichloroethene	0.100		0.0467	0.0800	80	05/24/2022 16:03	WG1868317
Trichlorofluoromethane	U		0.0662	0.200	80	05/24/2022 16:03	WG1868317
1,2,3-Trichloropropane	U		0.130	1.00	80	05/24/2022 16:03	WG1868317
1,2,4-Trimethylbenzene	U		0.126	0.400	80	05/24/2022 16:03	WG1868317
1,2,3-Trimethylbenzene	0.141	J	0.126	0.400	80	05/24/2022 16:03	WG1868317
1,3,5-Trimethylbenzene	U		0.160	0.400	80	05/24/2022 16:03	WG1868317
Vinyl chloride	U		0.0928	0.200	80	05/24/2022 16:03	WG1868317
Xylenes, Total	U		0.0704	0.520	80	05/24/2022 16:03	WG1868317
(S) Toluene-d8	*99.5*			*75.0-131*		*05/24/2022 16:03*	WG1868317
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*05/24/2022 16:03*	WG1868317
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*05/24/2022 16:03*	WG1868317

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.696		0.00230	0.00600	1	05/31/2022 17:12	WG1871318
Acenaphthene	1.39		0.00209	0.00600	1	05/31/2022 17:12	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 17:12	WG1871318
Benzo(a)anthracene	0.148		0.00173	0.00600	1	05/31/2022 17:12	WG1871318
Benzo(a)pyrene	0.0844		0.00179	0.00600	1	05/31/2022 17:12	WG1871318
Benzo(b)fluoranthene	0.0577		0.00153	0.00600	1	05/31/2022 17:12	WG1871318
Benzo(g,h,i)perylene	0.0702		0.00177	0.00600	1	05/31/2022 17:12	WG1871318
Benzo(k)fluoranthene	0.00853		0.00215	0.00600	1	05/31/2022 17:12	WG1871318
Chrysene	0.185		0.00232	0.00600	1	05/31/2022 17:12	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 17:12	WG1871318
Fluoranthene	0.359		0.00227	0.00600	1	05/31/2022 17:12	WG1871318
Fluorene	1.94		0.00205	0.00600	1	05/31/2022 17:12	WG1871318
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 17:12	WG1871318
Naphthalene	0.570		0.00408	0.0200	1	05/31/2022 17:12	WG1871318
Phenanthrene	8.21		0.0231	0.0600	10	06/01/2022 22:09	WG1871318
Pyrene	1.33		0.00200	0.00600	1	05/31/2022 17:12	WG1871318
1-Methylnaphthalene	25.2		0.0449	0.200	10	06/01/2022 22:09	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 17:12	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 17:12	WG1871318
(S) p-Terphenyl-d14	*107*			*23.0-120*		*06/01/2022 22:09*	WG1871318
(S) p-Terphenyl-d14	*82.2*			*23.0-120*		*05/31/2022 17:12*	WG1871318
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*06/01/2022 22:09*	WG1871318
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*05/31/2022 17:12*	WG1871318
(S) 2-Fluorobiphenyl	*38.4*			*34.0-125*		*05/31/2022 17:12*	WG1871318
(S) 2-Fluorobiphenyl	*50.6*			*34.0-125*		*06/01/2022 22:09*	WG1871318

Sample Narrative:

L1496268-03 WG1871318: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.9		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 01:24	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 01:24	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 01:24	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 01:24	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 01:24	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 01:24	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 01:24	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 01:24	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 01:24	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 01:24	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 01:24	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 01:24	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 01:24	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 01:24	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 01:24	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 01:24	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 01:24	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 01:24	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 01:24	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 01:24	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 01:24	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 01:24	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 01:24	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 01:24	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 01:24	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 01:24	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 01:24	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 01:24	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 01:24	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 01:24	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 01:24	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 01:24	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 01:24	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 01:24	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 01:24	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 01:24	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 01:24	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 01:24	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 01:24	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 01:24	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 01:24	WG1868318
2-Butanone (MEK)	0.133		0.0635	0.100	1	05/24/2022 01:24	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 01:24	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 01:24	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 01:24	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 01:24	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 01:24	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 01:24	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 01:24	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 01:24	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 01:24	WG1868318
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 01:24	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 01:24	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 01:24	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 01:24	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 01:24	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 01:24	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 01:24	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 01:24	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 01:24	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 01:24	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 01:24	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 01:24	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 01:24	WG1868318
Xylenes, Total	0.000880	J	0.000880	0.00650	1	05/24/2022 01:24	WG1868318
(S) Toluene-d8	*100*			*75.0-131*		*05/24/2022 01:24*	WG1868318
(S) 4-Bromofluorobenzene	*109*			*67.0-138*		*05/24/2022 01:24*	WG1868318
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*05/24/2022 01:24*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 15:51	WG1871318
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 15:51	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 15:51	WG1871318
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 15:51	WG1871318
Benzo(a)pyrene	0.0133		0.00179	0.00600	1	05/31/2022 15:51	WG1871318
Benzo(b)fluoranthene	0.00544	J	0.00153	0.00600	1	05/31/2022 15:51	WG1871318
Benzo(g,h,i)perylene	0.0695		0.00177	0.00600	1	05/31/2022 15:51	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 15:51	WG1871318
Chrysene	U		0.00232	0.00600	1	05/31/2022 15:51	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 15:51	WG1871318
Fluoranthene	0.00409	J	0.00227	0.00600	1	05/31/2022 15:51	WG1871318
Fluorene	U		0.00205	0.00600	1	05/31/2022 15:51	WG1871318
Indeno(1,2,3-cd)pyrene	0.0117		0.00181	0.00600	1	05/31/2022 15:51	WG1871318
Naphthalene	U		0.00408	0.0200	1	05/31/2022 15:51	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 15:51	WG1871318
Pyrene	0.0754		0.00200	0.00600	1	05/31/2022 15:51	WG1871318
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 15:51	WG1871318
2-Methylnaphthalene	0.00510	J	0.00427	0.0200	1	05/31/2022 15:51	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 15:51	WG1871318
(S) p-Terphenyl-d14	*93.0*			*23.0-120*		*05/31/2022 15:51*	WG1871318
(S) Nitrobenzene-d5	*81.3*			*14.0-149*		*05/31/2022 15:51*	WG1871318
(S) 2-Fluorobiphenyl	*84.3*			*34.0-125*		*05/31/2022 15:51*	WG1871318

Sample Narrative:

L1496268-04 WG1871318: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.2		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 01:43	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 01:43	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 01:43	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 01:43	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 01:43	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 01:43	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 01:43	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 01:43	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 01:43	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 01:43	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 01:43	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 01:43	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 01:43	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 01:43	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 01:43	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 01:43	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 01:43	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 01:43	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 01:43	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 01:43	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 01:43	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 01:43	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 01:43	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 01:43	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 01:43	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 01:43	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 01:43	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 01:43	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 01:43	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 01:43	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 01:43	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 01:43	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 01:43	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 01:43	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 01:43	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 01:43	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 01:43	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 01:43	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 01:43	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 01:43	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 01:43	WG1868318
2-Butanone (MEK)	0.0925	J	0.0635	0.100	1	05/24/2022 01:43	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 01:43	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 01:43	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 01:43	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 01:43	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 01:43	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 01:43	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 01:43	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 01:43	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 01:43	WG1868318
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 01:43	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 01:43	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 01:43	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 01:43	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 01:43	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 01:43	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 01:43	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 01:43	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 01:43	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 01:43	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 01:43	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 01:43	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 01:43	WG1868318
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 01:43	WG1868318
(S) Toluene-d8	*99.6*			*75.0-131*		*05/24/2022 01:43*	WG1868318
(S) 4-Bromofluorobenzene	*108*			*67.0-138*		*05/24/2022 01:43*	WG1868318
(S) 1,2-Dichloroethane-d4	*95.4*			*70.0-130*		*05/24/2022 01:43*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 14:11	WG1871318
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 14:11	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 14:11	WG1871318
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 14:11	WG1871318
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 14:11	WG1871318
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 14:11	WG1871318
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 14:11	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 14:11	WG1871318
Chrysene	U		0.00232	0.00600	1	05/31/2022 14:11	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 14:11	WG1871318
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 14:11	WG1871318
Fluorene	U		0.00205	0.00600	1	05/31/2022 14:11	WG1871318
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 14:11	WG1871318
Naphthalene	U		0.00408	0.0200	1	05/31/2022 14:11	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 14:11	WG1871318
Pyrene	U		0.00200	0.00600	1	05/31/2022 14:11	WG1871318
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 14:11	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 14:11	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 14:11	WG1871318
(S) p-Terphenyl-d14	*103*			*23.0-120*		*05/31/2022 14:11*	WG1871318
(S) Nitrobenzene-d5	*79.0*			*14.0-149*		*05/31/2022 14:11*	WG1871318
(S) 2-Fluorobiphenyl	*84.5*			*34.0-125*		*05/31/2022 14:11*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.3		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 02:02	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 02:02	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 02:02	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 02:02	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 02:02	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 02:02	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 02:02	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 02:02	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 02:02	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 02:02	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 02:02	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 02:02	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 02:02	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 02:02	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 02:02	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 02:02	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 02:02	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 02:02	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 02:02	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 02:02	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 02:02	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 02:02	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 02:02	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 02:02	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 02:02	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 02:02	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 02:02	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 02:02	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 02:02	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 02:02	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 02:02	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 02:02	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 02:02	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 02:02	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 02:02	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 02:02	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 02:02	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 02:02	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 02:02	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 02:02	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 02:02	WG1868318
2-Butanone (MEK)	0.146		0.0635	0.100	1	05/24/2022 02:02	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 02:02	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 02:02	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 02:02	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 02:02	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 02:02	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 02:02	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 02:02	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 02:02	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 02:02	WG1868318
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 02:02	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 02:02	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 02:02	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 02:02	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 02:02	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 02:02	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 02:02	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 02:02	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 02:02	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 02:02	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 02:02	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 02:02	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 02:02	WG1868318
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 02:02	WG1868318
(S) Toluene-d8	*103*			*75.0-131*		*05/24/2022 02:02*	WG1868318
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*05/24/2022 02:02*	WG1868318
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*		*05/24/2022 02:02*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 14:31	WG1871318
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 14:31	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 14:31	WG1871318
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 14:31	WG1871318
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 14:31	WG1871318
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 14:31	WG1871318
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 14:31	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 14:31	WG1871318
Chrysene	U		0.00232	0.00600	1	05/31/2022 14:31	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 14:31	WG1871318
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 14:31	WG1871318
Fluorene	U		0.00205	0.00600	1	05/31/2022 14:31	WG1871318
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 14:31	WG1871318
Naphthalene	U		0.00408	0.0200	1	05/31/2022 14:31	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 14:31	WG1871318
Pyrene	U		0.00200	0.00600	1	05/31/2022 14:31	WG1871318
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 14:31	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 14:31	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 14:31	WG1871318
(S) p-Terphenyl-d14	*63.1*			*23.0-120*		*05/31/2022 14:31*	WG1871318
(S) Nitrobenzene-d5	*42.0*			*14.0-149*		*05/31/2022 14:31*	WG1871318
(S) 2-Fluorobiphenyl	*51.0*			*34.0-125*		*05/31/2022 14:31*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.1		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3 J4	0.0365	0.0500	1	05/25/2022 08:18	WG1868584
Acrylonitrile	U		0.00361	0.0125	1	05/25/2022 08:18	WG1868584
Benzene	U		0.000467	0.00100	1	05/25/2022 08:18	WG1868584
Bromobenzene	U		0.000900	0.0125	1	05/25/2022 08:18	WG1868584
Bromodichloromethane	U		0.000725	0.00250	1	05/25/2022 08:18	WG1868584
Bromoform	U		0.00117	0.0250	1	05/25/2022 08:18	WG1868584
Bromomethane	U		0.00197	0.0125	1	05/25/2022 08:18	WG1868584
n-Butylbenzene	U		0.00525	0.0125	1	05/25/2022 08:18	WG1868584
sec-Butylbenzene	U		0.00288	0.0125	1	05/25/2022 08:18	WG1868584
tert-Butylbenzene	U		0.00195	0.00500	1	05/25/2022 08:18	WG1868584
Carbon tetrachloride	U		0.000898	0.00500	1	05/25/2022 08:18	WG1868584
Chlorobenzene	U		0.000210	0.00250	1	05/25/2022 08:18	WG1868584
Chlorodibromomethane	U		0.000612	0.00250	1	05/25/2022 08:18	WG1868584
Chloroethane	U		0.00170	0.00500	1	05/25/2022 08:18	WG1868584
Chloroform	U		0.00103	0.00250	1	05/25/2022 08:18	WG1868584
Chloromethane	U		0.00435	0.0125	1	05/25/2022 08:18	WG1868584
2-Chlorotoluene	U		0.000865	0.00250	1	05/25/2022 08:18	WG1868584
4-Chlorotoluene	U		0.000450	0.00500	1	05/25/2022 08:18	WG1868584
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/25/2022 08:18	WG1868584
1,2-Dibromoethane	U		0.000648	0.00250	1	05/25/2022 08:18	WG1868584
Dibromomethane	U		0.000750	0.00500	1	05/25/2022 08:18	WG1868584
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/25/2022 08:18	WG1868584
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/25/2022 08:18	WG1868584
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/25/2022 08:18	WG1868584
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/25/2022 08:18	WG1868584
1,1-Dichloroethane	U		0.000491	0.00250	1	05/25/2022 08:18	WG1868584
1,2-Dichloroethane	U		0.000649	0.00250	1	05/25/2022 08:18	WG1868584
1,1-Dichloroethene	U		0.000606	0.00250	1	05/25/2022 08:18	WG1868584
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/25/2022 08:18	WG1868584
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/25/2022 08:18	WG1868584
1,2-Dichloropropane	U		0.00142	0.00500	1	05/25/2022 08:18	WG1868584
1,1-Dichloropropene	U		0.000809	0.00250	1	05/25/2022 08:18	WG1868584
1,3-Dichloropropane	U		0.000501	0.00500	1	05/25/2022 08:18	WG1868584
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/25/2022 08:18	WG1868584
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/25/2022 08:18	WG1868584
2,2-Dichloropropane	U		0.00138	0.00250	1	05/25/2022 08:18	WG1868584
Di-isopropyl ether	U		0.000410	0.00100	1	05/25/2022 08:18	WG1868584
Ethylbenzene	U		0.000737	0.00250	1	05/25/2022 08:18	WG1868584
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/25/2022 08:18	WG1868584
Isopropylbenzene	U		0.000425	0.00250	1	05/25/2022 08:18	WG1868584
p-Isopropyltoluene	U		0.00255	0.00500	1	05/25/2022 08:18	WG1868584
2-Butanone (MEK)	0.0871	J	0.0635	0.100	1	05/25/2022 08:18	WG1868584
Methylene Chloride	U		0.00664	0.0250	1	05/25/2022 08:18	WG1868584
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/25/2022 08:18	WG1868584
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/25/2022 08:18	WG1868584
Naphthalene	U		0.00488	0.0125	1	05/25/2022 08:18	WG1868584
n-Propylbenzene	U		0.000950	0.00500	1	05/25/2022 08:18	WG1868584
Styrene	U		0.000229	0.0125	1	05/25/2022 08:18	WG1868584
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/25/2022 08:18	WG1868584
1,1,2,2-Tetrachloroethane	0.299		0.000695	0.00250	1	05/25/2022 08:18	WG1868584

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/25/2022 08:18	WG1868584
Tetrachloroethene	U		0.000896	0.00250	1	05/25/2022 08:18	WG1868584
Toluene	0.00295	B J	0.00130	0.00500	1	05/25/2022 08:18	WG1868584
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/25/2022 08:18	WG1868584
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/25/2022 08:18	WG1868584
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/25/2022 08:18	WG1868584
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/25/2022 08:18	WG1868584
Trichloroethene	U		0.000584	0.00100	1	05/25/2022 08:18	WG1868584
Trichlorofluoromethane	U		0.000827	0.00250	1	05/25/2022 08:18	WG1868584
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/25/2022 08:18	WG1868584
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/25/2022 08:18	WG1868584
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/25/2022 08:18	WG1868584
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/25/2022 08:18	WG1868584
Vinyl chloride	U		0.00116	0.00250	1	05/25/2022 08:18	WG1868584
Xylenes, Total	0.00590	B J	0.000880	0.00650	1	05/25/2022 08:18	WG1868584
(S) Toluene-d8	*98.1*			*75.0-131*		*05/25/2022 08:18*	WG1868584
(S) 4-Bromofluorobenzene	*136*			*67.0-138*		*05/25/2022 08:18*	WG1868584
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*05/25/2022 08:18*	WG1868584

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.0230	0.0600	10	05/31/2022 20:12	WG1871318
Acenaphthene	0.0351	J	0.0209	0.0600	10	05/31/2022 20:12	WG1871318
Acenaphthylene	U		0.0216	0.0600	10	05/31/2022 20:12	WG1871318
Benzo(a)anthracene	0.0596	J	0.0173	0.0600	10	05/31/2022 20:12	WG1871318
Benzo(a)pyrene	0.0461	J	0.0179	0.0600	10	05/31/2022 20:12	WG1871318
Benzo(b)fluoranthene	0.0500	J	0.0153	0.0600	10	05/31/2022 20:12	WG1871318
Benzo(g,h,i)perylene	0.153		0.0177	0.0600	10	05/31/2022 20:12	WG1871318
Benzo(k)fluoranthene	0.0302	J	0.0215	0.0600	10	05/31/2022 20:12	WG1871318
Chrysene	0.0531	J	0.0232	0.0600	10	05/31/2022 20:12	WG1871318
Dibenz(a,h)anthracene	0.0380	J	0.0172	0.0600	10	05/31/2022 20:12	WG1871318
Fluoranthene	0.0625		0.0227	0.0600	10	05/31/2022 20:12	WG1871318
Fluorene	0.0433	J	0.0205	0.0600	10	05/31/2022 20:12	WG1871318
Indeno(1,2,3-cd)pyrene	0.0493	J	0.0181	0.0600	10	05/31/2022 20:12	WG1871318
Naphthalene	0.114	J	0.0408	0.200	10	05/31/2022 20:12	WG1871318
Phenanthrene	0.0810		0.0231	0.0600	10	05/31/2022 20:12	WG1871318
Pyrene	0.154		0.0200	0.0600	10	05/31/2022 20:12	WG1871318
1-Methylnaphthalene	0.126	J	0.0449	0.200	10	05/31/2022 20:12	WG1871318
2-Methylnaphthalene	0.185	J	0.0427	0.200	10	05/31/2022 20:12	WG1871318
2-Chloronaphthalene	U		0.0466	0.200	10	05/31/2022 20:12	WG1871318
(S) p-Terphenyl-d14	*106*			*23.0-120*		*05/31/2022 20:12*	WG1871318
(S) Nitrobenzene-d5	*106*			*14.0-149*		*05/31/2022 20:12*	WG1871318
(S) 2-Fluorobiphenyl	*95.1*			*34.0-125*		*05/31/2022 20:12*	WG1871318

Sample Narrative:

L1496268-07 WG1871318: Dilution due to matrix

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.6		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3 J4	0.0365	0.0500	1	05/25/2022 08:37	WG1868584
Acrylonitrile	U		0.00361	0.0125	1	05/25/2022 08:37	WG1868584
Benzene	U		0.000467	0.00100	1	05/25/2022 08:37	WG1868584
Bromobenzene	U		0.000900	0.0125	1	05/25/2022 08:37	WG1868584
Bromodichloromethane	U		0.000725	0.00250	1	05/25/2022 08:37	WG1868584
Bromoform	U		0.00117	0.0250	1	05/25/2022 08:37	WG1868584
Bromomethane	U		0.00197	0.0125	1	05/25/2022 08:37	WG1868584
n-Butylbenzene	U		0.00525	0.0125	1	05/25/2022 08:37	WG1868584
sec-Butylbenzene	U		0.00288	0.0125	1	05/25/2022 08:37	WG1868584
tert-Butylbenzene	U		0.00195	0.00500	1	05/25/2022 08:37	WG1868584
Carbon tetrachloride	U		0.000898	0.00500	1	05/25/2022 08:37	WG1868584
Chlorobenzene	U		0.000210	0.00250	1	05/25/2022 08:37	WG1868584
Chlorodibromomethane	U		0.000612	0.00250	1	05/25/2022 08:37	WG1868584
Chloroethane	U		0.00170	0.00500	1	05/25/2022 08:37	WG1868584
Chloroform	U		0.00103	0.00250	1	05/25/2022 08:37	WG1868584
Chloromethane	U		0.00435	0.0125	1	05/25/2022 08:37	WG1868584
2-Chlorotoluene	U		0.000865	0.00250	1	05/25/2022 08:37	WG1868584
4-Chlorotoluene	U		0.000450	0.00500	1	05/25/2022 08:37	WG1868584
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/25/2022 08:37	WG1868584
1,2-Dibromoethane	U		0.000648	0.00250	1	05/25/2022 08:37	WG1868584
Dibromomethane	U		0.000750	0.00500	1	05/25/2022 08:37	WG1868584
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/25/2022 08:37	WG1868584
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/25/2022 08:37	WG1868584
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/25/2022 08:37	WG1868584
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/25/2022 08:37	WG1868584
1,1-Dichloroethane	U		0.000491	0.00250	1	05/25/2022 08:37	WG1868584
1,2-Dichloroethane	U		0.000649	0.00250	1	05/25/2022 08:37	WG1868584
1,1-Dichloroethene	U		0.000606	0.00250	1	05/25/2022 08:37	WG1868584
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/25/2022 08:37	WG1868584
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/25/2022 08:37	WG1868584
1,2-Dichloropropane	U		0.00142	0.00500	1	05/25/2022 08:37	WG1868584
1,1-Dichloropropene	U		0.000809	0.00250	1	05/25/2022 08:37	WG1868584
1,3-Dichloropropane	U		0.000501	0.00500	1	05/25/2022 08:37	WG1868584
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/25/2022 08:37	WG1868584
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/25/2022 08:37	WG1868584
2,2-Dichloropropane	U		0.00138	0.00250	1	05/25/2022 08:37	WG1868584
Di-isopropyl ether	U		0.000410	0.00100	1	05/25/2022 08:37	WG1868584
Ethylbenzene	U		0.000737	0.00250	1	05/25/2022 08:37	WG1868584
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/25/2022 08:37	WG1868584
Isopropylbenzene	U		0.000425	0.00250	1	05/25/2022 08:37	WG1868584
p-Isopropyltoluene	U		0.00255	0.00500	1	05/25/2022 08:37	WG1868584
2-Butanone (MEK)	0.0804	J	0.0635	0.100	1	05/25/2022 08:37	WG1868584
Methylene Chloride	U		0.00664	0.0250	1	05/25/2022 08:37	WG1868584
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/25/2022 08:37	WG1868584
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/25/2022 08:37	WG1868584
Naphthalene	U		0.00488	0.0125	1	05/25/2022 08:37	WG1868584
n-Propylbenzene	U		0.000950	0.00500	1	05/25/2022 08:37	WG1868584
Styrene	U		0.000229	0.0125	1	05/25/2022 08:37	WG1868584
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/25/2022 08:37	WG1868584
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/25/2022 08:37	WG1868584

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/25/2022 08:37	WG1868584
Tetrachloroethene	U		0.000896	0.00250	1	05/25/2022 08:37	WG1868584
Toluene	U		0.00130	0.00500	1	05/25/2022 08:37	WG1868584
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/25/2022 08:37	WG1868584
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/25/2022 08:37	WG1868584
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/25/2022 08:37	WG1868584
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/25/2022 08:37	WG1868584
Trichloroethene	U		0.000584	0.00100	1	05/25/2022 08:37	WG1868584
Trichlorofluoromethane	U		0.000827	0.00250	1	05/25/2022 08:37	WG1868584
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/25/2022 08:37	WG1868584
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/25/2022 08:37	WG1868584
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/25/2022 08:37	WG1868584
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/25/2022 08:37	WG1868584
Vinyl chloride	U		0.00116	0.00250	1	05/25/2022 08:37	WG1868584
Xylenes, Total	0.00151	B J	0.000880	0.00650	1	05/25/2022 08:37	WG1868584
(S) Toluene-d8	*103*			*75.0-131*		*05/25/2022 08:37*	WG1868584
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*05/25/2022 08:37*	WG1868584
(S) 1,2-Dichloroethane-d4	*96.5*			*70.0-130*		*05/25/2022 08:37*	WG1868584

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 14:51	WG1871318
Acenaphthene	0.173		0.00209	0.00600	1	05/31/2022 14:51	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 14:51	WG1871318
Benzo(a)anthracene	0.0125		0.00173	0.00600	1	05/31/2022 14:51	WG1871318
Benzo(a)pyrene	0.00603		0.00179	0.00600	1	05/31/2022 14:51	WG1871318
Benzo(b)fluoranthene	0.00557	J	0.00153	0.00600	1	05/31/2022 14:51	WG1871318
Benzo(g,h,i)perylene	0.00412	J	0.00177	0.00600	1	05/31/2022 14:51	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 14:51	WG1871318
Chrysene	0.0153		0.00232	0.00600	1	05/31/2022 14:51	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 14:51	WG1871318
Fluoranthene	0.0416		0.00227	0.00600	1	05/31/2022 14:51	WG1871318
Fluorene	0.294		0.00205	0.00600	1	05/31/2022 14:51	WG1871318
Indeno(1,2,3-cd)pyrene	0.00277	J	0.00181	0.00600	1	05/31/2022 14:51	WG1871318
Naphthalene	0.00732	J	0.00408	0.0200	1	05/31/2022 14:51	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 14:51	WG1871318
Pyrene	0.186		0.00200	0.00600	1	05/31/2022 14:51	WG1871318
1-Methylnaphthalene	0.428		0.00449	0.0200	1	05/31/2022 14:51	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 14:51	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 14:51	WG1871318
(S) p-Terphenyl-d14	*83.8*			*23.0-120*		*05/31/2022 14:51*	WG1871318
(S) Nitrobenzene-d5	*55.1*			*14.0-149*		*05/31/2022 14:51*	WG1871318
(S) 2-Fluorobiphenyl	*66.5*			*34.0-125*		*05/31/2022 14:51*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.0		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 02:21	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 02:21	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 02:21	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 02:21	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 02:21	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 02:21	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 02:21	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 02:21	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 02:21	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 02:21	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 02:21	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 02:21	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 02:21	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 02:21	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 02:21	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 02:21	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 02:21	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 02:21	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 02:21	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 02:21	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 02:21	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 02:21	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 02:21	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 02:21	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 02:21	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 02:21	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 02:21	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 02:21	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 02:21	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 02:21	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 02:21	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 02:21	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 02:21	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 02:21	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 02:21	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 02:21	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 02:21	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 02:21	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 02:21	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 02:21	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 02:21	WG1868318
2-Butanone (MEK)	U		0.0635	0.100	1	05/24/2022 02:21	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 02:21	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 02:21	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 02:21	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 02:21	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 02:21	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 02:21	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 02:21	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 02:21	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 02:21	WG1868318
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 02:21	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 02:21	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 02:21	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 02:21	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 02:21	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 02:21	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 02:21	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 02:21	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 02:21	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 02:21	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 02:21	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 02:21	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 02:21	WG1868318
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 02:21	WG1868318
(S) Toluene-d8	*100*			*75.0-131*		*05/24/2022 02:21*	WG1868318
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*05/24/2022 02:21*	WG1868318
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*05/24/2022 02:21*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00418	J	0.00230	0.00600	1	05/31/2022 17:52	WG1871318
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 17:52	WG1871318
Acenaphthylene	0.00230	J	0.00216	0.00600	1	05/31/2022 17:52	WG1871318
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 17:52	WG1871318
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 17:52	WG1871318
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 17:52	WG1871318
Benzo(g,h,i)perylene	0.0223		0.00177	0.00600	1	05/31/2022 17:52	WG1871318
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 17:52	WG1871318
Chrysene	U		0.00232	0.00600	1	05/31/2022 17:52	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 17:52	WG1871318
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 17:52	WG1871318
Fluorene	U		0.00205	0.00600	1	05/31/2022 17:52	WG1871318
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 17:52	WG1871318
Naphthalene	U		0.00408	0.0200	1	05/31/2022 17:52	WG1871318
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 17:52	WG1871318
Pyrene	U		0.00200	0.00600	1	05/31/2022 17:52	WG1871318
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 17:52	WG1871318
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 17:52	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 17:52	WG1871318
(S) p-Terphenyl-d14	*80.7*			*23.0-120*		*05/31/2022 17:52*	WG1871318
(S) Nitrobenzene-d5	*81.2*			*14.0-149*		*05/31/2022 17:52*	WG1871318
(S) 2-Fluorobiphenyl	*72.7*			*34.0-125*		*05/31/2022 17:52*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.0		1	05/25/2022 18:18	WG1869434

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3 J4	0.730	1.00	20	05/25/2022 09:15	WG1868584
Acrylonitrile	U		0.0722	0.250	20	05/25/2022 09:15	WG1868584
Benzene	U		0.00934	0.0200	20	05/25/2022 09:15	WG1868584
Bromobenzene	U		0.0180	0.250	20	05/25/2022 09:15	WG1868584
Bromodichloromethane	U		0.0145	0.0500	20	05/25/2022 09:15	WG1868584
Bromoform	U		0.0234	0.500	20	05/25/2022 09:15	WG1868584
Bromomethane	U		0.0394	0.250	20	05/25/2022 09:15	WG1868584
n-Butylbenzene	0.560		0.105	0.250	20	05/25/2022 09:15	WG1868584
sec-Butylbenzene	0.348		0.0576	0.250	20	05/25/2022 09:15	WG1868584
tert-Butylbenzene	U		0.0390	0.100	20	05/25/2022 09:15	WG1868584
Carbon tetrachloride	U		0.0180	0.100	20	05/25/2022 09:15	WG1868584
Chlorobenzene	U		0.00420	0.0500	20	05/25/2022 09:15	WG1868584
Chlorodibromomethane	U		0.0122	0.0500	20	05/25/2022 09:15	WG1868584
Chloroethane	U		0.0340	0.100	20	05/25/2022 09:15	WG1868584
Chloroform	U		0.0206	0.0500	20	05/25/2022 09:15	WG1868584
Chloromethane	U		0.0870	0.250	20	05/25/2022 09:15	WG1868584
2-Chlorotoluene	U		0.0173	0.0500	20	05/25/2022 09:15	WG1868584
4-Chlorotoluene	U		0.00900	0.100	20	05/25/2022 09:15	WG1868584
1,2-Dibromo-3-Chloropropane	U		0.0780	0.500	20	05/25/2022 09:15	WG1868584
1,2-Dibromoethane	U		0.0130	0.0500	20	05/25/2022 09:15	WG1868584
Dibromomethane	U		0.0150	0.100	20	05/25/2022 09:15	WG1868584
1,2-Dichlorobenzene	U		0.00850	0.100	20	05/25/2022 09:15	WG1868584
1,3-Dichlorobenzene	U		0.0120	0.100	20	05/25/2022 09:15	WG1868584
1,4-Dichlorobenzene	U		0.0140	0.100	20	05/25/2022 09:15	WG1868584
Dichlorodifluoromethane	U		0.0322	0.0500	20	05/25/2022 09:15	WG1868584
1,1-Dichloroethane	U		0.00982	0.0500	20	05/25/2022 09:15	WG1868584
1,2-Dichloroethane	U		0.0130	0.0500	20	05/25/2022 09:15	WG1868584
1,1-Dichloroethene	U		0.0121	0.0500	20	05/25/2022 09:15	WG1868584
cis-1,2-Dichloroethene	U		0.0147	0.0500	20	05/25/2022 09:15	WG1868584
trans-1,2-Dichloroethene	U		0.0208	0.100	20	05/25/2022 09:15	WG1868584
1,2-Dichloropropane	U		0.0284	0.100	20	05/25/2022 09:15	WG1868584
1,1-Dichloropropene	U		0.0162	0.0500	20	05/25/2022 09:15	WG1868584
1,3-Dichloropropane	U		0.0100	0.100	20	05/25/2022 09:15	WG1868584
cis-1,3-Dichloropropene	U		0.0151	0.0500	20	05/25/2022 09:15	WG1868584
trans-1,3-Dichloropropene	U		0.0228	0.100	20	05/25/2022 09:15	WG1868584
2,2-Dichloropropane	U		0.0276	0.0500	20	05/25/2022 09:15	WG1868584
Di-isopropyl ether	U		0.00820	0.0200	20	05/25/2022 09:15	WG1868584
Ethylbenzene	U		0.0147	0.0500	20	05/25/2022 09:15	WG1868584
Hexachloro-1,3-butadiene	U		0.120	0.500	20	05/25/2022 09:15	WG1868584
Isopropylbenzene	0.113		0.00850	0.0500	20	05/25/2022 09:15	WG1868584
p-Isopropyltoluene	U		0.0510	0.100	20	05/25/2022 09:15	WG1868584
2-Butanone (MEK)	U		1.27	2.00	20	05/25/2022 09:15	WG1868584
Methylene Chloride	U		0.133	0.500	20	05/25/2022 09:15	WG1868584
4-Methyl-2-pentanone (MIBK)	U		0.0456	0.500	20	05/25/2022 09:15	WG1868584
Methyl tert-butyl ether	U		0.00700	0.0200	20	05/25/2022 09:15	WG1868584
Naphthalene	0.265		0.0976	0.250	20	05/25/2022 09:15	WG1868584
n-Propylbenzene	0.201		0.0190	0.100	20	05/25/2022 09:15	WG1868584
Styrene	U		0.00458	0.250	20	05/25/2022 09:15	WG1868584
1,1,1,2-Tetrachloroethane	U		0.0190	0.0500	20	05/25/2022 09:15	WG1868584
1,1,2,2-Tetrachloroethane	U		0.0139	0.0500	20	05/25/2022 09:15	WG1868584

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.0151	0.0500	20	05/25/2022 09:15	WG1868584
Tetrachloroethene	U		0.0179	0.0500	20	05/25/2022 09:15	WG1868584
Toluene	U		0.0260	0.100	20	05/25/2022 09:15	WG1868584
1,2,3-Trichlorobenzene	U		0.147	0.250	20	05/25/2022 09:15	WG1868584
1,2,4-Trichlorobenzene	U		0.0880	0.250	20	05/25/2022 09:15	WG1868584
1,1,1-Trichloroethane	U		0.0185	0.0500	20	05/25/2022 09:15	WG1868584
1,1,2-Trichloroethane	U		0.0119	0.0500	20	05/25/2022 09:15	WG1868584
Trichloroethene	U		0.0117	0.0200	20	05/25/2022 09:15	WG1868584
Trichlorofluoromethane	U		0.0165	0.0500	20	05/25/2022 09:15	WG1868584
1,2,3-Trichloropropane	U		0.0324	0.250	20	05/25/2022 09:15	WG1868584
1,2,4-Trimethylbenzene	0.0661	J	0.0316	0.100	20	05/25/2022 09:15	WG1868584
1,2,3-Trimethylbenzene	U		0.0316	0.100	20	05/25/2022 09:15	WG1868584
1,3,5-Trimethylbenzene	U		0.0400	0.100	20	05/25/2022 09:15	WG1868584
Vinyl chloride	U		0.0232	0.0500	20	05/25/2022 09:15	WG1868584
Xylenes, Total	U		0.0176	0.130	20	05/25/2022 09:15	WG1868584
(S) Toluene-d8	*102*			*75.0-131*		*05/25/2022 09:15*	WG1868584
(S) 4-Bromofluorobenzene	*113*			*67.0-138*		*05/25/2022 09:15*	WG1868584
(S) 1,2-Dichloroethane-d4	*93.8*			*70.0-130*		*05/25/2022 09:15*	WG1868584

Sample Narrative:

L1496268-10 WG1868584: Non-target compounds too high to run at a lower dilution.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	1.12		0.00230	0.00600	1	05/31/2022 18:12	WG1871318
Acenaphthene	5.60		0.105	0.300	50	06/01/2022 23:19	WG1871318
Acenaphthylene	U		0.108	0.300	50	06/01/2022 23:19	WG1871318
Benzo(a)anthracene	0.759		0.00173	0.00600	1	05/31/2022 18:12	WG1871318
Benzo(a)pyrene	0.578		0.00179	0.00600	1	05/31/2022 18:12	WG1871318
Benzo(b)fluoranthene	0.446		0.00153	0.00600	1	05/31/2022 18:12	WG1871318
Benzo(g,h,i)perylene	0.264		0.00177	0.00600	1	05/31/2022 18:12	WG1871318
Benzo(k)fluoranthene	0.0971		0.00215	0.00600	1	05/31/2022 18:12	WG1871318
Chrysene	0.677		0.00232	0.00600	1	05/31/2022 18:12	WG1871318
Dibenz(a,h)anthracene	0.0688		0.00172	0.00600	1	05/31/2022 18:12	WG1871318
Fluoranthene	1.54		0.00227	0.00600	1	05/31/2022 18:12	WG1871318
Fluorene	7.19		0.103	0.300	50	06/01/2022 23:19	WG1871318
Indeno(1,2,3-cd)pyrene	0.197		0.00181	0.00600	1	05/31/2022 18:12	WG1871318
Naphthalene	5.44		0.204	1.00	50	06/01/2022 23:19	WG1871318
Phenanthrene	15.9		0.116	0.300	50	06/01/2022 23:19	WG1871318
Pyrene	2.91		0.00200	0.00600	1	05/31/2022 18:12	WG1871318
1-Methylnaphthalene	73.0		0.225	1.00	50	06/01/2022 23:19	WG1871318
2-Methylnaphthalene	31.0		0.214	1.00	50	06/01/2022 23:19	WG1871318
2-Chloronaphthalene	U		0.233	1.00	50	06/01/2022 23:19	WG1871318
(S) p-Terphenyl-d14	*119*	J7		*23.0-120*		*06/01/2022 23:19*	WG1871318
(S) p-Terphenyl-d14	*67.8*			*23.0-120*		*05/31/2022 18:12*	WG1871318
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*05/31/2022 18:12*	WG1871318
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*06/01/2022 23:19*	WG1871318
(S) 2-Fluorobiphenyl	*0.000*	J2		*34.0-125*		*05/31/2022 18:12*	WG1871318
(S) 2-Fluorobiphenyl	*0.000*	J7		*34.0-125*		*06/01/2022 23:19*	WG1871318

Sample Narrative:

L1496268-10 WG1871318: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.0		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0515	0.0705	1.41	05/24/2022 02:40	WG1868318
Acrylonitrile	U		0.00509	0.0176	1.41	05/24/2022 02:40	WG1868318
Benzene	0.0864		0.000658	0.00141	1.41	05/24/2022 02:40	WG1868318
Bromobenzene	U		0.00127	0.0176	1.41	05/24/2022 02:40	WG1868318
Bromodichloromethane	U		0.00102	0.00353	1.41	05/24/2022 02:40	WG1868318
Bromoform	U		0.00165	0.0353	1.41	05/24/2022 02:40	WG1868318
Bromomethane	U		0.00278	0.0176	1.41	05/24/2022 02:40	WG1868318
n-Butylbenzene	0.110		0.00740	0.0176	1.41	05/24/2022 02:40	WG1868318
sec-Butylbenzene	0.0741		0.00406	0.0176	1.41	05/24/2022 02:40	WG1868318
tert-Butylbenzene	0.00465	J	0.00275	0.00705	1.41	05/24/2022 02:40	WG1868318
Carbon tetrachloride	U		0.00127	0.00705	1.41	05/24/2022 02:40	WG1868318
Chlorobenzene	U		0.000296	0.00353	1.41	05/24/2022 02:40	WG1868318
Chlorodibromomethane	U		0.000863	0.00353	1.41	05/24/2022 02:40	WG1868318
Chloroethane	U		0.00240	0.00705	1.41	05/24/2022 02:40	WG1868318
Chloroform	U		0.00145	0.00353	1.41	05/24/2022 02:40	WG1868318
Chloromethane	U		0.00613	0.0176	1.41	05/24/2022 02:40	WG1868318
2-Chlorotoluene	U		0.00122	0.00353	1.41	05/24/2022 02:40	WG1868318
4-Chlorotoluene	U		0.000635	0.00705	1.41	05/24/2022 02:40	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00550	0.0353	1.41	05/24/2022 02:40	WG1868318
1,2-Dibromoethane	U		0.000914	0.00353	1.41	05/24/2022 02:40	WG1868318
Dibromomethane	U		0.00106	0.00705	1.41	05/24/2022 02:40	WG1868318
1,2-Dichlorobenzene	U		0.000599	0.00705	1.41	05/24/2022 02:40	WG1868318
1,3-Dichlorobenzene	U		0.000846	0.00705	1.41	05/24/2022 02:40	WG1868318
1,4-Dichlorobenzene	U		0.000987	0.00705	1.41	05/24/2022 02:40	WG1868318
Dichlorodifluoromethane	U		0.00227	0.00353	1.41	05/24/2022 02:40	WG1868318
1,1-Dichloroethane	U		0.000692	0.00353	1.41	05/24/2022 02:40	WG1868318
1,2-Dichloroethane	U		0.000915	0.00353	1.41	05/24/2022 02:40	WG1868318
1,1-Dichloroethene	U		0.000854	0.00353	1.41	05/24/2022 02:40	WG1868318
cis-1,2-Dichloroethene	U		0.00103	0.00353	1.41	05/24/2022 02:40	WG1868318
trans-1,2-Dichloroethene	U		0.00147	0.00705	1.41	05/24/2022 02:40	WG1868318
1,2-Dichloropropane	U		0.00200	0.00705	1.41	05/24/2022 02:40	WG1868318
1,1-Dichloropropene	U		0.00114	0.00353	1.41	05/24/2022 02:40	WG1868318
1,3-Dichloropropane	U		0.000706	0.00705	1.41	05/24/2022 02:40	WG1868318
cis-1,3-Dichloropropene	U		0.00107	0.00353	1.41	05/24/2022 02:40	WG1868318
trans-1,3-Dichloropropene	U		0.00161	0.00705	1.41	05/24/2022 02:40	WG1868318
2,2-Dichloropropane	U		0.00195	0.00353	1.41	05/24/2022 02:40	WG1868318
Di-isopropyl ether	U		0.000578	0.00141	1.41	05/24/2022 02:40	WG1868318
Ethylbenzene	0.227		0.00104	0.00353	1.41	05/24/2022 02:40	WG1868318
Hexachloro-1,3-butadiene	U		0.00846	0.0353	1.41	05/24/2022 02:40	WG1868318
Isopropylbenzene	0.154		0.000599	0.00353	1.41	05/24/2022 02:40	WG1868318
p-Isopropyltoluene	0.169		0.00360	0.00705	1.41	05/24/2022 02:40	WG1868318
2-Butanone (MEK)	0.114	J	0.0895	0.141	1.41	05/24/2022 02:40	WG1868318
Methylene Chloride	U		0.00936	0.0353	1.41	05/24/2022 02:40	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00321	0.0353	1.41	05/24/2022 02:40	WG1868318
Methyl tert-butyl ether	U		0.000494	0.00141	1.41	05/24/2022 02:40	WG1868318
Naphthalene	0.513		0.00688	0.0176	1.41	05/24/2022 02:40	WG1868318
n-Propylbenzene	0.125		0.00134	0.00705	1.41	05/24/2022 02:40	WG1868318
Styrene	U		0.000323	0.0176	1.41	05/24/2022 02:40	WG1868318
1,1,1,2-Tetrachloroethane	U		0.00134	0.00353	1.41	05/24/2022 02:40	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000980	0.00353	1.41	05/24/2022 02:40	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.00106	0.00353	1.41	05/24/2022 02:40	WG1868318
Tetrachloroethene	U		0.00126	0.00353	1.41	05/24/2022 02:40	WG1868318
Toluene	0.498		0.00183	0.00705	1.41	05/24/2022 02:40	WG1868318
1,2,3-Trichlorobenzene	U		0.0103	0.0176	1.41	05/24/2022 02:40	WG1868318
1,2,4-Trichlorobenzene	U		0.00620	0.0176	1.41	05/24/2022 02:40	WG1868318
1,1,1-Trichloroethane	U		0.00130	0.00353	1.41	05/24/2022 02:40	WG1868318
1,1,2-Trichloroethane	U		0.000842	0.00353	1.41	05/24/2022 02:40	WG1868318
Trichloroethene	U		0.000823	0.00141	1.41	05/24/2022 02:40	WG1868318
Trichlorofluoromethane	U		0.00117	0.00353	1.41	05/24/2022 02:40	WG1868318
1,2,3-Trichloropropane	U		0.00228	0.0176	1.41	05/24/2022 02:40	WG1868318
1,2,4-Trimethylbenzene	0.620		0.00223	0.00705	1.41	05/24/2022 02:40	WG1868318
1,2,3-Trimethylbenzene	0.250		0.00223	0.00705	1.41	05/24/2022 02:40	WG1868318
1,3,5-Trimethylbenzene	0.305		0.00282	0.00705	1.41	05/24/2022 02:40	WG1868318
Vinyl chloride	U		0.00164	0.00353	1.41	05/24/2022 02:40	WG1868318
Xylenes, Total	1.36		0.00124	0.00917	1.41	05/24/2022 02:40	WG1868318
(S) Toluene-d8	*99.8*			*75.0-131*		*05/24/2022 02:40*	WG1868318
(S) 4-Bromofluorobenzene	*141*	J1		*67.0-138*		*05/24/2022 02:40*	WG1868318
(S) 1,2-Dichloroethane-d4	*89.9*			*70.0-130*		*05/24/2022 02:40*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.186		0.00230	0.00600	1	05/31/2022 16:11	WG1871318
Acenaphthene	0.200		0.00209	0.00600	1	05/31/2022 16:11	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 16:11	WG1871318
Benzo(a)anthracene	0.250		0.00173	0.00600	1	05/31/2022 16:11	WG1871318
Benzo(a)pyrene	0.126		0.00179	0.00600	1	05/31/2022 16:11	WG1871318
Benzo(b)fluoranthene	0.152		0.00153	0.00600	1	05/31/2022 16:11	WG1871318
Benzo(g,h,i)perylene	0.149		0.00177	0.00600	1	05/31/2022 16:11	WG1871318
Benzo(k)fluoranthene	0.0372		0.00215	0.00600	1	05/31/2022 16:11	WG1871318
Chrysene	0.179		0.00232	0.00600	1	05/31/2022 16:11	WG1871318
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 16:11	WG1871318
Fluoranthene	0.409		0.00227	0.00600	1	05/31/2022 16:11	WG1871318
Fluorene	0.279		0.00205	0.00600	1	05/31/2022 16:11	WG1871318
Indeno(1,2,3-cd)pyrene	0.0702		0.00181	0.00600	1	05/31/2022 16:11	WG1871318
Naphthalene	0.886		0.00408	0.0200	1	05/31/2022 16:11	WG1871318
Phenanthrene	2.07		0.00231	0.00600	1	05/31/2022 16:11	WG1871318
Pyrene	0.370		0.00200	0.00600	1	05/31/2022 16:11	WG1871318
1-Methylnaphthalene	1.37		0.00449	0.0200	1	05/31/2022 16:11	WG1871318
2-Methylnaphthalene	1.65		0.00427	0.0200	1	05/31/2022 16:11	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 16:11	WG1871318
(S) p-Terphenyl-d14	*82.7*			*23.0-120*		*05/31/2022 16:11*	WG1871318
(S) Nitrobenzene-d5	*133*			*14.0-149*		*05/31/2022 16:11*	WG1871318
(S) 2-Fluorobiphenyl	*83.2*			*34.0-125*		*05/31/2022 16:11*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.1		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3 J4	0.507	0.695	13.9	05/25/2022 09:34	WG1868584
Acrylonitrile	U		0.0502	0.174	13.9	05/25/2022 09:34	WG1868584
Benzene	U		0.00649	0.0139	13.9	05/25/2022 09:34	WG1868584
Bromobenzene	U		0.0125	0.174	13.9	05/25/2022 09:34	WG1868584
Bromodichloromethane	U		0.0101	0.0348	13.9	05/25/2022 09:34	WG1868584
Bromoform	U		0.0163	0.348	13.9	05/25/2022 09:34	WG1868584
Bromomethane	U		0.0274	0.174	13.9	05/25/2022 09:34	WG1868584
n-Butylbenzene	0.286		0.0730	0.174	13.9	05/25/2022 09:34	WG1868584
sec-Butylbenzene	0.152	J	0.0400	0.174	13.9	05/25/2022 09:34	WG1868584
tert-Butylbenzene	U		0.0271	0.0695	13.9	05/25/2022 09:34	WG1868584
Carbon tetrachloride	0.0237	J	0.0125	0.0695	13.9	05/25/2022 09:34	WG1868584
Chlorobenzene	U		0.00292	0.0348	13.9	05/25/2022 09:34	WG1868584
Chlorodibromomethane	U		0.00851	0.0348	13.9	05/25/2022 09:34	WG1868584
Chloroethane	U		0.0236	0.0695	13.9	05/25/2022 09:34	WG1868584
Chloroform	U		0.0143	0.0348	13.9	05/25/2022 09:34	WG1868584
Chloromethane	U		0.0605	0.174	13.9	05/25/2022 09:34	WG1868584
2-Chlorotoluene	U		0.0120	0.0348	13.9	05/25/2022 09:34	WG1868584
4-Chlorotoluene	U		0.00626	0.0695	13.9	05/25/2022 09:34	WG1868584
1,2-Dibromo-3-Chloropropane	U		0.0542	0.348	13.9	05/25/2022 09:34	WG1868584
1,2-Dibromoethane	U		0.00901	0.0348	13.9	05/25/2022 09:34	WG1868584
Dibromomethane	U		0.0104	0.0695	13.9	05/25/2022 09:34	WG1868584
1,2-Dichlorobenzene	U		0.00591	0.0695	13.9	05/25/2022 09:34	WG1868584
1,3-Dichlorobenzene	U		0.00834	0.0695	13.9	05/25/2022 09:34	WG1868584
1,4-Dichlorobenzene	U		0.00973	0.0695	13.9	05/25/2022 09:34	WG1868584
Dichlorodifluoromethane	U		0.0224	0.0348	13.9	05/25/2022 09:34	WG1868584
1,1-Dichloroethane	U		0.00682	0.0348	13.9	05/25/2022 09:34	WG1868584
1,2-Dichloroethane	U		0.00902	0.0348	13.9	05/25/2022 09:34	WG1868584
1,1-Dichloroethene	U		0.00842	0.0348	13.9	05/25/2022 09:34	WG1868584
cis-1,2-Dichloroethene	U		0.0102	0.0348	13.9	05/25/2022 09:34	WG1868584
trans-1,2-Dichloroethene	U		0.0145	0.0695	13.9	05/25/2022 09:34	WG1868584
1,2-Dichloropropane	U		0.0197	0.0695	13.9	05/25/2022 09:34	WG1868584
1,1-Dichloropropene	U		0.0112	0.0348	13.9	05/25/2022 09:34	WG1868584
1,3-Dichloropropane	U		0.00696	0.0695	13.9	05/25/2022 09:34	WG1868584
cis-1,3-Dichloropropene	U		0.0105	0.0348	13.9	05/25/2022 09:34	WG1868584
trans-1,3-Dichloropropene	U		0.0158	0.0695	13.9	05/25/2022 09:34	WG1868584
2,2-Dichloropropane	U		0.0192	0.0348	13.9	05/25/2022 09:34	WG1868584
Di-isopropyl ether	U		0.00570	0.0139	13.9	05/25/2022 09:34	WG1868584
Ethylbenzene	U		0.0102	0.0348	13.9	05/25/2022 09:34	WG1868584
Hexachloro-1,3-butadiene	U		0.0834	0.348	13.9	05/25/2022 09:34	WG1868584
Isopropylbenzene	0.193		0.00591	0.0348	13.9	05/25/2022 09:34	WG1868584
p-Isopropyltoluene	0.231		0.0354	0.0695	13.9	05/25/2022 09:34	WG1868584
2-Butanone (MEK)	U		0.883	1.39	13.9	05/25/2022 09:34	WG1868584
Methylene Chloride	U		0.0923	0.348	13.9	05/25/2022 09:34	WG1868584
4-Methyl-2-pentanone (MIBK)	U		0.0317	0.348	13.9	05/25/2022 09:34	WG1868584
Methyl tert-butyl ether	U		0.00487	0.0139	13.9	05/25/2022 09:34	WG1868584
Naphthalene	0.355		0.0678	0.174	13.9	05/25/2022 09:34	WG1868584
n-Propylbenzene	0.222		0.0132	0.0695	13.9	05/25/2022 09:34	WG1868584
Styrene	U		0.00318	0.174	13.9	05/25/2022 09:34	WG1868584
1,1,1,2-Tetrachloroethane	U		0.0132	0.0348	13.9	05/25/2022 09:34	WG1868584
1,1,2,2-Tetrachloroethane	U		0.00966	0.0348	13.9	05/25/2022 09:34	WG1868584

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.0105	0.0348	13.9	05/25/2022 09:34	WG1868584
Tetrachloroethene	U		0.0125	0.0348	13.9	05/25/2022 09:34	WG1868584
Toluene	U		0.0181	0.0695	13.9	05/25/2022 09:34	WG1868584
1,2,3-Trichlorobenzene	U		0.102	0.174	13.9	05/25/2022 09:34	WG1868584
1,2,4-Trichlorobenzene	U		0.0612	0.174	13.9	05/25/2022 09:34	WG1868584
1,1,1-Trichloroethane	U		0.0128	0.0348	13.9	05/25/2022 09:34	WG1868584
1,1,2-Trichloroethane	0.367		0.00830	0.0348	13.9	05/25/2022 09:34	WG1868584
Trichloroethene	0.685		0.00812	0.0139	13.9	05/25/2022 09:34	WG1868584
Trichlorofluoromethane	U		0.0115	0.0348	13.9	05/25/2022 09:34	WG1868584
1,2,3-Trichloropropane	U		0.0225	0.174	13.9	05/25/2022 09:34	WG1868584
1,2,4-Trimethylbenzene	0.122		0.0220	0.0695	13.9	05/25/2022 09:34	WG1868584
1,2,3-Trimethylbenzene	0.389		0.0220	0.0695	13.9	05/25/2022 09:34	WG1868584
1,3,5-Trimethylbenzene	0.813		0.0278	0.0695	13.9	05/25/2022 09:34	WG1868584
Vinyl chloride	U		0.0161	0.0348	13.9	05/25/2022 09:34	WG1868584
Xylenes, Total	0.0244	B J	0.0122	0.0904	13.9	05/25/2022 09:34	WG1868584
(S) Toluene-d8	*103*			*75.0-131*		*05/25/2022 09:34*	WG1868584
(S) 4-Bromofluorobenzene	*117*			*67.0-138*		*05/25/2022 09:34*	WG1868584
(S) 1,2-Dichloroethane-d4	*95.2*			*70.0-130*		*05/25/2022 09:34*	WG1868584

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.418		0.00230	0.00600	1	05/31/2022 18:32	WG1871318
Acenaphthene	0.316		0.00209	0.00600	1	05/31/2022 18:32	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 18:32	WG1871318
Benzo(a)anthracene	1.06		0.00173	0.00600	1	05/31/2022 18:32	WG1871318
Benzo(a)pyrene	0.612		0.00179	0.00600	1	05/31/2022 18:32	WG1871318
Benzo(b)fluoranthene	0.824		0.00153	0.00600	1	05/31/2022 18:32	WG1871318
Benzo(g,h,i)perylene	0.293		0.00177	0.00600	1	05/31/2022 18:32	WG1871318
Benzo(k)fluoranthene	0.304		0.00215	0.00600	1	05/31/2022 18:32	WG1871318
Chrysene	0.931		0.00232	0.00600	1	05/31/2022 18:32	WG1871318
Dibenz(a,h)anthracene	0.0951		0.00172	0.00600	1	05/31/2022 18:32	WG1871318
Fluoranthene	1.93		0.00227	0.00600	1	05/31/2022 18:32	WG1871318
Fluorene	0.288		0.00205	0.00600	1	05/31/2022 18:32	WG1871318
Indeno(1,2,3-cd)pyrene	0.367		0.00181	0.00600	1	05/31/2022 18:32	WG1871318
Naphthalene	1.08		0.00408	0.0200	1	05/31/2022 18:32	WG1871318
Phenanthrene	4.73		0.0231	0.0600	10	06/01/2022 22:27	WG1871318
Pyrene	1.51		0.00200	0.00600	1	05/31/2022 18:32	WG1871318
1-Methylnaphthalene	1.77		0.00449	0.0200	1	05/31/2022 18:32	WG1871318
2-Methylnaphthalene	2.11		0.00427	0.0200	1	05/31/2022 18:32	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 18:32	WG1871318
(S) p-Terphenyl-d14	*90.5*			*23.0-120*		*05/31/2022 18:32*	WG1871318
(S) p-Terphenyl-d14	*97.3*			*23.0-120*		*06/01/2022 22:27*	WG1871318
(S) Nitrobenzene-d5	*157*	J1		*14.0-149*		*05/31/2022 18:32*	WG1871318
(S) Nitrobenzene-d5	*46.1*			*14.0-149*		*06/01/2022 22:27*	WG1871318
(S) 2-Fluorobiphenyl	*99.6*			*34.0-125*		*05/31/2022 18:32*	WG1871318
(S) 2-Fluorobiphenyl	*77.2*			*34.0-125*		*06/01/2022 22:27*	WG1871318

Sample Narrative:

L1496268-12 WG1871318: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.0		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 02:59	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 02:59	WG1868318
Benzene	0.000844	J	0.000467	0.00100	1	05/24/2022 02:59	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 02:59	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 02:59	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 02:59	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 02:59	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 02:59	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 02:59	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 02:59	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 02:59	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 02:59	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 02:59	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 02:59	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 02:59	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 02:59	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 02:59	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 02:59	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 02:59	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 02:59	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 02:59	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 02:59	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 02:59	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 02:59	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 02:59	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 02:59	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 02:59	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 02:59	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 02:59	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 02:59	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 02:59	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 02:59	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 02:59	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 02:59	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 02:59	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 02:59	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 02:59	WG1868318
Ethylbenzene	0.00159	J	0.000737	0.00250	1	05/24/2022 02:59	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 02:59	WG1868318
Isopropylbenzene	0.00191	J	0.000425	0.00250	1	05/24/2022 02:59	WG1868318
p-Isopropyltoluene	0.00296	J	0.00255	0.00500	1	05/24/2022 02:59	WG1868318
2-Butanone (MEK)	0.0656	J	0.0635	0.100	1	05/24/2022 02:59	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 02:59	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 02:59	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 02:59	WG1868318
Naphthalene	0.0257		0.00488	0.0125	1	05/24/2022 02:59	WG1868318
n-Propylbenzene	0.00298	J	0.000950	0.00500	1	05/24/2022 02:59	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 02:59	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 02:59	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 02:59	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 02:59	WG1868318
Tetrachloroethene	0.0121		0.000896	0.00250	1	05/24/2022 02:59	WG1868318
Toluene	0.00632		0.00130	0.00500	1	05/24/2022 02:59	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 02:59	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 02:59	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 02:59	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 02:59	WG1868318
Trichloroethene	0.0101		0.000584	0.00100	1	05/24/2022 02:59	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 02:59	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 02:59	WG1868318
1,2,4-Trimethylbenzene	0.0128		0.00158	0.00500	1	05/24/2022 02:59	WG1868318
1,2,3-Trimethylbenzene	0.00801		0.00158	0.00500	1	05/24/2022 02:59	WG1868318
1,3,5-Trimethylbenzene	0.00904		0.00200	0.00500	1	05/24/2022 02:59	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 02:59	WG1868318
Xylenes, Total	0.0187		0.000880	0.00650	1	05/24/2022 02:59	WG1868318
(S) Toluene-d8	*102*			*75.0-131*		*05/24/2022 02:59*	WG1868318
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*05/24/2022 02:59*	WG1868318
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*05/24/2022 02:59*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.280		0.00230	0.00600	1	05/31/2022 17:32	WG1871318
Acenaphthene	0.172		0.00209	0.00600	1	05/31/2022 17:32	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 17:32	WG1871318
Benzo(a)anthracene	1.13		0.00173	0.00600	1	05/31/2022 17:32	WG1871318
Benzo(a)pyrene	0.780		0.00179	0.00600	1	05/31/2022 17:32	WG1871318
Benzo(b)fluoranthene	1.14		0.00153	0.00600	1	05/31/2022 17:32	WG1871318
Benzo(g,h,i)perylene	0.517		0.00177	0.00600	1	05/31/2022 17:32	WG1871318
Benzo(k)fluoranthene	0.363		0.00215	0.00600	1	05/31/2022 17:32	WG1871318
Chrysene	1.15		0.00232	0.00600	1	05/31/2022 17:32	WG1871318
Dibenz(a,h)anthracene	0.121		0.00172	0.00600	1	05/31/2022 17:32	WG1871318
Fluoranthene	2.38		0.00227	0.00600	1	05/31/2022 17:32	WG1871318
Fluorene	0.110		0.00205	0.00600	1	05/31/2022 17:32	WG1871318
Indeno(1,2,3-cd)pyrene	0.569		0.00181	0.00600	1	05/31/2022 17:32	WG1871318
Naphthalene	0.232		0.00408	0.0200	1	05/31/2022 17:32	WG1871318
Phenanthrene	1.91		0.00231	0.00600	1	05/31/2022 17:32	WG1871318
Pyrene	1.93		0.00200	0.00600	1	05/31/2022 17:32	WG1871318
1-Methylnaphthalene	0.334		0.00449	0.0200	1	05/31/2022 17:32	WG1871318
2-Methylnaphthalene	0.411		0.00427	0.0200	1	05/31/2022 17:32	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 17:32	WG1871318
(S) p-Terphenyl-d14	*96.5*			*23.0-120*		*05/31/2022 17:32*	WG1871318
(S) Nitrobenzene-d5	*85.4*			*14.0-149*		*05/31/2022 17:32*	WG1871318
(S) 2-Fluorobiphenyl	*89.2*			*34.0-125*		*05/31/2022 17:32*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.7		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.181		0.0496	0.0680	1.36	05/24/2022 03:18	WG1868318
Acrylonitrile	U		0.00491	0.0170	1.36	05/24/2022 03:18	WG1868318
Benzene	0.00626		0.000635	0.00136	1.36	05/24/2022 03:18	WG1868318
Bromobenzene	U		0.00122	0.0170	1.36	05/24/2022 03:18	WG1868318
Bromodichloromethane	U		0.000986	0.00340	1.36	05/24/2022 03:18	WG1868318
Bromoform	U		0.00159	0.0340	1.36	05/24/2022 03:18	WG1868318
Bromomethane	U		0.00268	0.0170	1.36	05/24/2022 03:18	WG1868318
n-Butylbenzene	0.0218		0.00714	0.0170	1.36	05/24/2022 03:18	WG1868318
sec-Butylbenzene	0.0113	J	0.00392	0.0170	1.36	05/24/2022 03:18	WG1868318
tert-Butylbenzene	U		0.00265	0.00680	1.36	05/24/2022 03:18	WG1868318
Carbon tetrachloride	U		0.00122	0.00680	1.36	05/24/2022 03:18	WG1868318
Chlorobenzene	U		0.000286	0.00340	1.36	05/24/2022 03:18	WG1868318
Chlorodibromomethane	U		0.000832	0.00340	1.36	05/24/2022 03:18	WG1868318
Chloroethane	U		0.00231	0.00680	1.36	05/24/2022 03:18	WG1868318
Chloroform	U		0.00140	0.00340	1.36	05/24/2022 03:18	WG1868318
Chloromethane	U		0.00592	0.0170	1.36	05/24/2022 03:18	WG1868318
2-Chlorotoluene	U		0.00118	0.00340	1.36	05/24/2022 03:18	WG1868318
4-Chlorotoluene	U		0.000612	0.00680	1.36	05/24/2022 03:18	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00530	0.0340	1.36	05/24/2022 03:18	WG1868318
1,2-Dibromoethane	U		0.000881	0.00340	1.36	05/24/2022 03:18	WG1868318
Dibromomethane	U		0.00102	0.00680	1.36	05/24/2022 03:18	WG1868318
1,2-Dichlorobenzene	U		0.000578	0.00680	1.36	05/24/2022 03:18	WG1868318
1,3-Dichlorobenzene	U		0.000816	0.00680	1.36	05/24/2022 03:18	WG1868318
1,4-Dichlorobenzene	U		0.000952	0.00680	1.36	05/24/2022 03:18	WG1868318
Dichlorodifluoromethane	U		0.00219	0.00340	1.36	05/24/2022 03:18	WG1868318
1,1-Dichloroethane	U		0.000668	0.00340	1.36	05/24/2022 03:18	WG1868318
1,2-Dichloroethane	U		0.000883	0.00340	1.36	05/24/2022 03:18	WG1868318
1,1-Dichloroethene	U		0.000824	0.00340	1.36	05/24/2022 03:18	WG1868318
cis-1,2-Dichloroethene	0.0130		0.000998	0.00340	1.36	05/24/2022 03:18	WG1868318
trans-1,2-Dichloroethene	U		0.00141	0.00680	1.36	05/24/2022 03:18	WG1868318
1,2-Dichloropropane	U		0.00193	0.00680	1.36	05/24/2022 03:18	WG1868318
1,1-Dichloropropene	U		0.00110	0.00340	1.36	05/24/2022 03:18	WG1868318
1,3-Dichloropropane	U		0.000681	0.00680	1.36	05/24/2022 03:18	WG1868318
cis-1,3-Dichloropropene	U		0.00103	0.00340	1.36	05/24/2022 03:18	WG1868318
trans-1,3-Dichloropropene	U		0.00155	0.00680	1.36	05/24/2022 03:18	WG1868318
2,2-Dichloropropane	U		0.00188	0.00340	1.36	05/24/2022 03:18	WG1868318
Di-isopropyl ether	U		0.000558	0.00136	1.36	05/24/2022 03:18	WG1868318
Ethylbenzene	0.0656		0.00100	0.00340	1.36	05/24/2022 03:18	WG1868318
Hexachloro-1,3-butadiene	U		0.00816	0.0340	1.36	05/24/2022 03:18	WG1868318
Isopropylbenzene	0.0181		0.000578	0.00340	1.36	05/24/2022 03:18	WG1868318
p-Isopropyltoluene	0.0281		0.00347	0.00680	1.36	05/24/2022 03:18	WG1868318
2-Butanone (MEK)	0.0952	J	0.0864	0.136	1.36	05/24/2022 03:18	WG1868318
Methylene Chloride	U		0.00903	0.0340	1.36	05/24/2022 03:18	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00310	0.0340	1.36	05/24/2022 03:18	WG1868318
Methyl tert-butyl ether	U		0.000476	0.00136	1.36	05/24/2022 03:18	WG1868318
Naphthalene	0.118		0.00664	0.0170	1.36	05/24/2022 03:18	WG1868318
n-Propylbenzene	0.0198		0.00129	0.00680	1.36	05/24/2022 03:18	WG1868318
Styrene	U		0.000311	0.0170	1.36	05/24/2022 03:18	WG1868318
1,1,1,2-Tetrachloroethane	U		0.00129	0.00340	1.36	05/24/2022 03:18	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000945	0.00340	1.36	05/24/2022 03:18	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.00103	0.00340	1.36	05/24/2022 03:18	WG1868318
Tetrachloroethene	U		0.00122	0.00340	1.36	05/24/2022 03:18	WG1868318
Toluene	0.0123		0.00177	0.00680	1.36	05/24/2022 03:18	WG1868318
1,2,3-Trichlorobenzene	U		0.00997	0.0170	1.36	05/24/2022 03:18	WG1868318
1,2,4-Trichlorobenzene	U		0.00598	0.0170	1.36	05/24/2022 03:18	WG1868318
1,1,1-Trichloroethane	U		0.00126	0.00340	1.36	05/24/2022 03:18	WG1868318
1,1,2-Trichloroethane	0.0110		0.000812	0.00340	1.36	05/24/2022 03:18	WG1868318
Trichloroethene	0.0497		0.000794	0.00136	1.36	05/24/2022 03:18	WG1868318
Trichlorofluoromethane	U		0.00112	0.00340	1.36	05/24/2022 03:18	WG1868318
1,2,3-Trichloropropane	U		0.00220	0.0170	1.36	05/24/2022 03:18	WG1868318
1,2,4-Trimethylbenzene	0.125		0.00215	0.00680	1.36	05/24/2022 03:18	WG1868318
1,2,3-Trimethylbenzene	0.0840		0.00215	0.00680	1.36	05/24/2022 03:18	WG1868318
1,3,5-Trimethylbenzene	0.0909		0.00272	0.00680	1.36	05/24/2022 03:18	WG1868318
Vinyl chloride	U		0.00158	0.00340	1.36	05/24/2022 03:18	WG1868318
Xylenes, Total	0.0621		0.00120	0.00884	1.36	05/24/2022 03:18	WG1868318
(S) Toluene-d8	*102*			*75.0-131*		*05/24/2022 03:18*	WG1868318
(S) 4-Bromofluorobenzene	*112*			*67.0-138*		*05/24/2022 03:18*	WG1868318
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*05/24/2022 03:18*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.0555		0.00230	0.00600	1	05/31/2022 15:31	WG1871318
Acenaphthene	0.0309		0.00209	0.00600	1	05/31/2022 15:31	WG1871318
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 15:31	WG1871318
Benzo(a)anthracene	0.163		0.00173	0.00600	1	05/31/2022 15:31	WG1871318
Benzo(a)pyrene	0.125		0.00179	0.00600	1	05/31/2022 15:31	WG1871318
Benzo(b)fluoranthene	0.160		0.00153	0.00600	1	05/31/2022 15:31	WG1871318
Benzo(g,h,i)perylene	0.0848		0.00177	0.00600	1	05/31/2022 15:31	WG1871318
Benzo(k)fluoranthene	0.0610		0.00215	0.00600	1	05/31/2022 15:31	WG1871318
Chrysene	0.141		0.00232	0.00600	1	05/31/2022 15:31	WG1871318
Dibenz(a,h)anthracene	0.0185		0.00172	0.00600	1	05/31/2022 15:31	WG1871318
Fluoranthene	0.317		0.00227	0.00600	1	05/31/2022 15:31	WG1871318
Fluorene	0.0296		0.00205	0.00600	1	05/31/2022 15:31	WG1871318
Indeno(1,2,3-cd)pyrene	0.0823		0.00181	0.00600	1	05/31/2022 15:31	WG1871318
Naphthalene	0.218		0.00408	0.0200	1	05/31/2022 15:31	WG1871318
Phenanthrene	0.482		0.00231	0.00600	1	05/31/2022 15:31	WG1871318
Pyrene	0.292		0.00200	0.00600	1	05/31/2022 15:31	WG1871318
1-Methylnaphthalene	0.387		0.00449	0.0200	1	05/31/2022 15:31	WG1871318
2-Methylnaphthalene	0.469		0.00427	0.0200	1	05/31/2022 15:31	WG1871318
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 15:31	WG1871318
(S) p-Terphenyl-d14	*65.3*			*23.0-120*		*05/31/2022 15:31*	WG1871318
(S) Nitrobenzene-d5	*48.7*			*14.0-149*		*05/31/2022 15:31*	WG1871318
(S) 2-Fluorobiphenyl	*52.4*			*34.0-125*		*05/31/2022 15:31*	WG1871318

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.7		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0365	0.0500	1	05/24/2022 03:37	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 03:37	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 03:37	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 03:37	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 03:37	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 03:37	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 03:37	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 03:37	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 03:37	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 03:37	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 03:37	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 03:37	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 03:37	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 03:37	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 03:37	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 03:37	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 03:37	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 03:37	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 03:37	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 03:37	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 03:37	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 03:37	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 03:37	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 03:37	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 03:37	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 03:37	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 03:37	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 03:37	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 03:37	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 03:37	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 03:37	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 03:37	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 03:37	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 03:37	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 03:37	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 03:37	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 03:37	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 03:37	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 03:37	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 03:37	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 03:37	WG1868318
2-Butanone (MEK)	U		0.0635	0.100	1	05/24/2022 03:37	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 03:37	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 03:37	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 03:37	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 03:37	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 03:37	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 03:37	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 03:37	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 03:37	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 03:37	WG1868318
Tetrachloroethene	0.0165		0.000896	0.00250	1	05/24/2022 03:37	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 03:37	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 03:37	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 03:37	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 03:37	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 03:37	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 03:37	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 03:37	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 03:37	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 03:37	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 03:37	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 03:37	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 03:37	WG1868318
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 03:37	WG1868318
(S) Toluene-d8	*103*			*75.0-131*		*05/24/2022 03:37*	WG1868318
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*05/24/2022 03:37*	WG1868318
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*05/24/2022 03:37*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 12:06	WG1871319
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 12:06	WG1871319
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 12:06	WG1871319
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 12:06	WG1871319
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 12:06	WG1871319
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 12:06	WG1871319
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 12:06	WG1871319
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 12:06	WG1871319
Chrysene	U		0.00232	0.00600	1	05/31/2022 12:06	WG1871319
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 12:06	WG1871319
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 12:06	WG1871319
Fluorene	U		0.00205	0.00600	1	05/31/2022 12:06	WG1871319
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 12:06	WG1871319
Naphthalene	U		0.00408	0.0200	1	05/31/2022 12:06	WG1871319
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 12:06	WG1871319
Pyrene	U		0.00200	0.00600	1	05/31/2022 12:06	WG1871319
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 12:06	WG1871319
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 12:06	WG1871319
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 12:06	WG1871319
(S) p-Terphenyl-d14	*98.2*			*23.0-120*		*05/31/2022 12:06*	WG1871319
(S) Nitrobenzene-d5	*92.6*			*14.0-149*		*05/31/2022 12:06*	WG1871319
(S) 2-Fluorobiphenyl	*79.5*			*34.0-125*		*05/31/2022 12:06*	WG1871319

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.0		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.221		0.0365	0.0500	1	05/24/2022 03:56	WG1868318
Acrylonitrile	U		0.00361	0.0125	1	05/24/2022 03:56	WG1868318
Benzene	U		0.000467	0.00100	1	05/24/2022 03:56	WG1868318
Bromobenzene	U		0.000900	0.0125	1	05/24/2022 03:56	WG1868318
Bromodichloromethane	U		0.000725	0.00250	1	05/24/2022 03:56	WG1868318
Bromoform	U		0.00117	0.0250	1	05/24/2022 03:56	WG1868318
Bromomethane	U		0.00197	0.0125	1	05/24/2022 03:56	WG1868318
n-Butylbenzene	U		0.00525	0.0125	1	05/24/2022 03:56	WG1868318
sec-Butylbenzene	U		0.00288	0.0125	1	05/24/2022 03:56	WG1868318
tert-Butylbenzene	U		0.00195	0.00500	1	05/24/2022 03:56	WG1868318
Carbon tetrachloride	U		0.000898	0.00500	1	05/24/2022 03:56	WG1868318
Chlorobenzene	U		0.000210	0.00250	1	05/24/2022 03:56	WG1868318
Chlorodibromomethane	U		0.000612	0.00250	1	05/24/2022 03:56	WG1868318
Chloroethane	U		0.00170	0.00500	1	05/24/2022 03:56	WG1868318
Chloroform	U		0.00103	0.00250	1	05/24/2022 03:56	WG1868318
Chloromethane	U		0.00435	0.0125	1	05/24/2022 03:56	WG1868318
2-Chlorotoluene	U		0.000865	0.00250	1	05/24/2022 03:56	WG1868318
4-Chlorotoluene	U		0.000450	0.00500	1	05/24/2022 03:56	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	05/24/2022 03:56	WG1868318
1,2-Dibromoethane	U		0.000648	0.00250	1	05/24/2022 03:56	WG1868318
Dibromomethane	U		0.000750	0.00500	1	05/24/2022 03:56	WG1868318
1,2-Dichlorobenzene	U		0.000425	0.00500	1	05/24/2022 03:56	WG1868318
1,3-Dichlorobenzene	U		0.000600	0.00500	1	05/24/2022 03:56	WG1868318
1,4-Dichlorobenzene	U		0.000700	0.00500	1	05/24/2022 03:56	WG1868318
Dichlorodifluoromethane	U		0.00161	0.00250	1	05/24/2022 03:56	WG1868318
1,1-Dichloroethane	U		0.000491	0.00250	1	05/24/2022 03:56	WG1868318
1,2-Dichloroethane	U		0.000649	0.00250	1	05/24/2022 03:56	WG1868318
1,1-Dichloroethene	U		0.000606	0.00250	1	05/24/2022 03:56	WG1868318
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	05/24/2022 03:56	WG1868318
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	05/24/2022 03:56	WG1868318
1,2-Dichloropropane	U		0.00142	0.00500	1	05/24/2022 03:56	WG1868318
1,1-Dichloropropene	U		0.000809	0.00250	1	05/24/2022 03:56	WG1868318
1,3-Dichloropropane	U		0.000501	0.00500	1	05/24/2022 03:56	WG1868318
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	05/24/2022 03:56	WG1868318
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	05/24/2022 03:56	WG1868318
2,2-Dichloropropane	U		0.00138	0.00250	1	05/24/2022 03:56	WG1868318
Di-isopropyl ether	U		0.000410	0.00100	1	05/24/2022 03:56	WG1868318
Ethylbenzene	U		0.000737	0.00250	1	05/24/2022 03:56	WG1868318
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	05/24/2022 03:56	WG1868318
Isopropylbenzene	U		0.000425	0.00250	1	05/24/2022 03:56	WG1868318
p-Isopropyltoluene	U		0.00255	0.00500	1	05/24/2022 03:56	WG1868318
2-Butanone (MEK)	U		0.0635	0.100	1	05/24/2022 03:56	WG1868318
Methylene Chloride	U		0.00664	0.0250	1	05/24/2022 03:56	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250	1	05/24/2022 03:56	WG1868318
Methyl tert-butyl ether	U		0.000350	0.00100	1	05/24/2022 03:56	WG1868318
Naphthalene	U		0.00488	0.0125	1	05/24/2022 03:56	WG1868318
n-Propylbenzene	U		0.000950	0.00500	1	05/24/2022 03:56	WG1868318
Styrene	U		0.000229	0.0125	1	05/24/2022 03:56	WG1868318
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	05/24/2022 03:56	WG1868318
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250	1	05/24/2022 03:56	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	05/24/2022 03:56	WG1868318
Tetrachloroethene	U		0.000896	0.00250	1	05/24/2022 03:56	WG1868318
Toluene	U		0.00130	0.00500	1	05/24/2022 03:56	WG1868318
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	05/24/2022 03:56	WG1868318
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	05/24/2022 03:56	WG1868318
1,1,1-Trichloroethane	U		0.000923	0.00250	1	05/24/2022 03:56	WG1868318
1,1,2-Trichloroethane	U		0.000597	0.00250	1	05/24/2022 03:56	WG1868318
Trichloroethene	U		0.000584	0.00100	1	05/24/2022 03:56	WG1868318
Trichlorofluoromethane	U		0.000827	0.00250	1	05/24/2022 03:56	WG1868318
1,2,3-Trichloropropane	U		0.00162	0.0125	1	05/24/2022 03:56	WG1868318
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 03:56	WG1868318
1,2,3-Trimethylbenzene	U		0.00158	0.00500	1	05/24/2022 03:56	WG1868318
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	05/24/2022 03:56	WG1868318
Vinyl chloride	U		0.00116	0.00250	1	05/24/2022 03:56	WG1868318
Xylenes, Total	U		0.000880	0.00650	1	05/24/2022 03:56	WG1868318
(S) Toluene-d8	*102*			*75.0-131*		*05/24/2022 03:56*	WG1868318
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*05/24/2022 03:56*	WG1868318
(S) 1,2-Dichloroethane-d4	*91.1*			*70.0-130*		*05/24/2022 03:56*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 12:26	WG1871319
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 12:26	WG1871319
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 12:26	WG1871319
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 12:26	WG1871319
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 12:26	WG1871319
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 12:26	WG1871319
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 12:26	WG1871319
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 12:26	WG1871319
Chrysene	U		0.00232	0.00600	1	05/31/2022 12:26	WG1871319
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 12:26	WG1871319
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 12:26	WG1871319
Fluorene	U		0.00205	0.00600	1	05/31/2022 12:26	WG1871319
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 12:26	WG1871319
Naphthalene	U		0.00408	0.0200	1	05/31/2022 12:26	WG1871319
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 12:26	WG1871319
Pyrene	U		0.00200	0.00600	1	05/31/2022 12:26	WG1871319
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 12:26	WG1871319
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 12:26	WG1871319
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 12:26	WG1871319
(S) p-Terphenyl-d14	*92.6*			*23.0-120*		*05/31/2022 12:26*	WG1871319
(S) Nitrobenzene-d5	*84.2*			*14.0-149*		*05/31/2022 12:26*	WG1871319
(S) 2-Fluorobiphenyl	*74.6*			*34.0-125*		*05/31/2022 12:26*	WG1871319

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.2		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U		0.0529	0.0725	1.45	05/24/2022 04:15	WG1868318
Acrylonitrile	U		0.00523	0.0181	1.45	05/24/2022 04:15	WG1868318
Benzene	U		0.000677	0.00145	1.45	05/24/2022 04:15	WG1868318
Bromobenzene	U		0.00131	0.0181	1.45	05/24/2022 04:15	WG1868318
Bromodichloromethane	U		0.00105	0.00363	1.45	05/24/2022 04:15	WG1868318
Bromoform	U		0.00170	0.0363	1.45	05/24/2022 04:15	WG1868318
Bromomethane	U		0.00286	0.0181	1.45	05/24/2022 04:15	WG1868318
n-Butylbenzene	U		0.00761	0.0181	1.45	05/24/2022 04:15	WG1868318
sec-Butylbenzene	U		0.00418	0.0181	1.45	05/24/2022 04:15	WG1868318
tert-Butylbenzene	U		0.00283	0.00725	1.45	05/24/2022 04:15	WG1868318
Carbon tetrachloride	U		0.00130	0.00725	1.45	05/24/2022 04:15	WG1868318
Chlorobenzene	U		0.000305	0.00363	1.45	05/24/2022 04:15	WG1868318
Chlorodibromomethane	U		0.000887	0.00363	1.45	05/24/2022 04:15	WG1868318
Chloroethane	U		0.00247	0.00725	1.45	05/24/2022 04:15	WG1868318
Chloroform	U		0.00149	0.00363	1.45	05/24/2022 04:15	WG1868318
Chloromethane	U		0.00631	0.0181	1.45	05/24/2022 04:15	WG1868318
2-Chlorotoluene	U		0.00125	0.00363	1.45	05/24/2022 04:15	WG1868318
4-Chlorotoluene	U		0.000653	0.00725	1.45	05/24/2022 04:15	WG1868318
1,2-Dibromo-3-Chloropropane	U		0.00566	0.0363	1.45	05/24/2022 04:15	WG1868318
1,2-Dibromoethane	U		0.000940	0.00363	1.45	05/24/2022 04:15	WG1868318
Dibromomethane	U		0.00109	0.00725	1.45	05/24/2022 04:15	WG1868318
1,2-Dichlorobenzene	U		0.000616	0.00725	1.45	05/24/2022 04:15	WG1868318
1,3-Dichlorobenzene	U		0.000870	0.00725	1.45	05/24/2022 04:15	WG1868318
1,4-Dichlorobenzene	U		0.00102	0.00725	1.45	05/24/2022 04:15	WG1868318
Dichlorodifluoromethane	U		0.00233	0.00363	1.45	05/24/2022 04:15	WG1868318
1,1-Dichloroethane	U		0.000712	0.00363	1.45	05/24/2022 04:15	WG1868318
1,2-Dichloroethane	U		0.000941	0.00363	1.45	05/24/2022 04:15	WG1868318
1,1-Dichloroethene	U		0.000879	0.00363	1.45	05/24/2022 04:15	WG1868318
cis-1,2-Dichloroethene	U		0.00106	0.00363	1.45	05/24/2022 04:15	WG1868318
trans-1,2-Dichloroethene	U		0.00151	0.00725	1.45	05/24/2022 04:15	WG1868318
1,2-Dichloropropane	U		0.00206	0.00725	1.45	05/24/2022 04:15	WG1868318
1,1-Dichloropropene	U		0.00117	0.00363	1.45	05/24/2022 04:15	WG1868318
1,3-Dichloropropane	U		0.000726	0.00725	1.45	05/24/2022 04:15	WG1868318
cis-1,3-Dichloropropene	U		0.00110	0.00363	1.45	05/24/2022 04:15	WG1868318
trans-1,3-Dichloropropene	U		0.00165	0.00725	1.45	05/24/2022 04:15	WG1868318
2,2-Dichloropropane	U		0.00200	0.00363	1.45	05/24/2022 04:15	WG1868318
Di-isopropyl ether	U		0.000594	0.00145	1.45	05/24/2022 04:15	WG1868318
Ethylbenzene	U		0.00107	0.00363	1.45	05/24/2022 04:15	WG1868318
Hexachloro-1,3-butadiene	U		0.00870	0.0363	1.45	05/24/2022 04:15	WG1868318
Isopropylbenzene	0.00272	J	0.000616	0.00363	1.45	05/24/2022 04:15	WG1868318
p-Isopropyltoluene	U		0.00370	0.00725	1.45	05/24/2022 04:15	WG1868318
2-Butanone (MEK)	0.0936	J	0.0921	0.145	1.45	05/24/2022 04:15	WG1868318
Methylene Chloride	U		0.00963	0.0363	1.45	05/24/2022 04:15	WG1868318
4-Methyl-2-pentanone (MIBK)	U		0.00331	0.0363	1.45	05/24/2022 04:15	WG1868318
Methyl tert-butyl ether	U		0.000508	0.00145	1.45	05/24/2022 04:15	WG1868318
Naphthalene	U		0.00708	0.0181	1.45	05/24/2022 04:15	WG1868318
n-Propylbenzene	0.00341	J	0.00138	0.00725	1.45	05/24/2022 04:15	WG1868318
Styrene	U		0.000332	0.0181	1.45	05/24/2022 04:15	WG1868318
1,1,1,2-Tetrachloroethane	U		0.00137	0.00363	1.45	05/24/2022 04:15	WG1868318
1,1,2,2-Tetrachloroethane	U		0.00101	0.00363	1.45	05/24/2022 04:15	WG1868318

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.00109	0.00363	1.45	05/24/2022 04:15	WG1868318
Tetrachloroethene	0.00497		0.00130	0.00363	1.45	05/24/2022 04:15	WG1868318
Toluene	0.00439	J	0.00189	0.00725	1.45	05/24/2022 04:15	WG1868318
1,2,3-Trichlorobenzene	U		0.0106	0.0181	1.45	05/24/2022 04:15	WG1868318
1,2,4-Trichlorobenzene	U		0.00638	0.0181	1.45	05/24/2022 04:15	WG1868318
1,1,1-Trichloroethane	U		0.00134	0.00363	1.45	05/24/2022 04:15	WG1868318
1,1,2-Trichloroethane	U		0.000866	0.00363	1.45	05/24/2022 04:15	WG1868318
Trichloroethene	0.00265		0.000847	0.00145	1.45	05/24/2022 04:15	WG1868318
Trichlorofluoromethane	U		0.00120	0.00363	1.45	05/24/2022 04:15	WG1868318
1,2,3-Trichloropropane	U		0.00235	0.0181	1.45	05/24/2022 04:15	WG1868318
1,2,4-Trimethylbenzene	0.00540	J	0.00229	0.00725	1.45	05/24/2022 04:15	WG1868318
1,2,3-Trimethylbenzene	0.00852		0.00229	0.00725	1.45	05/24/2022 04:15	WG1868318
1,3,5-Trimethylbenzene	0.00797		0.00290	0.00725	1.45	05/24/2022 04:15	WG1868318
Vinyl chloride	U		0.00168	0.00363	1.45	05/24/2022 04:15	WG1868318
Xylenes, Total	0.00892	J	0.00128	0.00943	1.45	05/24/2022 04:15	WG1868318
(S) Toluene-d8	*102*			*75.0-131*		*05/24/2022 04:15*	WG1868318
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*05/24/2022 04:15*	WG1868318
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*		*05/24/2022 04:15*	WG1868318

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00637		0.00230	0.00600	1	05/31/2022 12:46	WG1871319
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 12:46	WG1871319
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 12:46	WG1871319
Benzo(a)anthracene	0.0140		0.00173	0.00600	1	05/31/2022 12:46	WG1871319
Benzo(a)pyrene	0.00590	J	0.00179	0.00600	1	05/31/2022 12:46	WG1871319
Benzo(b)fluoranthene	0.00862		0.00153	0.00600	1	05/31/2022 12:46	WG1871319
Benzo(g,h,i)perylene	0.00456	J	0.00177	0.00600	1	05/31/2022 12:46	WG1871319
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 12:46	WG1871319
Chrysene	0.0156		0.00232	0.00600	1	05/31/2022 12:46	WG1871319
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 12:46	WG1871319
Fluoranthene	0.0236		0.00227	0.00600	1	05/31/2022 12:46	WG1871319
Fluorene	U		0.00205	0.00600	1	05/31/2022 12:46	WG1871319
Indeno(1,2,3-cd)pyrene	0.00264	J	0.00181	0.00600	1	05/31/2022 12:46	WG1871319
Naphthalene	0.0150	J	0.00408	0.0200	1	05/31/2022 12:46	WG1871319
Phenanthrene	0.210		0.00231	0.00600	1	05/31/2022 12:46	WG1871319
Pyrene	0.0155		0.00200	0.00600	1	05/31/2022 12:46	WG1871319
1-Methylnaphthalene	0.0523		0.00449	0.0200	1	05/31/2022 12:46	WG1871319
2-Methylnaphthalene	0.0306		0.00427	0.0200	1	05/31/2022 12:46	WG1871319
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 12:46	WG1871319
(S) p-Terphenyl-d14	*85.5*			*23.0-120*		*05/31/2022 12:46*	WG1871319
(S) Nitrobenzene-d5	*77.8*			*14.0-149*		*05/31/2022 12:46*	WG1871319
(S) 2-Fluorobiphenyl	*69.8*			*34.0-125*		*05/31/2022 12:46*	WG1871319

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.7		1	05/25/2022 18:31	WG1869443

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	0.0732		0.0369	0.0505	1.01	05/25/2022 16:13	WG1868728
Acrylonitrile	U		0.00365	0.0126	1.01	05/25/2022 16:13	WG1868728
Benzene	U		0.000472	0.00101	1.01	05/25/2022 16:13	WG1868728
Bromobenzene	U		0.000909	0.0126	1.01	05/25/2022 16:13	WG1868728
Bromodichloromethane	U		0.000732	0.00253	1.01	05/25/2022 16:13	WG1868728
Bromoform	U		0.00118	0.0253	1.01	05/25/2022 16:13	WG1868728
Bromomethane	U		0.00199	0.0126	1.01	05/25/2022 16:13	WG1868728
n-Butylbenzene	U		0.00530	0.0126	1.01	05/25/2022 16:13	WG1868728
sec-Butylbenzene	U		0.00291	0.0126	1.01	05/25/2022 16:13	WG1868728
tert-Butylbenzene	U		0.00197	0.00505	1.01	05/25/2022 16:13	WG1868728
Carbon tetrachloride	U		0.000907	0.00505	1.01	05/25/2022 16:13	WG1868728
Chlorobenzene	U		0.000212	0.00253	1.01	05/25/2022 16:13	WG1868728
Chlorodibromomethane	U		0.000618	0.00253	1.01	05/25/2022 16:13	WG1868728
Chloroethane	U		0.00172	0.00505	1.01	05/25/2022 16:13	WG1868728
Chloroform	U		0.00104	0.00253	1.01	05/25/2022 16:13	WG1868728
Chloromethane	U		0.00439	0.0126	1.01	05/25/2022 16:13	WG1868728
2-Chlorotoluene	U		0.000874	0.00253	1.01	05/25/2022 16:13	WG1868728
4-Chlorotoluene	U		0.000455	0.00505	1.01	05/25/2022 16:13	WG1868728
1,2-Dibromo-3-Chloropropane	U		0.00394	0.0253	1.01	05/25/2022 16:13	WG1868728
1,2-Dibromoethane	U		0.000654	0.00253	1.01	05/25/2022 16:13	WG1868728
Dibromomethane	U		0.000757	0.00505	1.01	05/25/2022 16:13	WG1868728
1,2-Dichlorobenzene	U		0.000429	0.00505	1.01	05/25/2022 16:13	WG1868728
1,3-Dichlorobenzene	U		0.000606	0.00505	1.01	05/25/2022 16:13	WG1868728
1,4-Dichlorobenzene	U		0.000707	0.00505	1.01	05/25/2022 16:13	WG1868728
Dichlorodifluoromethane	U		0.00163	0.00253	1.01	05/25/2022 16:13	WG1868728
1,1-Dichloroethane	U		0.000496	0.00253	1.01	05/25/2022 16:13	WG1868728
1,2-Dichloroethane	U		0.000655	0.00253	1.01	05/25/2022 16:13	WG1868728
1,1-Dichloroethene	U		0.000612	0.00253	1.01	05/25/2022 16:13	WG1868728
cis-1,2-Dichloroethene	U		0.000741	0.00253	1.01	05/25/2022 16:13	WG1868728
trans-1,2-Dichloroethene	U		0.00105	0.00505	1.01	05/25/2022 16:13	WG1868728
1,2-Dichloropropane	U		0.00143	0.00505	1.01	05/25/2022 16:13	WG1868728
1,1-Dichloropropene	U		0.000817	0.00253	1.01	05/25/2022 16:13	WG1868728
1,3-Dichloropropane	U		0.000506	0.00505	1.01	05/25/2022 16:13	WG1868728
cis-1,3-Dichloropropene	U		0.000765	0.00253	1.01	05/25/2022 16:13	WG1868728
trans-1,3-Dichloropropene	U		0.00115	0.00505	1.01	05/25/2022 16:13	WG1868728
2,2-Dichloropropane	U		0.00139	0.00253	1.01	05/25/2022 16:13	WG1868728
Di-isopropyl ether	U		0.000414	0.00101	1.01	05/25/2022 16:13	WG1868728
Ethylbenzene	U		0.000744	0.00253	1.01	05/25/2022 16:13	WG1868728
Hexachloro-1,3-butadiene	U		0.00606	0.0253	1.01	05/25/2022 16:13	WG1868728
Isopropylbenzene	U		0.000429	0.00253	1.01	05/25/2022 16:13	WG1868728
p-Isopropyltoluene	U		0.00258	0.00505	1.01	05/25/2022 16:13	WG1868728
2-Butanone (MEK)	U		0.0641	0.101	1.01	05/25/2022 16:13	WG1868728
Methylene Chloride	U		0.00671	0.0253	1.01	05/25/2022 16:13	WG1868728
4-Methyl-2-pentanone (MIBK)	U		0.00230	0.0253	1.01	05/25/2022 16:13	WG1868728
Methyl tert-butyl ether	U		0.000353	0.00101	1.01	05/25/2022 16:13	WG1868728
Naphthalene	U		0.00493	0.0126	1.01	05/25/2022 16:13	WG1868728
n-Propylbenzene	U		0.000959	0.00505	1.01	05/25/2022 16:13	WG1868728
Styrene	U		0.000231	0.0126	1.01	05/25/2022 16:13	WG1868728
1,1,1,2-Tetrachloroethane	U		0.000957	0.00253	1.01	05/25/2022 16:13	WG1868728
1,1,2,2-Tetrachloroethane	U		0.000702	0.00253	1.01	05/25/2022 16:13	WG1868728

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000762	0.00253	1.01	05/25/2022 16:13	WG1868728
Tetrachloroethene	0.00904		0.000905	0.00253	1.01	05/25/2022 16:13	WG1868728
Toluene	U		0.00131	0.00505	1.01	05/25/2022 16:13	WG1868728
1,2,3-Trichlorobenzene	U		0.00740	0.0126	1.01	05/25/2022 16:13	WG1868728
1,2,4-Trichlorobenzene	U		0.00444	0.0126	1.01	05/25/2022 16:13	WG1868728
1,1,1-Trichloroethane	U		0.000932	0.00253	1.01	05/25/2022 16:13	WG1868728
1,1,2-Trichloroethane	U		0.000603	0.00253	1.01	05/25/2022 16:13	WG1868728
Trichloroethene	U		0.000590	0.00101	1.01	05/25/2022 16:13	WG1868728
Trichlorofluoromethane	U		0.000835	0.00253	1.01	05/25/2022 16:13	WG1868728
1,2,3-Trichloropropane	U		0.00164	0.0126	1.01	05/25/2022 16:13	WG1868728
1,2,4-Trimethylbenzene	U		0.00160	0.00505	1.01	05/25/2022 16:13	WG1868728
1,2,3-Trimethylbenzene	U		0.00160	0.00505	1.01	05/25/2022 16:13	WG1868728
1,3,5-Trimethylbenzene	U		0.00202	0.00505	1.01	05/25/2022 16:13	WG1868728
Vinyl chloride	U		0.00117	0.00253	1.01	05/25/2022 16:13	WG1868728
Xylenes, Total	U		0.000889	0.00656	1.01	05/25/2022 16:13	WG1868728
(S) Toluene-d8	*104*			*75.0-131*		*05/25/2022 16:13*	WG1868728
(S) 4-Bromofluorobenzene	*103*			*67.0-138*		*05/25/2022 16:13*	WG1868728
(S) 1,2-Dichloroethane-d4	*87.4*			*70.0-130*		*05/25/2022 16:13*	WG1868728

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	05/31/2022 13:06	WG1871319
Acenaphthene	U		0.00209	0.00600	1	05/31/2022 13:06	WG1871319
Acenaphthylene	U		0.00216	0.00600	1	05/31/2022 13:06	WG1871319
Benzo(a)anthracene	U		0.00173	0.00600	1	05/31/2022 13:06	WG1871319
Benzo(a)pyrene	U		0.00179	0.00600	1	05/31/2022 13:06	WG1871319
Benzo(b)fluoranthene	U		0.00153	0.00600	1	05/31/2022 13:06	WG1871319
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	05/31/2022 13:06	WG1871319
Benzo(k)fluoranthene	U		0.00215	0.00600	1	05/31/2022 13:06	WG1871319
Chrysene	U		0.00232	0.00600	1	05/31/2022 13:06	WG1871319
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	05/31/2022 13:06	WG1871319
Fluoranthene	U		0.00227	0.00600	1	05/31/2022 13:06	WG1871319
Fluorene	U		0.00205	0.00600	1	05/31/2022 13:06	WG1871319
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	05/31/2022 13:06	WG1871319
Naphthalene	U		0.00408	0.0200	1	05/31/2022 13:06	WG1871319
Phenanthrene	U		0.00231	0.00600	1	05/31/2022 13:06	WG1871319
Pyrene	U		0.00200	0.00600	1	05/31/2022 13:06	WG1871319
1-Methylnaphthalene	U		0.00449	0.0200	1	05/31/2022 13:06	WG1871319
2-Methylnaphthalene	U		0.00427	0.0200	1	05/31/2022 13:06	WG1871319
2-Chloronaphthalene	U		0.00466	0.0200	1	05/31/2022 13:06	WG1871319
(S) p-Terphenyl-d14	*90.4*			*23.0-120*		*05/31/2022 13:06*	WG1871319
(S) Nitrobenzene-d5	*79.7*			*14.0-149*		*05/31/2022 13:06*	WG1871319
(S) 2-Fluorobiphenyl	*72.5*			*34.0-125*		*05/31/2022 13:06*	WG1871319

Method Blank (MB)

(MB) R3796288-1 05/25/22 18:18

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1496268-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1496268-02 05/25/22 18:18 • (DUP) R3796288-3 05/25/22 18:18

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	78.1	79.2	1	1.40		10

Laboratory Control Sample (LCS)

(LCS) R3796288-2 05/25/22 18:18

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3796292-1 05/25/22 18:31

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1496268-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1496268-12 05/25/22 18:31 • (DUP) R3796292-3 05/25/22 18:31

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	82.1	81.1	1	1.19		10

Laboratory Control Sample (LCS)

(LCS) R3796292-2 05/25/22 18:31

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3796036-2 05/24/22 09:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3796036-2 05/24/22 09:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*99.6*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3796036-1 05/24/22 08:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.567	90.7	10.0-160	
Acrylonitrile	0.625	0.690	110	45.0-153	
Benzene	0.125	0.114	91.2	70.0-123	
Bromobenzene	0.125	0.115	92.0	73.0-121	
Bromodichloromethane	0.125	0.112	89.6	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3796036-1 05/24/22 08:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.106	84.8	64.0-132	
Bromomethane	0.125	0.120	96.0	56.0-147	
n-Butylbenzene	0.125	0.0999	79.9	68.0-135	
sec-Butylbenzene	0.125	0.102	81.6	74.0-130	
tert-Butylbenzene	0.125	0.101	80.8	75.0-127	
Carbon tetrachloride	0.125	0.120	96.0	66.0-128	
Chlorobenzene	0.125	0.115	92.0	76.0-128	
Chlorodibromomethane	0.125	0.117	93.6	74.0-127	
Chloroethane	0.125	0.116	92.8	61.0-134	
Chloroform	0.125	0.116	92.8	72.0-123	
Chloromethane	0.125	0.105	84.0	51.0-138	
2-Chlorotoluene	0.125	0.110	88.0	75.0-124	
4-Chlorotoluene	0.125	0.101	80.8	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.103	82.4	59.0-130	
1,2-Dibromoethane	0.125	0.116	92.8	74.0-128	
Dibromomethane	0.125	0.133	106	75.0-122	
1,2-Dichlorobenzene	0.125	0.112	89.6	76.0-124	
1,3-Dichlorobenzene	0.125	0.110	88.0	76.0-125	
1,4-Dichlorobenzene	0.125	0.108	86.4	77.0-121	
Dichlorodifluoromethane	0.125	0.131	105	43.0-156	
1,1-Dichloroethane	0.125	0.121	96.8	70.0-127	
1,2-Dichloroethane	0.125	0.124	99.2	65.0-131	
1,1-Dichloroethene	0.125	0.121	96.8	65.0-131	
cis-1,2-Dichloroethene	0.125	0.123	98.4	73.0-125	
trans-1,2-Dichloroethene	0.125	0.119	95.2	71.0-125	
1,2-Dichloropropane	0.125	0.120	96.0	74.0-125	
1,1-Dichloropropene	0.125	0.114	91.2	73.0-125	
1,3-Dichloropropane	0.125	0.116	92.8	80.0-125	
cis-1,3-Dichloropropene	0.125	0.121	96.8	76.0-127	
trans-1,3-Dichloropropene	0.125	0.108	86.4	73.0-127	
2,2-Dichloropropane	0.125	0.104	83.2	59.0-135	
Di-isopropyl ether	0.125	0.111	88.8	60.0-136	
Ethylbenzene	0.125	0.110	88.0	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.0933	74.6	57.0-150	
Isopropylbenzene	0.125	0.109	87.2	72.0-127	
p-Isopropyltoluene	0.125	0.102	81.6	72.0-133	
2-Butanone (MEK)	0.625	0.615	98.4	30.0-160	
Methylene Chloride	0.125	0.115	92.0	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.545	87.2	56.0-143	
Methyl tert-butyl ether	0.125	0.117	93.6	66.0-132	

Laboratory Control Sample (LCS)

(LCS) R3796036-1 05/24/22 08:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.125	0.0900	72.0	59.0-130	
n-Propylbenzene	0.125	0.0992	79.4	74.0-126	
Styrene	0.125	0.108	86.4	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.113	90.4	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.0975	78.0	68.0-128	
1,1,2-Trichlorotrifluoroethane	0.125	0.110	88.0	61.0-139	
Tetrachloroethene	0.125	0.110	88.0	70.0-136	
Toluene	0.125	0.109	87.2	75.0-121	
1,2,3-Trichlorobenzene	0.125	0.0933	74.6	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.0984	78.7	62.0-137	
1,1,1-Trichloroethane	0.125	0.121	96.8	69.0-126	
1,1,2-Trichloroethane	0.125	0.112	89.6	78.0-123	
Trichloroethene	0.125	0.124	99.2	76.0-126	
Trichlorofluoromethane	0.125	0.119	95.2	61.0-142	
1,2,3-Trichloropropane	0.125	0.117	93.6	67.0-129	
1,2,4-Trimethylbenzene	0.125	0.0954	76.3	70.0-126	
1,2,3-Trimethylbenzene	0.125	0.103	82.4	74.0-124	
1,3,5-Trimethylbenzene	0.125	0.102	81.6	73.0-127	
Vinyl chloride	0.125	0.124	99.2	63.0-134	
Xylenes, Total	0.375	0.320	85.3	72.0-127	
(S) Toluene-d8			*100*	*75.0-131*	
(S) 4-Bromofluorobenzene			*103*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3795253-3 05/23/22 22:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3795253-3 05/23/22 22:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*105*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*98.8*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795253-1 05/23/22 21:16 • (LCSD) R3795253-2 05/23/22 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.588	0.643	94.1	103	10.0-160			8.94	31
Acrylonitrile	0.625	0.699	0.688	112	110	45.0-153			1.59	22
Benzene	0.125	0.119	0.114	95.2	91.2	70.0-123			4.29	20
Bromobenzene	0.125	0.122	0.115	97.6	92.0	73.0-121			5.91	20
Bromodichloromethane	0.125	0.117	0.112	93.6	89.6	73.0-121			4.37	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795253-1 05/23/22 21:16 • (LCSD) R3795253-2 05/23/22 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.113	0.110	90.4	88.0	64.0-132			2.69	20
Bromomethane	0.125	0.128	0.120	102	96.0	56.0-147			6.45	20
n-Butylbenzene	0.125	0.105	0.0998	84.0	79.8	68.0-135			5.08	20
sec-Butylbenzene	0.125	0.106	0.0991	84.8	79.3	74.0-130			6.73	20
tert-Butylbenzene	0.125	0.108	0.0984	86.4	78.7	75.0-127			9.30	20
Carbon tetrachloride	0.125	0.125	0.117	100	93.6	66.0-128			6.61	20
Chlorobenzene	0.125	0.118	0.113	94.4	90.4	76.0-128			4.33	20
Chlorodibromomethane	0.125	0.113	0.112	90.4	89.6	74.0-127			0.889	20
Chloroethane	0.125	0.118	0.114	94.4	91.2	61.0-134			3.45	20
Chloroform	0.125	0.121	0.116	96.8	92.8	72.0-123			4.22	20
Chloromethane	0.125	0.106	0.105	84.8	84.0	51.0-138			0.948	20
2-Chlorotoluene	0.125	0.114	0.104	91.2	83.2	75.0-124			9.17	20
4-Chlorotoluene	0.125	0.106	0.0999	84.8	79.9	75.0-124			5.93	20
1,2-Dibromo-3-Chloropropane	0.125	0.111	0.107	88.8	85.6	59.0-130			3.67	20
1,2-Dibromoethane	0.125	0.122	0.118	97.6	94.4	74.0-128			3.33	20
Dibromomethane	0.125	0.133	0.132	106	106	75.0-122			0.755	20
1,2-Dichlorobenzene	0.125	0.119	0.114	95.2	91.2	76.0-124			4.29	20
1,3-Dichlorobenzene	0.125	0.119	0.106	95.2	84.8	76.0-125			11.6	20
1,4-Dichlorobenzene	0.125	0.116	0.108	92.8	86.4	77.0-121			7.14	20
Dichlorodifluoromethane	0.125	0.138	0.123	110	98.4	43.0-156			11.5	20
1,1-Dichloroethane	0.125	0.125	0.120	100	96.0	70.0-127			4.08	20
1,2-Dichloroethane	0.125	0.136	0.119	109	95.2	65.0-131			13.3	20
1,1-Dichloroethene	0.125	0.126	0.118	101	94.4	65.0-131			6.56	20
cis-1,2-Dichloroethene	0.125	0.127	0.126	102	101	73.0-125			0.791	20
trans-1,2-Dichloroethene	0.125	0.125	0.122	100	97.6	71.0-125			2.43	20
1,2-Dichloropropane	0.125	0.127	0.124	102	99.2	74.0-125			2.39	20
1,1-Dichloropropene	0.125	0.118	0.112	94.4	89.6	73.0-125			5.22	20
1,3-Dichloropropane	0.125	0.120	0.118	96.0	94.4	80.0-125			1.68	20
cis-1,3-Dichloropropene	0.125	0.125	0.121	100	96.8	76.0-127			3.25	20
trans-1,3-Dichloropropene	0.125	0.112	0.111	89.6	88.8	73.0-127			0.897	20
2,2-Dichloropropane	0.125	0.115	0.103	92.0	82.4	59.0-135			11.0	20
Di-isopropyl ether	0.125	0.120	0.113	96.0	90.4	60.0-136			6.01	20
Ethylbenzene	0.125	0.118	0.109	94.4	87.2	74.0-126			7.93	20
Hexachloro-1,3-butadiene	0.125	0.115	0.108	92.0	86.4	57.0-150			6.28	20
Isopropylbenzene	0.125	0.114	0.108	91.2	86.4	72.0-127			5.41	20
p-Isopropyltoluene	0.125	0.105	0.102	84.0	81.6	72.0-133			2.90	20
2-Butanone (MEK)	0.625	0.650	0.637	104	102	30.0-160			2.02	24
Methylene Chloride	0.125	0.121	0.115	96.8	92.0	68.0-123			5.08	20
4-Methyl-2-pentanone (MIBK)	0.625	0.571	0.570	91.4	91.2	56.0-143			0.175	20
Methyl tert-butyl ether	0.125	0.132	0.126	106	101	66.0-132			4.65	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795253-1 05/23/22 21:16 • (LCSD) R3795253-2 05/23/22 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.102	0.102	81.6	81.6	59.0-130			0.000	20
n-Propylbenzene	0.125	0.104	0.0949	83.2	75.9	74.0-126			9.15	20
Styrene	0.125	0.112	0.106	89.6	84.8	72.0-127			5.50	20
1,1,1,2-Tetrachloroethane	0.125	0.119	0.117	95.2	93.6	74.0-129			1.69	20
1,1,2,2-Tetrachloroethane	0.125	0.0979	0.0941	78.3	75.3	68.0-128			3.96	20
1,1,2-Trichlorotrifluoroethane	0.125	0.112	0.109	89.6	87.2	61.0-139			2.71	20
Tetrachloroethene	0.125	0.115	0.106	92.0	84.8	70.0-136			8.14	20
Toluene	0.125	0.111	0.109	88.8	87.2	75.0-121			1.82	20
1,2,3-Trichlorobenzene	0.125	0.104	0.107	83.2	85.6	59.0-139			2.84	20
1,2,4-Trichlorobenzene	0.125	0.113	0.111	90.4	88.8	62.0-137			1.79	20
1,1,1-Trichloroethane	0.125	0.124	0.121	99.2	96.8	69.0-126			2.45	20
1,1,2-Trichloroethane	0.125	0.114	0.116	91.2	92.8	78.0-123			1.74	20
Trichloroethene	0.125	0.133	0.125	106	100	76.0-126			6.20	20
Trichlorofluoromethane	0.125	0.120	0.112	96.0	89.6	61.0-142			6.90	20
1,2,3-Trichloropropane	0.125	0.126	0.115	101	92.0	67.0-129			9.13	20
1,2,4-Trimethylbenzene	0.125	0.103	0.0976	82.4	78.1	70.0-126			5.38	20
1,2,3-Trimethylbenzene	0.125	0.108	0.102	86.4	81.6	74.0-124			5.71	20
1,3,5-Trimethylbenzene	0.125	0.107	0.0999	85.6	79.9	73.0-127			6.86	20
Vinyl chloride	0.125	0.130	0.124	104	99.2	63.0-134			4.72	20
Xylenes, Total	0.375	0.333	0.322	88.8	85.9	72.0-127			3.36	20
(S) Toluene-d8				*97.7*	*98.6*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*104*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*109*	*108*	*70.0-130*				

Method Blank (MB)

(MB) R3795693-3 05/25/22 03:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	0.000925	J	0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3795693-3 05/25/22 03:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	0.00147	J	0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	0.00275	J	0.000880	0.00650
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*104*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.6*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795693-1 05/25/22 02:15 • (LCSD) R3795693-2 05/25/22 02:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.718	1.13	115	181	10.0-160		J3 J4	44.6	31
Acrylonitrile	0.625	0.707	0.713	113	114	45.0-153			0.845	22
Benzene	0.125	0.122	0.117	97.6	93.6	70.0-123			4.18	20
Bromobenzene	0.125	0.126	0.125	101	100	73.0-121			0.797	20
Bromodichloromethane	0.125	0.117	0.117	93.6	93.6	73.0-121			0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795693-1 05/25/22 02:15 • (LCSD) R3795693-2 05/25/22 02:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.113	0.121	90.4	96.8	64.0-132			6.84	20
Bromomethane	0.125	0.135	0.139	108	111	56.0-147			2.92	20
n-Butylbenzene	0.125	0.0989	0.104	79.1	83.2	68.0-135			5.03	20
sec-Butylbenzene	0.125	0.106	0.103	84.8	82.4	74.0-130			2.87	20
tert-Butylbenzene	0.125	0.109	0.109	87.2	87.2	75.0-127			0.000	20
Carbon tetrachloride	0.125	0.136	0.120	109	96.0	66.0-128			12.5	20
Chlorobenzene	0.125	0.124	0.129	99.2	103	76.0-128			3.95	20
Chlorodibromomethane	0.125	0.126	0.130	101	104	74.0-127			3.12	20
Chloroethane	0.125	0.124	0.126	99.2	101	61.0-134			1.60	20
Chloroform	0.125	0.126	0.118	101	94.4	72.0-123			6.56	20
Chloromethane	0.125	0.115	0.106	92.0	84.8	51.0-138			8.14	20
2-Chlorotoluene	0.125	0.112	0.117	89.6	93.6	75.0-124			4.37	20
4-Chlorotoluene	0.125	0.103	0.105	82.4	84.0	75.0-124			1.92	20
1,2-Dibromo-3-Chloropropane	0.125	0.106	0.127	84.8	102	59.0-130			18.0	20
1,2-Dibromoethane	0.125	0.127	0.131	102	105	74.0-128			3.10	20
Dibromomethane	0.125	0.138	0.142	110	114	75.0-122			2.86	20
1,2-Dichlorobenzene	0.125	0.119	0.125	95.2	100	76.0-124			4.92	20
1,3-Dichlorobenzene	0.125	0.114	0.124	91.2	99.2	76.0-125			8.40	20
1,4-Dichlorobenzene	0.125	0.116	0.120	92.8	96.0	77.0-121			3.39	20
Dichlorodifluoromethane	0.125	0.131	0.129	105	103	43.0-156			1.54	20
1,1-Dichloroethane	0.125	0.131	0.118	105	94.4	70.0-127			10.4	20
1,2-Dichloroethane	0.125	0.133	0.134	106	107	65.0-131			0.749	20
1,1-Dichloroethene	0.125	0.133	0.118	106	94.4	65.0-131			12.0	20
cis-1,2-Dichloroethene	0.125	0.133	0.125	106	100	73.0-125			6.20	20
trans-1,2-Dichloroethene	0.125	0.130	0.123	104	98.4	71.0-125			5.53	20
1,2-Dichloropropane	0.125	0.126	0.128	101	102	74.0-125			1.57	20
1,1-Dichloropropene	0.125	0.123	0.117	98.4	93.6	73.0-125			5.00	20
1,3-Dichloropropane	0.125	0.124	0.127	99.2	102	80.0-125			2.39	20
cis-1,3-Dichloropropene	0.125	0.125	0.124	100	99.2	76.0-127			0.803	20
trans-1,3-Dichloropropene	0.125	0.112	0.118	89.6	94.4	73.0-127			5.22	20
2,2-Dichloropropane	0.125	0.123	0.107	98.4	85.6	59.0-135			13.9	20
Di-isopropyl ether	0.125	0.121	0.108	96.8	86.4	60.0-136			11.4	20
Ethylbenzene	0.125	0.127	0.130	102	104	74.0-126			2.33	20
Hexachloro-1,3-butadiene	0.125	0.106	0.127	84.8	102	57.0-150			18.0	20
Isopropylbenzene	0.125	0.121	0.119	96.8	95.2	72.0-127			1.67	20
p-Isopropyltoluene	0.125	0.108	0.104	86.4	83.2	72.0-133			3.77	20
2-Butanone (MEK)	0.625	0.666	0.710	107	114	30.0-160			6.40	24
Methylene Chloride	0.125	0.134	0.124	107	99.2	68.0-123			7.75	20
4-Methyl-2-pentanone (MIBK)	0.625	0.547	0.594	87.5	95.0	56.0-143			8.24	20
Methyl tert-butyl ether	0.125	0.138	0.120	110	96.0	66.0-132			14.0	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795693-1 05/25/22 02:15 • (LCSD) R3795693-2 05/25/22 02:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.0875	0.0939	70.0	75.1	59.0-130			7.06	20
n-Propylbenzene	0.125	0.103	0.103	82.4	82.4	74.0-126			0.000	20
Styrene	0.125	0.119	0.121	95.2	96.8	72.0-127			1.67	20
1,1,1,2-Tetrachloroethane	0.125	0.125	0.124	100	99.2	74.0-129			0.803	20
1,1,2,2-Tetrachloroethane	0.125	0.102	0.0963	81.6	77.0	68.0-128			5.75	20
1,1,2-Trichlorotrifluoroethane	0.125	0.126	0.119	101	95.2	61.0-139			5.71	20
Tetrachloroethene	0.125	0.123	0.121	98.4	96.8	70.0-136			1.64	20
Toluene	0.125	0.120	0.121	96.0	96.8	75.0-121			0.830	20
1,2,3-Trichlorobenzene	0.125	0.0859	0.102	68.7	81.6	59.0-139			17.1	20
1,2,4-Trichlorobenzene	0.125	0.0993	0.114	79.4	91.2	62.0-137			13.8	20
1,1,1-Trichloroethane	0.125	0.137	0.126	110	101	69.0-126			8.37	20
1,1,2-Trichloroethane	0.125	0.121	0.126	96.8	101	78.0-123			4.05	20
Trichloroethene	0.125	0.133	0.137	106	110	76.0-126			2.96	20
Trichlorofluoromethane	0.125	0.137	0.131	110	105	61.0-142			4.48	20
1,2,3-Trichloropropane	0.125	0.121	0.124	96.8	99.2	67.0-129			2.45	20
1,2,4-Trimethylbenzene	0.125	0.100	0.0991	80.0	79.3	70.0-126			0.904	20
1,2,3-Trimethylbenzene	0.125	0.107	0.104	85.6	83.2	74.0-124			2.84	20
1,3,5-Trimethylbenzene	0.125	0.108	0.104	86.4	83.2	73.0-127			3.77	20
Vinyl chloride	0.125	0.138	0.128	110	102	63.0-134			7.52	20
Xylenes, Total	0.375	0.364	0.369	97.1	98.4	72.0-127			1.36	20
(S) Toluene-d8				*101*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*105*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*105*	*98.6*	*70.0-130*				

Method Blank (MB)

(MB) R3795727-3 05/25/22 01:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	0.00105	J	0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	0.000600	J	0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3795727-3 05/25/22 01:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*113*			*75.0-131*
(S) 4-Bromofluorobenzene	*89.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*90.3*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795727-1 05/24/22 23:51 • (LCSD) R3795727-2 05/25/22 00:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.739	0.575	118	92.0	10.0-160			25.0	31
Acrylonitrile	0.625	0.616	0.502	98.6	80.3	45.0-153			20.4	22
Benzene	0.125	0.127	0.122	102	97.6	70.0-123			4.02	20
Bromobenzene	0.125	0.135	0.128	108	102	73.0-121			5.32	20
Bromodichloromethane	0.125	0.131	0.124	105	99.2	73.0-121			5.49	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795727-1 05/24/22 23:51 • (LCSD) R3795727-2 05/25/22 00:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.122	0.111	97.6	88.8	64.0-132			9.44	20
Bromomethane	0.125	0.124	0.127	99.2	102	56.0-147			2.39	20
n-Butylbenzene	0.125	0.132	0.133	106	106	68.0-135			0.755	20
sec-Butylbenzene	0.125	0.134	0.134	107	107	74.0-130			0.000	20
tert-Butylbenzene	0.125	0.129	0.131	103	105	75.0-127			1.54	20
Carbon tetrachloride	0.125	0.132	0.132	106	106	66.0-128			0.000	20
Chlorobenzene	0.125	0.123	0.121	98.4	96.8	76.0-128			1.64	20
Chlorodibromomethane	0.125	0.130	0.127	104	102	74.0-127			2.33	20
Chloroethane	0.125	0.138	0.141	110	113	61.0-134			2.15	20
Chloroform	0.125	0.137	0.129	110	103	72.0-123			6.02	20
Chloromethane	0.125	0.121	0.110	96.8	88.0	51.0-138			9.52	20
2-Chlorotoluene	0.125	0.123	0.127	98.4	102	75.0-124			3.20	20
4-Chlorotoluene	0.125	0.118	0.123	94.4	98.4	75.0-124			4.15	20
1,2-Dibromo-3-Chloropropane	0.125	0.129	0.131	103	105	59.0-130			1.54	20
1,2-Dibromoethane	0.125	0.135	0.134	108	107	74.0-128			0.743	20
Dibromomethane	0.125	0.132	0.131	106	105	75.0-122			0.760	20
1,2-Dichlorobenzene	0.125	0.128	0.125	102	100	76.0-124			2.37	20
1,3-Dichlorobenzene	0.125	0.131	0.128	105	102	76.0-125			2.32	20
1,4-Dichlorobenzene	0.125	0.124	0.120	99.2	96.0	77.0-121			3.28	20
Dichlorodifluoromethane	0.125	0.134	0.128	107	102	43.0-156			4.58	20
1,1-Dichloroethane	0.125	0.135	0.124	108	99.2	70.0-127			8.49	20
1,2-Dichloroethane	0.125	0.116	0.111	92.8	88.8	65.0-131			4.41	20
1,1-Dichloroethene	0.125	0.130	0.126	104	101	65.0-131			3.12	20
cis-1,2-Dichloroethene	0.125	0.131	0.123	105	98.4	73.0-125			6.30	20
trans-1,2-Dichloroethene	0.125	0.132	0.129	106	103	71.0-125			2.30	20
1,2-Dichloropropane	0.125	0.119	0.123	95.2	98.4	74.0-125			3.31	20
1,1-Dichloropropene	0.125	0.127	0.123	102	98.4	73.0-125			3.20	20
1,3-Dichloropropane	0.125	0.129	0.133	103	106	80.0-125			3.05	20
cis-1,3-Dichloropropene	0.125	0.122	0.120	97.6	96.0	76.0-127			1.65	20
trans-1,3-Dichloropropene	0.125	0.120	0.123	96.0	98.4	73.0-127			2.47	20
2,2-Dichloropropane	0.125	0.132	0.132	106	106	59.0-135			0.000	20
Di-isopropyl ether	0.125	0.115	0.113	92.0	90.4	60.0-136			1.75	20
Ethylbenzene	0.125	0.130	0.130	104	104	74.0-126			0.000	20
Hexachloro-1,3-butadiene	0.125	0.135	0.149	108	119	57.0-150			9.86	20
Isopropylbenzene	0.125	0.134	0.130	107	104	72.0-127			3.03	20
p-Isopropyltoluene	0.125	0.129	0.135	103	108	72.0-133			4.55	20
2-Butanone (MEK)	0.625	0.600	0.572	96.0	91.5	30.0-160			4.78	24
Methylene Chloride	0.125	0.134	0.126	107	101	68.0-123			6.15	20
4-Methyl-2-pentanone (MIBK)	0.625	0.558	0.579	89.3	92.6	56.0-143			3.69	20
Methyl tert-butyl ether	0.125	0.123	0.115	98.4	92.0	66.0-132			6.72	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795727-1 05/24/22 23:51 • (LCSD) R3795727-2 05/25/22 00:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.122	0.144	97.6	115	59.0-130			16.5	20
n-Propylbenzene	0.125	0.123	0.123	98.4	98.4	74.0-126			0.000	20
Styrene	0.125	0.126	0.125	101	100	72.0-127			0.797	20
1,1,1,2-Tetrachloroethane	0.125	0.128	0.132	102	106	74.0-129			3.08	20
1,1,2,2-Tetrachloroethane	0.125	0.114	0.117	91.2	93.6	68.0-128			2.60	20
1,1,2-Trichlorotrifluoroethane	0.125	0.143	0.140	114	112	61.0-139			2.12	20
Tetrachloroethene	0.125	0.131	0.130	105	104	70.0-136			0.766	20
Toluene	0.125	0.123	0.126	98.4	101	75.0-121			2.41	20
1,2,3-Trichlorobenzene	0.125	0.132	0.152	106	122	59.0-139			14.1	20
1,2,4-Trichlorobenzene	0.125	0.124	0.142	99.2	114	62.0-137			13.5	20
1,1,1-Trichloroethane	0.125	0.140	0.140	112	112	69.0-126			0.000	20
1,1,2-Trichloroethane	0.125	0.127	0.129	102	103	78.0-123			1.56	20
Trichloroethene	0.125	0.139	0.129	111	103	76.0-126			7.46	20
Trichlorofluoromethane	0.125	0.130	0.117	104	93.6	61.0-142			10.5	20
1,2,3-Trichloropropane	0.125	0.118	0.112	94.4	89.6	67.0-129			5.22	20
1,2,4-Trimethylbenzene	0.125	0.125	0.126	100	101	70.0-126			0.797	20
1,2,3-Trimethylbenzene	0.125	0.108	0.115	86.4	92.0	74.0-124			6.28	20
1,3,5-Trimethylbenzene	0.125	0.122	0.121	97.6	96.8	73.0-127			0.823	20
Vinyl chloride	0.125	0.134	0.122	107	97.6	63.0-134			9.38	20
Xylenes, Total	0.375	0.386	0.376	103	100	72.0-127			2.62	20
(S) Toluene-d8				*101*	*106*	*75.0-131*				
(S) 4-Bromofluorobenzene				*98.4*	*94.3*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*94.3*	*90.2*	*70.0-130*				

L1496425-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496425-04 05/25/22 17:29 • (MS) R3795727-4 05/25/22 18:23 • (MSD) R3795727-5 05/25/22 18:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.300	U	0.111	0.124	37.0	41.3	1	10.0-160			11.1	40
Acrylonitrile	0.300	U	0.215	0.250	71.7	83.3	1	10.0-160			15.1	40
Benzene	0.0600	U	0.0312	0.0258	52.0	43.0	1	10.0-149			18.9	37
Bromobenzene	0.0600	U	0.0407	0.0396	67.8	66.0	1	10.0-156			2.74	38
Bromodichloromethane	0.0600	U	0.0387	0.0366	64.5	61.0	1	10.0-143			5.58	37
Bromoform	0.0600	U	0.0409	0.0430	68.2	71.7	1	10.0-146			5.01	36
Bromomethane	0.0600	U	0.0194	0.0150	32.3	25.0	1	10.0-149			25.6	38
n-Butylbenzene	0.0600	U	0.0307	0.0239	51.2	39.8	1	10.0-160			24.9	40
sec-Butylbenzene	0.0600	U	0.0326	0.0239	54.3	39.8	1	10.0-159			30.8	39
tert-Butylbenzene	0.0600	U	0.0341	0.0255	56.8	42.5	1	10.0-156			28.9	39

L1496425-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496425-04 05/25/22 17:29 • (MS) R3795727-4 05/25/22 18:23 • (MSD) R3795727-5 05/25/22 18:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.0600	U	0.0264	0.0173	44.0	28.8	1	10.0-145		J3	41.6	37
Chlorobenzene	0.0600	U	0.0329	0.0297	54.8	49.5	1	10.0-152			10.2	39
Chlorodibromomethane	0.0600	U	0.0452	0.0447	75.3	74.5	1	10.0-146			1.11	37
Chloroethane	0.0600	U	0.0122	0.00872	20.3	14.5	1	10.0-146			33.3	40
Chloroform	0.0600	U	0.0328	0.0282	54.7	47.0	1	10.0-146			15.1	37
Chloromethane	0.0600	U	0.0249	0.0178	41.5	29.7	1	10.0-159			33.3	37
2-Chlorotoluene	0.0600	U	0.0325	0.0287	54.2	47.8	1	10.0-159			12.4	38
4-Chlorotoluene	0.0600	U	0.0330	0.0314	55.0	52.3	1	10.0-155			4.97	39
1,2-Dibromo-3-Chloropropane	0.0600	U	0.0483	0.0625	80.5	104	1	10.0-151			25.6	39
1,2-Dibromoethane	0.0600	U	0.0482	0.0520	80.3	86.7	1	10.0-148			7.58	34
Dibromomethane	0.0600	U	0.0423	0.0452	70.5	75.3	1	10.0-147			6.63	35
1,2-Dichlorobenzene	0.0600	U	0.0399	0.0418	66.5	69.7	1	10.0-155			4.65	37
1,3-Dichlorobenzene	0.0600	U	0.0374	0.0351	62.3	58.5	1	10.0-153			6.34	38
1,4-Dichlorobenzene	0.0600	U	0.0357	0.0365	59.5	60.8	1	10.0-151			2.22	38
Dichlorodifluoromethane	0.0600	U	0.0270	0.0145	45.0	24.2	1	10.0-160		J3	60.2	35
1,1-Dichloroethane	0.0600	U	0.0358	0.0254	59.7	42.3	1	10.0-147			34.0	37
1,2-Dichloroethane	0.0600	U	0.0360	0.0361	60.0	60.2	1	10.0-148			0.277	35
1,1-Dichloroethene	0.0600	U	0.0306	0.0206	51.0	34.3	1	10.0-155		J3	39.1	37
cis-1,2-Dichloroethene	0.0600	U	0.0322	0.0271	53.7	45.2	1	10.0-149			17.2	37
trans-1,2-Dichloroethene	0.0600	U	0.0318	0.0230	53.0	38.3	1	10.0-150			32.1	37
1,2-Dichloropropane	0.0600	U	0.0335	0.0316	55.8	52.7	1	10.0-148			5.84	37
1,1-Dichloropropene	0.0600	0.000984	0.0255	0.0184	42.5	30.7	1	10.0-153			32.3	35
1,3-Dichloropropane	0.0600	U	0.0501	0.0496	83.5	82.7	1	10.0-154			1.00	35
cis-1,3-Dichloropropene	0.0600	U	0.0365	0.0336	60.8	56.0	1	10.0-151			8.27	37
trans-1,3-Dichloropropene	0.0600	U	0.0410	0.0426	68.3	71.0	1	10.0-148			3.83	37
2,2-Dichloropropane	0.0600	0.00448	0.0143	0.0116	23.8	19.3	1	10.0-138			20.8	36
Di-isopropyl ether	0.0600	U	0.0385	0.0357	64.2	59.5	1	10.0-147			7.55	36
Ethylbenzene	0.0600	U	0.0346	0.0248	57.7	41.3	1	10.0-160			33.0	38
Hexachloro-1,3-butadiene	0.0600	U	0.0390	0.0276	65.0	46.0	1	10.0-160			34.2	40
Isopropylbenzene	0.0600	U	0.0511	0.0218	85.2	36.3	1	10.0-155		J3	80.4	38
p-Isopropyltoluene	0.0600	U	0.0312	0.0242	52.0	40.3	1	10.0-160			25.3	40
2-Butanone (MEK)	0.300	U	0.169	0.262	56.3	87.3	1	10.0-160		J3	43.2	40
Methylene Chloride	0.0600	U	0.0357	0.00860	59.5	14.3	1	10.0-141		J3	122	37
4-Methyl-2-pentanone (MIBK)	0.300	U	0.235	0.261	78.3	87.0	1	10.0-160			10.5	35
Methyl tert-butyl ether	0.0600	U	0.0368	0.0438	61.3	73.0	1	11.0-147			17.4	35
Naphthalene	0.0600	U	0.0663	0.0769	111	128	1	10.0-160			14.8	36
n-Propylbenzene	0.0600	U	0.0298	0.0235	49.7	39.2	1	10.0-158			23.6	38
Styrene	0.0600	U	0.0350	0.0306	58.3	51.0	1	10.0-160			13.4	40
1,1,1,2-Tetrachloroethane	0.0600	U	0.0368	0.0349	61.3	58.2	1	10.0-149			5.30	39
1,1,2,2-Tetrachloroethane	0.0600	U	0.00998	0.00778	16.6	13.0	1	10.0-160			24.8	35

L1496425-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496425-04 05/25/22 17:29 • (MS) R3795727-4 05/25/22 18:23 • (MSD) R3795727-5 05/25/22 18:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2-Trichlorotrifluoroethane	0.0600	U	0.0305	0.0168	50.8	28.0	1	10.0-160		J3	57.9	36
Tetrachloroethene	0.0600	U	0.0276	0.0205	46.0	34.2	1	10.0-156			29.5	39
Toluene	0.0600	0.00372	0.0610	0.0299	102	49.8	1	10.0-156		J3	68.4	38
1,2,3-Trichlorobenzene	0.0600	0.0111	0.0691	0.0708	115	118	1	10.0-160			2.43	40
1,2,4-Trichlorobenzene	0.0600	U	0.0535	0.0520	89.2	86.7	1	10.0-160			2.84	40
1,1,1-Trichloroethane	0.0600	U	0.0291	0.0194	48.5	32.3	1	10.0-144		J3	40.0	35
1,1,2-Trichloroethane	0.0600	U	0.0577	0.0480	96.2	80.0	1	10.0-160			18.4	35
Trichloroethene	0.0600	U	0.0583	0.0602	97.2	100	1	10.0-156			3.21	38
Trichlorofluoromethane	0.0600	0.00121	0.0151	0.0104	25.2	17.3	1	10.0-160			36.9	40
1,2,3-Trichloropropane	0.0600	U	0.0540	0.0588	90.0	98.0	1	10.0-156			8.51	35
1,2,4-Trimethylbenzene	0.0600	U	0.0329	0.0289	54.8	48.2	1	10.0-160			12.9	36
1,2,3-Trimethylbenzene	0.0600	U	0.0337	0.0307	56.2	51.2	1	10.0-160			9.32	36
1,3,5-Trimethylbenzene	0.0600	U	0.0315	0.0257	52.5	42.8	1	10.0-160			20.3	38
Vinyl chloride	0.0600	U	0.0241	0.0158	40.2	26.3	1	10.0-160		J3	41.6	37
Xylenes, Total	0.180	U	0.0873	0.0759	48.5	42.2	1	10.0-160			14.0	38
(S) Toluene-d8					*109*	*110*		*75.0-131*				
(S) 4-Bromofluorobenzene					*90.4*	*91.2*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*90.9*	*93.1*		*70.0-130*				

Method Blank (MB)

(MB) R3798171-2 05/31/22 13:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*115*			*23.0-120*
(S) Nitrobenzene-d5	*78.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*88.6*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3798171-1 05/31/22 13:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0593	74.1	50.0-126	
Acenaphthene	0.0800	0.0674	84.3	50.0-120	
Acenaphthylene	0.0800	0.0692	86.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0560	70.0	45.0-120	
Benzo(a)pyrene	0.0800	0.0547	68.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0643	80.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0672	84.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0650	81.3	49.0-125	
Chrysene	0.0800	0.0626	78.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0691	86.4	47.0-125	
Fluoranthene	0.0800	0.0661	82.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3798171-1 05/31/22 13:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0665	83.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0630	78.8	46.0-125	
Naphthalene	0.0800	0.0673	84.1	50.0-120	
Phenanthrene	0.0800	0.0640	80.0	47.0-120	
Pyrene	0.0800	0.0674	84.3	43.0-123	
1-Methylnaphthalene	0.0800	0.0698	87.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0657	82.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0664	83.0	50.0-120	
(S) p-Terphenyl-d14			*108*	*23.0-120*	
(S) Nitrobenzene-d5			*85.5*	*14.0-149*	
(S) 2-Fluorobiphenyl			*93.8*	*34.0-125*	

L1496211-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496211-10 05/31/22 19:12 • (MS) R3798171-3 05/31/22 19:32 • (MSD) R3798171-4 05/31/22 19:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0796	0.0226	0.0767	0.0757	68.0	66.7	1	10.0-145			1.31	30
Acenaphthene	0.0796	0.00245	0.0608	0.0624	73.3	75.3	1	14.0-127			2.60	27
Acenaphthylene	0.0796	0.0195	0.0844	0.0820	81.5	78.5	1	21.0-124			2.88	25
Benzo(a)anthracene	0.0796	1.05	0.361	0.243	0.000	0.000	1	10.0-139	V	J3 V	39.1	30
Benzo(a)pyrene	0.0796	0.631	0.275	0.211	0.000	0.000	1	10.0-141	V	V	26.3	31
Benzo(b)fluoranthene	0.0796	0.995	0.386	0.307	0.000	0.000	1	10.0-140	V	V	22.8	36
Benzo(g,h,i)perylene	0.0796	0.288	0.232	0.148	0.000	0.000	1	10.0-140	J6	J3 J6	44.2	33
Benzo(k)fluoranthene	0.0796	0.328	0.175	0.147	0.000	0.000	1	10.0-137	V	V	17.4	31
Chrysene	0.0796	0.865	0.372	0.289	0.000	0.000	1	10.0-145	V	V	25.1	30
Dibenz(a,h)anthracene	0.0796	0.0692	0.0730	0.0611	4.77	0.000	1	10.0-132	J6	J6	17.7	31
Fluoranthene	0.0796	0.886	0.324	0.231	0.000	0.000	1	10.0-153	V	J3 V	33.5	33
Fluorene	0.0796	0.00401	0.0638	0.0645	75.1	76.0	1	11.0-130			1.09	29
Indeno(1,2,3-cd)pyrene	0.0796	0.334	0.187	0.147	0.000	0.000	1	10.0-137	V	V	24.0	32
Naphthalene	0.0796	0.0570	0.0876	0.0997	38.4	53.6	1	10.0-135			12.9	27
Phenanthrene	0.0796	0.0706	0.111	0.105	50.8	43.2	1	10.0-144			5.56	31
Pyrene	0.0796	0.943	0.331	0.235	0.000	0.000	1	10.0-148	V	V	33.9	35
1-Methylnaphthalene	0.0796	0.0544	0.0922	0.101	47.5	58.5	1	10.0-142			9.11	28
2-Methylnaphthalene	0.0796	0.0606	0.0927	0.108	40.3	59.5	1	10.0-137			15.2	28
2-Chloronaphthalene	0.0796	U	0.0589	0.0548	74.0	68.8	1	29.0-120			7.21	24
(S) p-Terphenyl-d14					*95.8*	*89.2*		*23.0-120*				
(S) Nitrobenzene-d5					*91.9*	*88.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*84.9*	*81.1*		*34.0-125*				

Method Blank (MB)

(MB) R3798205-2 05/31/22 11:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*110*			*23.0-120*
(S) Nitrobenzene-d5	*101*			*14.0-149*
(S) 2-Fluorobiphenyl	*88.8*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3798205-1 05/31/22 11:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0664	83.0	50.0-126	
Acenaphthene	0.0800	0.0629	78.6	50.0-120	
Acenaphthylene	0.0800	0.0695	86.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0688	86.0	45.0-120	
Benzo(a)pyrene	0.0800	0.0570	71.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0594	74.3	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0581	72.6	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0577	72.1	49.0-125	
Chrysene	0.0800	0.0631	78.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0628	78.5	47.0-125	
Fluoranthene	0.0800	0.0664	83.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3798205-1 05/31/22 11:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0649	81.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0664	83.0	46.0-125	
Naphthalene	0.0800	0.0662	82.8	50.0-120	
Phenanthrene	0.0800	0.0623	77.9	47.0-120	
Pyrene	0.0800	0.0609	76.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0659	82.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0613	76.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0583	72.9	50.0-120	
(S) p-Terphenyl-d14			*107*	*23.0-120*	
(S) Nitrobenzene-d5			*103*	*14.0-149*	
(S) 2-Fluorobiphenyl			*88.5*	*34.0-125*	

L1496450-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496450-07 05/31/22 14:06 • (MS) R3798205-3 05/31/22 14:25 • (MSD) R3798205-4 05/31/22 14:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0798	U	0.0460	0.0363	57.5	45.4	1	10.0-145			23.6	30
Acenaphthene	0.0798	0.00922	0.0535	0.0412	55.3	40.0	1	14.0-127			26.0	27
Acenaphthylene	0.0798	U	0.0477	0.0440	59.6	55.0	1	21.0-124			8.07	25
Benzo(a)anthracene	0.0798	U	0.0458	0.0334	57.3	41.8	1	10.0-139		J3	31.3	30
Benzo(a)pyrene	0.0798	U	0.0409	0.0305	51.1	38.1	1	10.0-141			29.1	31
Benzo(b)fluoranthene	0.0798	U	0.0388	0.0278	48.5	34.8	1	10.0-140			33.0	36
Benzo(g,h,i)perylene	0.0798	U	0.0381	0.0277	47.6	34.6	1	10.0-140			31.6	33
Benzo(k)fluoranthene	0.0798	U	0.0386	0.0295	48.3	36.9	1	10.0-137			26.7	31
Chrysene	0.0798	U	0.0442	0.0344	55.3	43.0	1	10.0-145			24.9	30
Dibenz(a,h)anthracene	0.0798	U	0.0405	0.0312	50.6	39.0	1	10.0-132			25.9	31
Fluoranthene	0.0798	0.00344	0.0493	0.0349	57.3	39.3	1	10.0-153		J3	34.2	33
Fluorene	0.0798	0.00418	0.0507	0.0388	58.2	43.3	1	11.0-130			26.6	29
Indeno(1,2,3-cd)pyrene	0.0798	U	0.0425	0.0308	53.1	38.5	1	10.0-137			31.9	32
Naphthalene	0.0798	0.0159	0.0573	0.0556	51.8	49.6	1	10.0-135			3.01	27
Phenanthrene	0.0798	0.00512	0.0492	0.0361	55.1	38.7	1	10.0-144			30.7	31
Pyrene	0.0798	0.00318	0.0449	0.0319	52.1	35.9	1	10.0-148			33.9	35
1-Methylnaphthalene	0.0798	0.00606	0.0519	0.0467	57.3	50.8	1	10.0-142			10.5	28
2-Methylnaphthalene	0.0798	0.00541	0.0467	0.0426	51.6	46.5	1	10.0-137			9.18	28
2-Chloronaphthalene	0.0798	U	0.0424	0.0391	53.0	48.9	1	29.0-120			8.10	24
(S) p-Terphenyl-d14					*71.9*	*59.2*		*23.0-120*				
(S) Nitrobenzene-d5					*74.1*	*80.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*63.1*	*60.1*		*34.0-125*				

L1496465-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1496465-10 05/31/22 15:05 • (MS) R3798205-5 05/31/22 15:25 • (MSD) R3798205-6 05/31/22 15:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0802	0.0236	0.0642	0.561	50.8	672	1	10.0-145		J3 J5	159	30
Acenaphthene	0.0802	0.0904	0.0705	1.21	0.000	1400	1	14.0-127	J6	J3 J5	178	27
Acenaphthylene	0.0802	U	0.0636	0.0804	79.5	101	1	21.0-124			23.3	25
Benzo(a)anthracene	0.0802	0.0211	0.0655	0.335	55.5	392	1	10.0-139		J3 J5	135	30
Benzo(a)pyrene	0.0802	0.0118	0.0576	0.140	57.3	160	1	10.0-141		J3 J5	83.4	31
Benzo(b)fluoranthene	0.0802	0.0138	0.0552	0.175	51.8	202	1	10.0-140		J3 J5	104	36
Benzo(g,h,i)perylene	0.0802	0.00315	0.0499	0.0721	58.4	86.2	1	10.0-140		J3	36.4	33
Benzo(k)fluoranthene	0.0802	0.00490	0.0530	0.105	60.1	125	1	10.0-137		J3	65.8	31
Chrysene	0.0802	0.0154	0.0606	0.873	56.5	1070	1	10.0-145		J3 J5	174	30
Dibenz(a,h)anthracene	0.0802	U	0.0533	0.0634	66.6	79.3	1	10.0-132			17.3	31
Fluoranthene	0.0802	0.108	0.0787	1.36	0.000	1570	1	10.0-153	J6	J3 J5	178	33
Fluorene	0.0802	0.0774	0.0716	1.16	0.000	1350	1	11.0-130	J6	J3 J5	177	29
Indeno(1,2,3-cd)pyrene	0.0802	0.00435	0.0564	0.0864	65.1	103	1	10.0-137		J3	42.0	32
Naphthalene	0.0802	0.0301	0.0695	0.731	49.3	876	1	10.0-135		J3 J5	165	27
Phenanthrene	0.0802	0.193	0.0737	3.27	0.000	3850	1	10.0-144	J6	J3 J5	191	31
Pyrene	0.0802	0.0689	0.0661	0.881	0.000	1020	1	10.0-148	J6	J3 J5	172	35
1-Methylnaphthalene	0.0802	0.0366	0.0680	0.551	39.3	643	1	10.0-142		J3 J5	156	28
2-Methylnaphthalene	0.0802	0.0416	0.0624	0.856	26.0	1020	1	10.0-137		J3 J5	173	28
2-Chloronaphthalene	0.0802	U	0.0536	0.0529	67.0	66.1	1	29.0-120			1.31	24
(S) p-Terphenyl-d14					*99.8*	*100*		*23.0-120*				
(S) Nitrobenzene-d5					*97.6*	*94.6*		*14.0-149*				
(S) 2-Fluorobiphenyl					*84.4*	*81.4*		*34.0-125*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Trinity Consultants
16252 West Woods Business Park Drive
Ellisville, MO 63021

Billing Information:

Report to: Doug Abeln

Email To: dabeln@trinityconsultants.com

Project Description: OSHKATI VRP

City/State Collected: East Chicago INDIANA

Please Circle: PT MT CT ET

P 636-256-5643
M 314-277-8028

Client Project # 222601.0094

Lab Project #

Collected by (print): D. Abeln

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 = 2-40ml NaHS04 1- MeOH	PAH8270 SIMS = 4oz jar	TS & LAB PID SCREEN = 2oz jar	Remarks	Sample # (lab only)
PH 04 Soil 1.5-2'	G	SS	1.5-2	5/12/22	9:50 am	5	X	X	X		-01
PH 06 Soil 1.5-2'			1.5-2		10:45 am						-02
PH 12 Soil 1.5-2'			1.5-2		11:35 am						-03
PH 15 Soil 1.5-2'			1.5-2		12:05 pm						-04
PH 17 Soil 1.5-2'			1.5-2		12:45 pm						-05
PH 14 Soil ~~1.5-2.5'~~			1.5-2.5		1:05 pm						-06
PH 13 Soil 2-2.5'			2-2.5		1:25 pm						-07
PH 11 Soil 2-2.5'			2-2.5		1:45 pm						-08
PH 10 Soil 1.5-2.25			1.5-2.25		2:00 pm						-09
PH 09 Soil 2-2.5'			2-2.5		2:20 pm						-10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5755 3088 6960

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	5/16/22	10:30		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.4 °C 1.0 to=1.0 Bottles Received: 90	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/19/22 Time: 09:00	Hold: Condition: NCF / OK

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1496268

Table # E094

Acctnum: SCHYON

Template:

Prelogin:

PM:

PB:

Shipped Via:

Trinity Consultants
16252 West Woods Business Park Drive
Ellisville, MO 63021

Billing Information:

Report to: Doug Abeln

Email To: dabeln@trinityconsultants.com

Project Description: OSHMAT VRP

City/State Collected: EAST CHICAGO INDIANA

Please Circle: PT MT CT ET

P 636-256-5643
M 314-277-8028

Client Project # 222601.0094

Lab Project #

Collected by (print): D. Abeln

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 = 2-40ml NaHS04 1- MeOH	PAH8270 SIMS = 4oz jar	TS & LAB PID SCREEN = 2oz jar	Remarks	Sample # (lab only)
PH 08 SOIL 2.5-3'	G	SS	2.5-3	5/17/22	2:40 pm	5	X	X	X		-11
PH 05 SOIL 1.5-2'			1.5-2		3:00 pm						-12
PH 07 SOIL 1-1.5'			1-1.5		3:20 pm						-13
PH 16 SOIL 1.5-2.5'			1.5-2.5		3:45 pm						-14
PH 02 SOIL 1.25-2.25'			1.25-2.25		4:20 pm						-15
PH 01 SOIL 5-6'			5-6'		5:00 pm						-16
PH 03 SOIL 1.25-2.25			1.25-2.25		5:20 pm						-17
DUP 01 SOIL	↓	↓	—	↓	—	↓	↓	↓	↓		-18

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 5755 8088 6960

Chain of Custody Page 2 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1496268

Table #

Acctnum: SCHYON

Template:

Prelogin:

PM:

PB:

Shipped Via:

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5/18/22	10:30	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Jerren E. Schofield

Trip Blank Received: (Yes) / No
(HCl) / MeOH
TBR

Temp: DRAFT C Bottles Received: 90
1.0+0=1.0

Date: 5/19/22 Time: 09:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

June 01, 2022

Trinity Consultants

Sample Delivery Group:	L1496464
Samples Received:	05/19/2022
Project Number:	202601.1094
Description:	OSCHACA1-VRP

Report To: Mr. Doug Abeln
16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

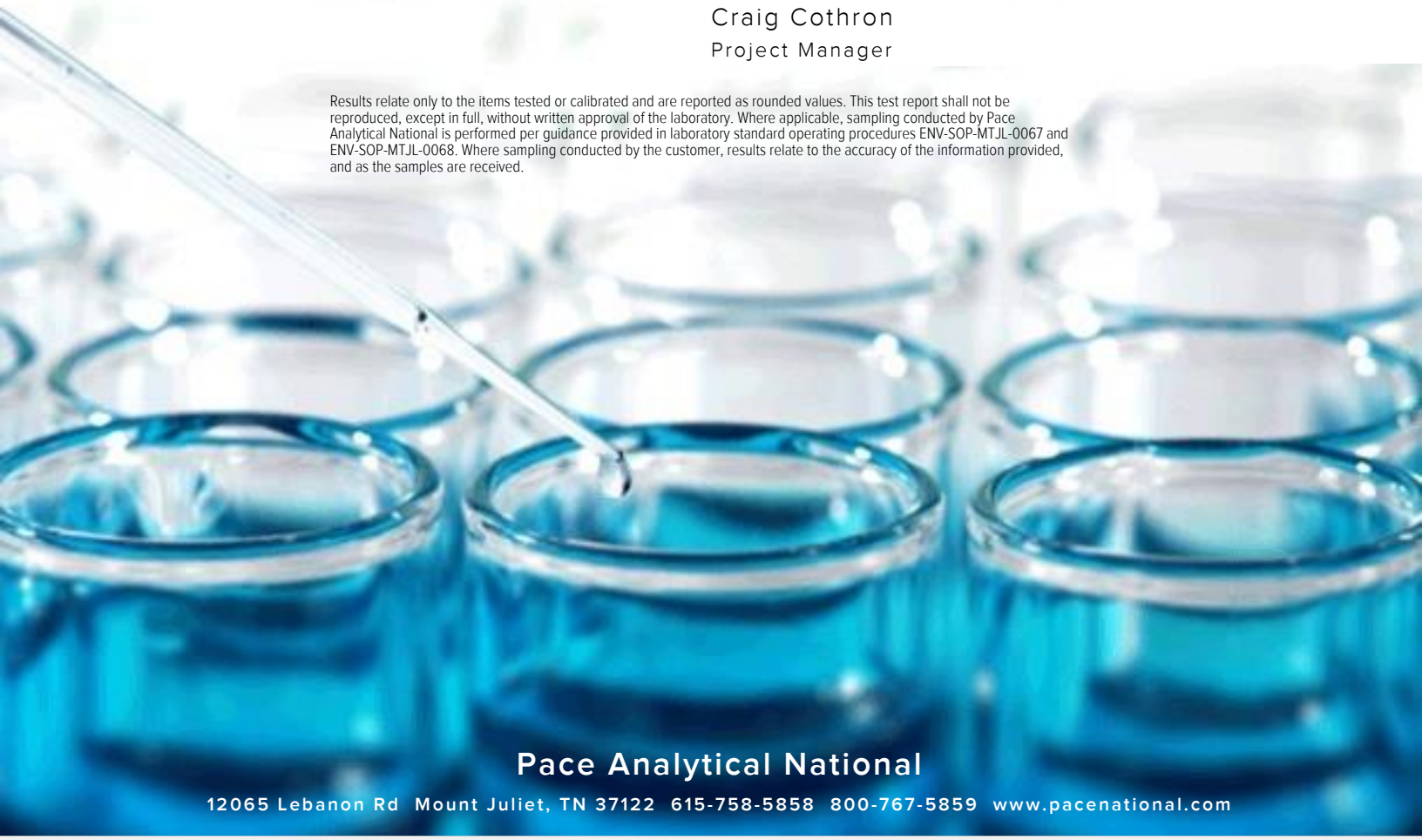

TABLE OF CONTENTS

PH 04 GW L1496464-01 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 08:57	05/26/22 08:57	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867708	1.82	05/24/22 08:47	05/24/22 22:03	AMG	Mt. Juliet, TN

PH 06 GW L1496464-02 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 09:18	05/26/22 09:18	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867708	2	05/24/22 08:47	05/24/22 22:55	AMG	Mt. Juliet, TN

PH 12 GW L1496464-03 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 09:40	05/26/22 09:40	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867709	10	05/24/22 08:50	05/24/22 21:01	AO	Mt. Juliet, TN

PH 15 GW L1496464-04 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 10:01	05/26/22 10:01	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867709	1	05/24/22 08:50	05/26/22 20:36	JNJ	Mt. Juliet, TN

FB 01 L1496464-05 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 04:16	05/26/22 04:16	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867709	1	05/24/22 08:50	05/24/22 19:16	AO	Mt. Juliet, TN

RB 01 L1496464-06 GW

Collected by: D. Abeln | Collected date/time: 05/17/22 17:40 | Received date/time: 05/19/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1869701	1	05/26/22 04:38	05/26/22 04:38	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1867709	1	05/24/22 08:50	05/24/22 19:34	AO	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	05/26/2022 08:57	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 08:57	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 08:57	WG1869701
Benzene	0.000370	J	0.0000941	0.00100	1	05/26/2022 08:57	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 08:57	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 08:57	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 08:57	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 08:57	WG1869701
n-Butylbenzene	U		0.000157	0.00100	1	05/26/2022 08:57	WG1869701
sec-Butylbenzene	U		0.000125	0.00100	1	05/26/2022 08:57	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 08:57	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 08:57	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 08:57	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 08:57	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 08:57	WG1869701
Chloroform	U		0.000111	0.00500	1	05/26/2022 08:57	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 08:57	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 08:57	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 08:57	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 08:57	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 08:57	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 08:57	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 08:57	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 08:57	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 08:57	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 08:57	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 08:57	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 08:57	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 08:57	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 08:57	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 08:57	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 08:57	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 08:57	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 08:57	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 08:57	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 08:57	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 08:57	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 08:57	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 08:57	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 08:57	WG1869701
Isopropylbenzene	U		0.000105	0.00100	1	05/26/2022 08:57	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 08:57	WG1869701
2-Butanone (MEK)	0.00350	J	0.00119	0.0100	1	05/26/2022 08:57	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 08:57	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 08:57	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 08:57	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 08:57	WG1869701
n-Propylbenzene	U		0.0000993	0.00100	1	05/26/2022 08:57	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 08:57	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 08:57	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 08:57	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 08:57	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 08:57	WG1869701
Toluene	U		0.000278	0.00100	1	05/26/2022 08:57	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 08:57	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 08:57	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 08:57	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 08:57	WG1869701
Trichloroethene	U		0.000190	0.00100	1	05/26/2022 08:57	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 08:57	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 08:57	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 08:57	WG1869701
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 08:57	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 08:57	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 08:57	WG1869701
Xylenes, Total	0.000231	J	0.000174	0.00300	1	05/26/2022 08:57	WG1869701
(S) Toluene-d8	*107*			*80.0-120*		*05/26/2022 08:57*	WG1869701
(S) 4-Bromofluorobenzene	*99.0*			*77.0-126*		*05/26/2022 08:57*	WG1869701
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*05/26/2022 08:57*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000346	0.0000910	1.82	05/24/2022 22:03	WG1867708
Acenaphthene	U		0.0000346	0.0000910	1.82	05/24/2022 22:03	WG1867708
Acenaphthylene	U		0.0000311	0.0000910	1.82	05/24/2022 22:03	WG1867708
Benzo(a)anthracene	0.0000384	J	0.0000369	0.0000910	1.82	05/24/2022 22:03	WG1867708
Benzo(a)pyrene	U	J4	0.0000335	0.0000910	1.82	05/24/2022 22:03	WG1867708
Benzo(b)fluoranthene	0.0000500	J	0.0000306	0.0000910	1.82	05/24/2022 22:03	WG1867708
Benzo(g,h,i)perylene	0.0000364	J J4	0.0000335	0.0000910	1.82	05/24/2022 22:03	WG1867708
Benzo(k)fluoranthene	U	J4	0.0000368	0.0000910	1.82	05/24/2022 22:03	WG1867708
Chrysene	0.0000426	J	0.0000326	0.0000910	1.82	05/24/2022 22:03	WG1867708
Dibenz(a,h)anthracene	U	J4	0.0000291	0.0000910	1.82	05/24/2022 22:03	WG1867708
Fluoranthene	0.0000908	J	0.0000491	0.000182	1.82	05/24/2022 22:03	WG1867708
Fluorene	U		0.0000308	0.0000910	1.82	05/24/2022 22:03	WG1867708
Indeno(1,2,3-cd)pyrene	0.0000306	J J4	0.0000288	0.0000910	1.82	05/24/2022 22:03	WG1867708
Naphthalene	U		0.000167	0.000455	1.82	05/24/2022 22:03	WG1867708
Phenanthrene	0.0000976		0.0000328	0.0000910	1.82	05/24/2022 22:03	WG1867708
Pyrene	0.0000924		0.0000308	0.0000910	1.82	05/24/2022 22:03	WG1867708
1-Methylnaphthalene	U		0.000125	0.000455	1.82	05/24/2022 22:03	WG1867708
2-Methylnaphthalene	U		0.000123	0.000455	1.82	05/24/2022 22:03	WG1867708
2-Chloronaphthalene	U		0.000124	0.000455	1.82	05/24/2022 22:03	WG1867708
(S) Nitrobenzene-d5	*96.7*			*31.0-160*		*05/24/2022 22:03*	WG1867708
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*05/24/2022 22:03*	WG1867708
(S) p-Terphenyl-d14	*95.3*			*37.0-146*		*05/24/2022 22:03*	WG1867708

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	05/26/2022 09:18	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 09:18	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 09:18	WG1869701
Benzene	0.000150	J	0.0000941	0.00100	1	05/26/2022 09:18	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 09:18	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 09:18	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 09:18	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 09:18	WG1869701
n-Butylbenzene	U		0.000157	0.00100	1	05/26/2022 09:18	WG1869701
sec-Butylbenzene	U		0.000125	0.00100	1	05/26/2022 09:18	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 09:18	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 09:18	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 09:18	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 09:18	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 09:18	WG1869701
Chloroform	U		0.000111	0.00500	1	05/26/2022 09:18	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 09:18	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 09:18	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 09:18	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 09:18	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 09:18	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 09:18	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 09:18	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 09:18	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 09:18	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 09:18	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 09:18	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 09:18	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 09:18	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 09:18	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 09:18	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 09:18	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 09:18	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 09:18	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 09:18	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 09:18	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 09:18	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 09:18	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 09:18	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 09:18	WG1869701
Isopropylbenzene	U		0.000105	0.00100	1	05/26/2022 09:18	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 09:18	WG1869701
2-Butanone (MEK)	U		0.00119	0.0100	1	05/26/2022 09:18	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 09:18	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 09:18	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 09:18	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 09:18	WG1869701
n-Propylbenzene	U		0.0000993	0.00100	1	05/26/2022 09:18	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 09:18	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 09:18	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 09:18	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 09:18	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 09:18	WG1869701
Toluene	U		0.000278	0.00100	1	05/26/2022 09:18	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 09:18	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 09:18	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 09:18	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 09:18	WG1869701
Trichloroethene	0.000649	J	0.000190	0.00100	1	05/26/2022 09:18	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 09:18	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 09:18	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 09:18	WG1869701
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 09:18	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 09:18	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 09:18	WG1869701
Xylenes, Total	U		0.000174	0.00300	1	05/26/2022 09:18	WG1869701
(S) Toluene-d8	*107*			*80.0-120*		*05/26/2022 09:18*	WG1869701
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*05/26/2022 09:18*	WG1869701
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*05/26/2022 09:18*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.00102		0.0000380	0.000100	2	05/24/2022 22:55	WG1867708
Acenaphthene	0.00228		0.0000380	0.000100	2	05/24/2022 22:55	WG1867708
Acenaphthylene	0.000172		0.0000342	0.000100	2	05/24/2022 22:55	WG1867708
Benzo(a)anthracene	0.00330		0.0000406	0.000100	2	05/24/2022 22:55	WG1867708
Benzo(a)pyrene	0.00351	J4	0.0000368	0.000100	2	05/24/2022 22:55	WG1867708
Benzo(b)fluoranthene	0.00538		0.0000336	0.000100	2	05/24/2022 22:55	WG1867708
Benzo(g,h,i)perylene	0.00267	J4	0.0000368	0.000100	2	05/24/2022 22:55	WG1867708
Benzo(k)fluoranthene	0.00198	J4	0.0000404	0.000100	2	05/24/2022 22:55	WG1867708
Chrysene	0.00355		0.0000358	0.000100	2	05/24/2022 22:55	WG1867708
Dibenz(a,h)anthracene	0.000518	J4	0.0000320	0.000100	2	05/24/2022 22:55	WG1867708
Fluoranthene	0.00901		0.0000540	0.000200	2	05/24/2022 22:55	WG1867708
Fluorene	0.00127		0.0000338	0.000100	2	05/24/2022 22:55	WG1867708
Indeno(1,2,3-cd)pyrene	0.00261	J4	0.0000316	0.000100	2	05/24/2022 22:55	WG1867708
Naphthalene	0.00129		0.000183	0.000500	2	05/24/2022 22:55	WG1867708
Phenanthrene	0.00682		0.0000360	0.000100	2	05/24/2022 22:55	WG1867708
Pyrene	0.00786		0.0000338	0.000100	2	05/24/2022 22:55	WG1867708
1-Methylnaphthalene	0.000751		0.000137	0.000500	2	05/24/2022 22:55	WG1867708
2-Methylnaphthalene	0.000587		0.000135	0.000500	2	05/24/2022 22:55	WG1867708
2-Chloronaphthalene	U		0.000136	0.000500	2	05/24/2022 22:55	WG1867708
(S) Nitrobenzene-d5	*104*			*31.0-160*		*05/24/2022 22:55*	WG1867708
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*05/24/2022 22:55*	WG1867708
(S) p-Terphenyl-d14	*100*			*37.0-146*		*05/24/2022 22:55*	WG1867708

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	05/26/2022 09:40	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 09:40	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 09:40	WG1869701
Benzene	0.000382	J	0.0000941	0.00100	1	05/26/2022 09:40	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 09:40	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 09:40	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 09:40	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 09:40	WG1869701
n-Butylbenzene	0.000266	J	0.000157	0.00100	1	05/26/2022 09:40	WG1869701
sec-Butylbenzene	0.000257	J	0.000125	0.00100	1	05/26/2022 09:40	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 09:40	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 09:40	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 09:40	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 09:40	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 09:40	WG1869701
Chloroform	U		0.000111	0.00500	1	05/26/2022 09:40	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 09:40	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 09:40	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 09:40	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 09:40	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 09:40	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 09:40	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 09:40	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 09:40	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 09:40	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 09:40	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 09:40	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 09:40	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 09:40	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 09:40	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 09:40	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 09:40	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 09:40	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 09:40	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 09:40	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 09:40	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 09:40	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 09:40	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 09:40	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 09:40	WG1869701
Isopropylbenzene	0.000259	J	0.000105	0.00100	1	05/26/2022 09:40	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 09:40	WG1869701
2-Butanone (MEK)	U		0.00119	0.0100	1	05/26/2022 09:40	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 09:40	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 09:40	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 09:40	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 09:40	WG1869701
n-Propylbenzene	0.000379	J	0.0000993	0.00100	1	05/26/2022 09:40	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 09:40	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 09:40	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 09:40	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 09:40	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 09:40	WG1869701
Toluene	0.000682	J	0.000278	0.00100	1	05/26/2022 09:40	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 09:40	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 09:40	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 09:40	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 09:40	WG1869701
Trichloroethene	U		0.000190	0.00100	1	05/26/2022 09:40	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 09:40	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 09:40	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 09:40	WG1869701
1,2,3-Trimethylbenzene	0.000272	J	0.000104	0.00100	1	05/26/2022 09:40	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 09:40	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 09:40	WG1869701
Xylenes, Total	0.000660	J	0.000174	0.00300	1	05/26/2022 09:40	WG1869701
(S) Toluene-d8	*108*			*80.0-120*		*05/26/2022 09:40*	WG1869701
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*05/26/2022 09:40*	WG1869701
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*05/26/2022 09:40*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.000276	J	0.000190	0.000500	10	05/24/2022 21:01	WG1867709
Acenaphthene	0.00442		0.000190	0.000500	10	05/24/2022 21:01	WG1867709
Acenaphthylene	U		0.000171	0.000500	10	05/24/2022 21:01	WG1867709
Benzo(a)anthracene	U		0.000203	0.000500	10	05/24/2022 21:01	WG1867709
Benzo(a)pyrene	U		0.000184	0.000500	10	05/24/2022 21:01	WG1867709
Benzo(b)fluoranthene	U		0.000168	0.000500	10	05/24/2022 21:01	WG1867709
Benzo(g,h,i)perylene	U		0.000184	0.000500	10	05/24/2022 21:01	WG1867709
Benzo(k)fluoranthene	U		0.000202	0.000500	10	05/24/2022 21:01	WG1867709
Chrysene	U		0.000179	0.000500	10	05/24/2022 21:01	WG1867709
Dibenz(a,h)anthracene	U		0.000160	0.000500	10	05/24/2022 21:01	WG1867709
Fluoranthene	U		0.000270	0.00100	10	05/24/2022 21:01	WG1867709
Fluorene	0.00451		0.000169	0.000500	10	05/24/2022 21:01	WG1867709
Indeno(1,2,3-cd)pyrene	U		0.000158	0.000500	10	05/24/2022 21:01	WG1867709
Naphthalene	0.00125	J	0.000917	0.00250	10	05/24/2022 21:01	WG1867709
Phenanthrene	0.00587		0.000180	0.000500	10	05/24/2022 21:01	WG1867709
Pyrene	0.000924		0.000169	0.000500	10	05/24/2022 21:01	WG1867709
1-Methylnaphthalene	0.0813		0.000687	0.00250	10	05/24/2022 21:01	WG1867709
2-Methylnaphthalene	0.00342		0.000674	0.00250	10	05/24/2022 21:01	WG1867709
2-Chloronaphthalene	U		0.000682	0.00250	10	05/24/2022 21:01	WG1867709
(S) Nitrobenzene-d5	*95.3*			*31.0-160*		*05/24/2022 21:01*	WG1867709
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*05/24/2022 21:01*	WG1867709
(S) p-Terphenyl-d14	*105*			*37.0-146*		*05/24/2022 21:01*	WG1867709

Sample Narrative:

L1496464-03 WG1867709: Dilution due to matrix

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	0.0125	J	0.0113	0.0500	1	05/26/2022 10:01	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 10:01	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 10:01	WG1869701
Benzene	0.000112	J	0.0000941	0.00100	1	05/26/2022 10:01	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 10:01	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 10:01	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 10:01	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 10:01	WG1869701
n-Butylbenzene	U		0.000157	0.00100	1	05/26/2022 10:01	WG1869701
sec-Butylbenzene	U		0.000125	0.00100	1	05/26/2022 10:01	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 10:01	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 10:01	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 10:01	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 10:01	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 10:01	WG1869701
Chloroform	U		0.000111	0.00500	1	05/26/2022 10:01	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 10:01	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 10:01	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 10:01	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 10:01	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 10:01	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 10:01	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 10:01	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 10:01	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 10:01	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 10:01	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 10:01	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 10:01	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 10:01	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 10:01	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 10:01	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 10:01	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 10:01	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 10:01	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 10:01	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 10:01	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 10:01	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 10:01	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 10:01	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 10:01	WG1869701
Isopropylbenzene	U		0.000105	0.00100	1	05/26/2022 10:01	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 10:01	WG1869701
2-Butanone (MEK)	U		0.00119	0.0100	1	05/26/2022 10:01	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 10:01	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 10:01	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 10:01	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 10:01	WG1869701
n-Propylbenzene	U		0.0000993	0.00100	1	05/26/2022 10:01	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 10:01	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 10:01	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 10:01	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 10:01	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 10:01	WG1869701
Toluene	U		0.000278	0.00100	1	05/26/2022 10:01	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 10:01	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 10:01	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 10:01	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 10:01	WG1869701
Trichloroethene	U		0.000190	0.00100	1	05/26/2022 10:01	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 10:01	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 10:01	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 10:01	WG1869701
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 10:01	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 10:01	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 10:01	WG1869701
Xylenes, Total	U		0.000174	0.00300	1	05/26/2022 10:01	WG1869701
(S) Toluene-d8	*110*			*80.0-120*		*05/26/2022 10:01*	WG1869701
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*05/26/2022 10:01*	WG1869701
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*05/26/2022 10:01*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.0000652		0.0000190	0.0000500	1	05/26/2022 20:36	WG1867709
Acenaphthene	0.0000950		0.0000190	0.0000500	1	05/26/2022 20:36	WG1867709
Acenaphthylene	U		0.0000171	0.0000500	1	05/26/2022 20:36	WG1867709
Benzo(a)anthracene	0.000348		0.0000203	0.0000500	1	05/26/2022 20:36	WG1867709
Benzo(a)pyrene	0.000343		0.0000184	0.0000500	1	05/26/2022 20:36	WG1867709
Benzo(b)fluoranthene	0.000557		0.0000168	0.0000500	1	05/26/2022 20:36	WG1867709
Benzo(g,h,i)perylene	0.000349		0.0000184	0.0000500	1	05/26/2022 20:36	WG1867709
Benzo(k)fluoranthene	0.000195		0.0000202	0.0000500	1	05/26/2022 20:36	WG1867709
Chrysene	0.000353		0.0000179	0.0000500	1	05/26/2022 20:36	WG1867709
Dibenz(a,h)anthracene	0.0000541		0.0000160	0.0000500	1	05/26/2022 20:36	WG1867709
Fluoranthene	0.000763		0.0000270	0.000100	1	05/26/2022 20:36	WG1867709
Fluorene	0.0000640		0.0000169	0.0000500	1	05/26/2022 20:36	WG1867709
Indeno(1,2,3-cd)pyrene	0.000308		0.0000158	0.0000500	1	05/26/2022 20:36	WG1867709
Naphthalene	0.000222	J	0.0000917	0.000250	1	05/26/2022 20:36	WG1867709
Phenanthrene	0.000572		0.0000180	0.0000500	1	05/26/2022 20:36	WG1867709
Pyrene	0.000768		0.0000169	0.0000500	1	05/26/2022 20:36	WG1867709
1-Methylnaphthalene	0.000361		0.0000687	0.000250	1	05/26/2022 20:36	WG1867709
2-Methylnaphthalene	0.000371		0.0000674	0.000250	1	05/26/2022 20:36	WG1867709
2-Chloronaphthalene	U		0.0000682	0.000250	1	05/26/2022 20:36	WG1867709
(S) Nitrobenzene-d5	*109*			*31.0-160*		*05/26/2022 20:36*	WG1867709
(S) 2-Fluorobiphenyl	*108*			*48.0-148*		*05/26/2022 20:36*	WG1867709
(S) p-Terphenyl-d14	*120*			*37.0-146*		*05/26/2022 20:36*	WG1867709

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	05/26/2022 04:16	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 04:16	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 04:16	WG1869701
Benzene	U		0.0000941	0.00100	1	05/26/2022 04:16	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 04:16	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 04:16	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 04:16	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 04:16	WG1869701
n-Butylbenzene	U		0.000157	0.00100	1	05/26/2022 04:16	WG1869701
sec-Butylbenzene	U		0.000125	0.00100	1	05/26/2022 04:16	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 04:16	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 04:16	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 04:16	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 04:16	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 04:16	WG1869701
Chloroform	0.000145	J	0.000111	0.00500	1	05/26/2022 04:16	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 04:16	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 04:16	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 04:16	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 04:16	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 04:16	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 04:16	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 04:16	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 04:16	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 04:16	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 04:16	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 04:16	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 04:16	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 04:16	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 04:16	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 04:16	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 04:16	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 04:16	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 04:16	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 04:16	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 04:16	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 04:16	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 04:16	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 04:16	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 04:16	WG1869701
Isopropylbenzene	U		0.000105	0.00100	1	05/26/2022 04:16	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 04:16	WG1869701
2-Butanone (MEK)	U		0.00119	0.0100	1	05/26/2022 04:16	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 04:16	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 04:16	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 04:16	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 04:16	WG1869701
n-Propylbenzene	U		0.0000993	0.00100	1	05/26/2022 04:16	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 04:16	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 04:16	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 04:16	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 04:16	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 04:16	WG1869701
Toluene	U		0.000278	0.00100	1	05/26/2022 04:16	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 04:16	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 04:16	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 04:16	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 04:16	WG1869701
Trichloroethene	U		0.000190	0.00100	1	05/26/2022 04:16	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 04:16	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 04:16	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 04:16	WG1869701
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 04:16	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 04:16	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 04:16	WG1869701
Xylenes, Total	U		0.000174	0.00300	1	05/26/2022 04:16	WG1869701
(S) Toluene-d8	*109*			*80.0-120*		*05/26/2022 04:16*	WG1869701
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*05/26/2022 04:16*	WG1869701
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*05/26/2022 04:16*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/24/2022 19:16	WG1867709
Acenaphthene	U		0.0000190	0.0000500	1	05/24/2022 19:16	WG1867709
Acenaphthylene	U		0.0000171	0.0000500	1	05/24/2022 19:16	WG1867709
Benzo(a)anthracene	0.0000261	J	0.0000203	0.0000500	1	05/24/2022 19:16	WG1867709
Benzo(a)pyrene	0.0000257	J	0.0000184	0.0000500	1	05/24/2022 19:16	WG1867709
Benzo(b)fluoranthene	0.0000351	J	0.0000168	0.0000500	1	05/24/2022 19:16	WG1867709
Benzo(g,h,i)perylene	0.0000196	J	0.0000184	0.0000500	1	05/24/2022 19:16	WG1867709
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/24/2022 19:16	WG1867709
Chrysene	0.0000248	J	0.0000179	0.0000500	1	05/24/2022 19:16	WG1867709
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/24/2022 19:16	WG1867709
Fluoranthene	0.0000666	J	0.0000270	0.000100	1	05/24/2022 19:16	WG1867709
Fluorene	U		0.0000169	0.0000500	1	05/24/2022 19:16	WG1867709
Indeno(1,2,3-cd)pyrene	0.0000226	J	0.0000158	0.0000500	1	05/24/2022 19:16	WG1867709
Naphthalene	U		0.0000917	0.000250	1	05/24/2022 19:16	WG1867709
Phenanthrene	0.0000403	J	0.0000180	0.0000500	1	05/24/2022 19:16	WG1867709
Pyrene	0.0000556		0.0000169	0.0000500	1	05/24/2022 19:16	WG1867709
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/24/2022 19:16	WG1867709
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/24/2022 19:16	WG1867709
2-Chloronaphthalene	U		0.0000682	0.000250	1	05/24/2022 19:16	WG1867709
(S) Nitrobenzene-d5	*116*			*31.0-160*		*05/24/2022 19:16*	WG1867709
(S) 2-Fluorobiphenyl	*104*			*48.0-148*		*05/24/2022 19:16*	WG1867709
(S) p-Terphenyl-d14	*117*			*37.0-146*		*05/24/2022 19:16*	WG1867709

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	05/26/2022 04:38	WG1869701
Acrolein	U		0.00254	0.0500	1	05/26/2022 04:38	WG1869701
Acrylonitrile	U		0.000671	0.0100	1	05/26/2022 04:38	WG1869701
Benzene	U		0.0000941	0.00100	1	05/26/2022 04:38	WG1869701
Bromobenzene	U		0.000118	0.00100	1	05/26/2022 04:38	WG1869701
Bromodichloromethane	U		0.000136	0.00100	1	05/26/2022 04:38	WG1869701
Bromoform	U		0.000129	0.00100	1	05/26/2022 04:38	WG1869701
Bromomethane	U		0.000605	0.00500	1	05/26/2022 04:38	WG1869701
n-Butylbenzene	U		0.000157	0.00100	1	05/26/2022 04:38	WG1869701
sec-Butylbenzene	U		0.000125	0.00100	1	05/26/2022 04:38	WG1869701
tert-Butylbenzene	U		0.000127	0.00100	1	05/26/2022 04:38	WG1869701
Carbon tetrachloride	U		0.000128	0.00100	1	05/26/2022 04:38	WG1869701
Chlorobenzene	U		0.000116	0.00100	1	05/26/2022 04:38	WG1869701
Chlorodibromomethane	U		0.000140	0.00100	1	05/26/2022 04:38	WG1869701
Chloroethane	U		0.000192	0.00500	1	05/26/2022 04:38	WG1869701
Chloroform	0.000119	J	0.000111	0.00500	1	05/26/2022 04:38	WG1869701
Chloromethane	U		0.000960	0.00250	1	05/26/2022 04:38	WG1869701
2-Chlorotoluene	U		0.000106	0.00100	1	05/26/2022 04:38	WG1869701
4-Chlorotoluene	U		0.000114	0.00100	1	05/26/2022 04:38	WG1869701
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	05/26/2022 04:38	WG1869701
1,2-Dibromoethane	U		0.000126	0.00100	1	05/26/2022 04:38	WG1869701
Dibromomethane	U		0.000122	0.00100	1	05/26/2022 04:38	WG1869701
1,2-Dichlorobenzene	U		0.000107	0.00100	1	05/26/2022 04:38	WG1869701
1,3-Dichlorobenzene	U		0.000110	0.00100	1	05/26/2022 04:38	WG1869701
1,4-Dichlorobenzene	U		0.000120	0.00100	1	05/26/2022 04:38	WG1869701
Dichlorodifluoromethane	U		0.000374	0.00500	1	05/26/2022 04:38	WG1869701
1,1-Dichloroethane	U		0.000100	0.00100	1	05/26/2022 04:38	WG1869701
1,2-Dichloroethane	U		0.0000819	0.00100	1	05/26/2022 04:38	WG1869701
1,1-Dichloroethene	U		0.000188	0.00100	1	05/26/2022 04:38	WG1869701
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	05/26/2022 04:38	WG1869701
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	05/26/2022 04:38	WG1869701
1,2-Dichloropropane	U		0.000149	0.00100	1	05/26/2022 04:38	WG1869701
1,1-Dichloropropene	U		0.000142	0.00100	1	05/26/2022 04:38	WG1869701
1,3-Dichloropropane	U		0.000110	0.00100	1	05/26/2022 04:38	WG1869701
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	05/26/2022 04:38	WG1869701
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	05/26/2022 04:38	WG1869701
2,2-Dichloropropane	U		0.000161	0.00100	1	05/26/2022 04:38	WG1869701
Di-isopropyl ether	U		0.000105	0.00100	1	05/26/2022 04:38	WG1869701
Ethylbenzene	U		0.000137	0.00100	1	05/26/2022 04:38	WG1869701
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	05/26/2022 04:38	WG1869701
Isopropylbenzene	U		0.000105	0.00100	1	05/26/2022 04:38	WG1869701
p-Isopropyltoluene	U		0.000120	0.00100	1	05/26/2022 04:38	WG1869701
2-Butanone (MEK)	U		0.00119	0.0100	1	05/26/2022 04:38	WG1869701
Methylene Chloride	U		0.000430	0.00500	1	05/26/2022 04:38	WG1869701
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	05/26/2022 04:38	WG1869701
Methyl tert-butyl ether	U		0.000101	0.00100	1	05/26/2022 04:38	WG1869701
Naphthalene	U	J3	0.00100	0.00500	1	05/26/2022 04:38	WG1869701
n-Propylbenzene	U		0.0000993	0.00100	1	05/26/2022 04:38	WG1869701
Styrene	U		0.000118	0.00100	1	05/26/2022 04:38	WG1869701
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	05/26/2022 04:38	WG1869701
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	05/26/2022 04:38	WG1869701
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	05/26/2022 04:38	WG1869701
Tetrachloroethene	U		0.000300	0.00100	1	05/26/2022 04:38	WG1869701
Toluene	U		0.000278	0.00100	1	05/26/2022 04:38	WG1869701
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	05/26/2022 04:38	WG1869701
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	05/26/2022 04:38	WG1869701

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	05/26/2022 04:38	WG1869701
1,1,2-Trichloroethane	U		0.000158	0.00100	1	05/26/2022 04:38	WG1869701
Trichloroethene	U		0.000190	0.00100	1	05/26/2022 04:38	WG1869701
Trichlorofluoromethane	U		0.000160	0.00500	1	05/26/2022 04:38	WG1869701
1,2,3-Trichloropropane	U		0.000237	0.00250	1	05/26/2022 04:38	WG1869701
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/26/2022 04:38	WG1869701
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 04:38	WG1869701
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/26/2022 04:38	WG1869701
Vinyl chloride	U		0.000234	0.00100	1	05/26/2022 04:38	WG1869701
Xylenes, Total	U		0.000174	0.00300	1	05/26/2022 04:38	WG1869701
(S) Toluene-d8	*108*			*80.0-120*		*05/26/2022 04:38*	WG1869701
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/26/2022 04:38*	WG1869701
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*05/26/2022 04:38*	WG1869701

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/24/2022 19:34	WG1867709
Acenaphthene	U		0.0000190	0.0000500	1	05/24/2022 19:34	WG1867709
Acenaphthylene	U		0.0000171	0.0000500	1	05/24/2022 19:34	WG1867709
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/24/2022 19:34	WG1867709
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/24/2022 19:34	WG1867709
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/24/2022 19:34	WG1867709
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/24/2022 19:34	WG1867709
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/24/2022 19:34	WG1867709
Chrysene	U		0.0000179	0.0000500	1	05/24/2022 19:34	WG1867709
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/24/2022 19:34	WG1867709
Fluoranthene	U		0.0000270	0.000100	1	05/24/2022 19:34	WG1867709
Fluorene	U		0.0000169	0.0000500	1	05/24/2022 19:34	WG1867709
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/24/2022 19:34	WG1867709
Naphthalene	U		0.0000917	0.000250	1	05/24/2022 19:34	WG1867709
Phenanthrene	U		0.0000180	0.0000500	1	05/24/2022 19:34	WG1867709
Pyrene	U		0.0000169	0.0000500	1	05/24/2022 19:34	WG1867709
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/24/2022 19:34	WG1867709
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/24/2022 19:34	WG1867709
2-Chloronaphthalene	U		0.0000682	0.000250	1	05/24/2022 19:34	WG1867709
(S) Nitrobenzene-d5	*117*			*31.0-160*		*05/24/2022 19:34*	WG1867709
(S) 2-Fluorobiphenyl	*108*			*48.0-148*		*05/24/2022 19:34*	WG1867709
(S) p-Terphenyl-d14	*123*			*37.0-146*		*05/24/2022 19:34*	WG1867709

Method Blank (MB)

(MB) R3796306-3 05/26/22 03:12

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0113	0.0500
Acrolein	U		0.00254	0.0500
Acrylonitrile	U		0.000671	0.0100
Benzene	U		0.0000941	0.00100
Bromobenzene	U		0.000118	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
2-Chlorotoluene	U		0.000106	0.00100
4-Chlorotoluene	U		0.000114	0.00100
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500
1,2-Dibromoethane	U		0.000126	0.00100
Dibromomethane	U		0.000122	0.00100
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
cis-1,2-Dichloroethene	U		0.000126	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
1,1-Dichloropropene	U		0.000142	0.00100
1,3-Dichloropropane	U		0.000110	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
2,2-Dichloropropane	U		0.000161	0.00100
Di-isopropyl ether	U		0.000105	0.00100
Ethylbenzene	U		0.000137	0.00100
Hexachloro-1,3-butadiene	U		0.000337	0.00100

Method Blank (MB)

(MB) R3796306-3 05/26/22 03:12

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000105	0.00100
p-Isopropyltoluene	U		0.000120	0.00100
2-Butanone (MEK)	U		0.00119	0.0100
Methylene Chloride	U		0.000430	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.0000993	0.00100
Styrene	U		0.000118	0.00100
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000481	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
1,2,3-Trichloropropane	U		0.000237	0.00250
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,2,3-Trimethylbenzene	U		0.000104	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Vinyl chloride	U		0.000234	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3796306-1 05/26/22 02:07 • (LCSD) R3796306-2 05/26/22 02:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.0250	0.0166	0.0175	66.4	70.0	19.0-160			5.28	27
Acrolein	0.0250	0.0243	0.0237	97.2	94.8	10.0-160			2.50	26
Acrylonitrile	0.0250	0.0211	0.0205	84.4	82.0	55.0-149			2.88	20
Benzene	0.00500	0.00486	0.00506	97.2	101	70.0-123			4.03	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3796306-1 05/26/22 02:07 • (LCSD) R3796306-2 05/26/22 02:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromobenzene	0.00500	0.00489	0.00520	97.8	104	73.0-121			6.14	20
Bromodichloromethane	0.00500	0.00465	0.00457	93.0	91.4	75.0-120			1.74	20
Bromoform	0.00500	0.00360	0.00379	72.0	75.8	68.0-132			5.14	20
Bromomethane	0.00500	0.00640	0.00639	128	128	10.0-160			0.156	25
n-Butylbenzene	0.00500	0.00488	0.00544	97.6	109	73.0-125			10.9	20
sec-Butylbenzene	0.00500	0.00510	0.00563	102	113	75.0-125			9.88	20
tert-Butylbenzene	0.00500	0.00511	0.00530	102	106	76.0-124			3.65	20
Carbon tetrachloride	0.00500	0.00478	0.00493	95.6	98.6	68.0-126			3.09	20
Chlorobenzene	0.00500	0.00498	0.00506	99.6	101	80.0-121			1.59	20
Chlorodibromomethane	0.00500	0.00427	0.00423	85.4	84.6	77.0-125			0.941	20
Chloroethane	0.00500	0.00508	0.00540	102	108	47.0-150			6.11	20
Chloroform	0.00500	0.00506	0.00504	101	101	73.0-120			0.396	20
Chloromethane	0.00500	0.00387	0.00417	77.4	83.4	41.0-142			7.46	20
2-Chlorotoluene	0.00500	0.00522	0.00550	104	110	76.0-123			5.22	20
4-Chlorotoluene	0.00500	0.00483	0.00514	96.6	103	75.0-122			6.22	20
1,2-Dibromo-3-Chloropropane	0.00500	0.00315	0.00314	63.0	62.8	58.0-134			0.318	20
1,2-Dibromoethane	0.00500	0.00454	0.00487	90.8	97.4	80.0-122			7.01	20
Dibromomethane	0.00500	0.00470	0.00484	94.0	96.8	80.0-120			2.94	20
1,2-Dichlorobenzene	0.00500	0.00520	0.00530	104	106	79.0-121			1.90	20
1,3-Dichlorobenzene	0.00500	0.00523	0.00534	105	107	79.0-120			2.08	20
1,4-Dichlorobenzene	0.00500	0.00501	0.00513	100	103	79.0-120			2.37	20
Dichlorodifluoromethane	0.00500	0.00413	0.00476	82.6	95.2	51.0-149			14.2	20
1,1-Dichloroethane	0.00500	0.00460	0.00488	92.0	97.6	70.0-126			5.91	20
1,2-Dichloroethane	0.00500	0.00474	0.00474	94.8	94.8	70.0-128			0.000	20
1,1-Dichloroethene	0.00500	0.00438	0.00474	87.6	94.8	71.0-124			7.89	20
cis-1,2-Dichloroethene	0.00500	0.00435	0.00450	87.0	90.0	73.0-120			3.39	20
trans-1,2-Dichloroethene	0.00500	0.00441	0.00458	88.2	91.6	73.0-120			3.78	20
1,2-Dichloropropane	0.00500	0.00452	0.00457	90.4	91.4	77.0-125			1.10	20
1,1-Dichloropropene	0.00500	0.00524	0.00539	105	108	74.0-126			2.82	20
1,3-Dichloropropane	0.00500	0.00477	0.00477	95.4	95.4	80.0-120			0.000	20
cis-1,3-Dichloropropene	0.00500	0.00435	0.00458	87.0	91.6	80.0-123			5.15	20
trans-1,3-Dichloropropene	0.00500	0.00421	0.00420	84.2	84.0	78.0-124			0.238	20
2,2-Dichloropropane	0.00500	0.00409	0.00413	81.8	82.6	58.0-130			0.973	20
Di-isopropyl ether	0.00500	0.00416	0.00419	83.2	83.8	58.0-138			0.719	20
Ethylbenzene	0.00500	0.00508	0.00540	102	108	79.0-123			6.11	20
Hexachloro-1,3-butadiene	0.00500	0.00558	0.00534	112	107	54.0-138			4.40	20
Isopropylbenzene	0.00500	0.00496	0.00537	99.2	107	76.0-127			7.94	20
p-Isopropyltoluene	0.00500	0.00491	0.00538	98.2	108	76.0-125			9.14	20
2-Butanone (MEK)	0.0250	0.0177	0.0213	70.8	85.2	44.0-160			18.5	20
Methylene Chloride	0.00500	0.00446	0.00465	89.2	93.0	67.0-120			4.17	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3796306-1 05/26/22 02:07 • (LCSD) R3796306-2 05/26/22 02:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	0.0250	0.0234	0.0229	93.6	91.6	68.0-142			2.16	20
Methyl tert-butyl ether	0.00500	0.00454	0.00446	90.8	89.2	68.0-125			1.78	20
Naphthalene	0.00500	0.00358	0.00440	71.6	88.0	54.0-135		J3	20.6	20
n-Propylbenzene	0.00500	0.00522	0.00551	104	110	77.0-124			5.41	20
Styrene	0.00500	0.00458	0.00470	91.6	94.0	73.0-130			2.59	20
1,1,1,2-Tetrachloroethane	0.00500	0.00437	0.00453	87.4	90.6	75.0-125			3.60	20
1,1,2,2-Tetrachloroethane	0.00500	0.00446	0.00423	89.2	84.6	65.0-130			5.29	20
1,1,2-Trichlorotrifluoroethane	0.00500	0.00484	0.00527	96.8	105	69.0-132			8.51	20
Tetrachloroethene	0.00500	0.00532	0.00563	106	113	72.0-132			5.66	20
Toluene	0.00500	0.00513	0.00525	103	105	79.0-120			2.31	20
1,2,3-Trichlorobenzene	0.00500	0.00454	0.00502	90.8	100	50.0-138			10.0	20
1,2,4-Trichlorobenzene	0.00500	0.00443	0.00475	88.6	95.0	57.0-137			6.97	20
1,1,1-Trichloroethane	0.00500	0.00453	0.00521	90.6	104	73.0-124			14.0	20
1,1,2-Trichloroethane	0.00500	0.00459	0.00453	91.8	90.6	80.0-120			1.32	20
Trichloroethene	0.00500	0.00525	0.00550	105	110	78.0-124			4.65	20
Trichlorofluoromethane	0.00500	0.00472	0.00536	94.4	107	59.0-147			12.7	20
1,2,3-Trichloropropane	0.00500	0.00467	0.00467	93.4	93.4	73.0-130			0.000	20
1,2,4-Trimethylbenzene	0.00500	0.00501	0.00518	100	104	76.0-121			3.34	20
1,2,3-Trimethylbenzene	0.00500	0.00486	0.00515	97.2	103	77.0-120			5.79	20
1,3,5-Trimethylbenzene	0.00500	0.00492	0.00549	98.4	110	76.0-122			11.0	20
Vinyl chloride	0.00500	0.00456	0.00489	91.2	97.8	67.0-131			6.98	20
Xylenes, Total	0.0150	0.0155	0.0159	103	106	79.0-123			2.55	20
(S) Toluene-d8				*106*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*103*	*104*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*102*	*103*	*70.0-130*				

L1495762-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-03 05/26/22 05:00 • (MS) R3796306-4 05/26/22 10:44 • (MSD) R3796306-5 05/26/22 11:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.0250	U	0.0209	0.0160	83.6	64.0	1	10.0-160			26.6	35
Acrolein	0.0250	U	0.0217	0.0242	86.8	96.8	1	10.0-160			10.9	39
Acrylonitrile	0.0250	U	0.0193	0.0193	77.2	77.2	1	21.0-160			0.000	32
Benzene	0.00500	U	0.00406	0.00486	81.2	97.2	1	17.0-158			17.9	27
Bromobenzene	0.00500	U	0.00440	0.00479	88.0	95.8	1	30.0-149			8.49	28
Bromodichloromethane	0.00500	U	0.00414	0.00449	82.8	89.8	1	31.0-150			8.11	27
Bromoform	0.00500	U	0.00363	0.00377	72.6	75.4	1	29.0-150			3.78	29
Bromomethane	0.00500	U	0.00637	0.00629	127	126	1	10.0-160			1.26	38

L1495762-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-03 05/26/22 05:00 • (MS) R3796306-4 05/26/22 10:44 • (MSD) R3796306-5 05/26/22 11:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
n-Butylbenzene	0.00500	U	0.00361	0.00386	72.2	77.2	1	31.0-150			6.69	30
sec-Butylbenzene	0.00500	U	0.00445	0.00476	89.0	95.2	1	33.0-155			6.73	29
tert-Butylbenzene	0.00500	U	0.00459	0.00488	91.8	97.6	1	34.0-153			6.12	28
Carbon tetrachloride	0.00500	U	0.00414	0.00486	82.8	97.2	1	23.0-159			16.0	28
Chlorobenzene	0.00500	U	0.00415	0.00469	83.0	93.8	1	33.0-152			12.2	27
Chlorodibromomethane	0.00500	U	0.00417	0.00429	83.4	85.8	1	37.0-149			2.84	27
Chloroethane	0.00500	U	0.00398	0.00456	79.6	91.2	1	10.0-160			13.6	30
Chloroform	0.00500	U	0.00450	0.00514	90.0	103	1	29.0-154			13.3	28
Chloromethane	0.00500	U	0.00278	0.00348	55.6	69.6	1	10.0-160			22.4	29
2-Chlorotoluene	0.00500	U	0.00435	0.00484	87.0	96.8	1	32.0-153			10.7	28
4-Chlorotoluene	0.00500	U	0.00408	0.00426	81.6	85.2	1	32.0-150			4.32	28
1,2-Dibromo-3-Chloropropane	0.00500	U	0.00311	0.00318	62.2	63.6	1	22.0-151			2.23	34
1,2-Dibromoethane	0.00500	U	0.00435	0.00441	87.0	88.2	1	34.0-147			1.37	27
Dibromomethane	0.00500	U	0.00425	0.00439	85.0	87.8	1	30.0-151			3.24	27
1,2-Dichlorobenzene	0.00500	U	0.00418	0.00480	83.6	96.0	1	34.0-149			13.8	28
1,3-Dichlorobenzene	0.00500	U	0.00426	0.00456	85.2	91.2	1	36.0-146			6.80	27
1,4-Dichlorobenzene	0.00500	U	0.00385	0.00442	77.0	88.4	1	35.0-142			13.8	27
Dichlorodifluoromethane	0.00500	U	0.00346	0.00393	69.2	78.6	1	10.0-160			12.7	29
1,1-Dichloroethane	0.00500	U	0.00388	0.00456	77.6	91.2	1	25.0-158			16.1	27
1,2-Dichloroethane	0.00500	U	0.00417	0.00443	83.4	88.6	1	29.0-151			6.05	27
1,1-Dichloroethene	0.00500	U	0.00350	0.00423	70.0	84.6	1	11.0-160			18.9	29
cis-1,2-Dichloroethene	0.00500	U	0.00379	0.00432	75.8	86.4	1	10.0-160			13.1	27
trans-1,2-Dichloroethene	0.00500	U	0.00322	0.00417	64.4	83.4	1	17.0-153			25.7	27
1,2-Dichloropropane	0.00500	U	0.00403	0.00447	80.6	89.4	1	30.0-156			10.4	27
1,1-Dichloropropene	0.00500	U	0.00388	0.00457	77.6	91.4	1	25.0-158			16.3	27
1,3-Dichloropropane	0.00500	U	0.00445	0.00478	89.0	95.6	1	38.0-147			7.15	27
cis-1,3-Dichloropropene	0.00500	U	0.00369	0.00393	73.8	78.6	1	34.0-149			6.30	28
trans-1,3-Dichloropropene	0.00500	U	0.00382	0.00394	76.4	78.8	1	32.0-149			3.09	28
2,2-Dichloropropane	0.00500	U	0.00335	0.00396	67.0	79.2	1	24.0-152			16.7	29
Di-isopropyl ether	0.00500	U	0.00373	0.00422	74.6	84.4	1	21.0-160			12.3	28
Ethylbenzene	0.00500	U	0.00420	0.00487	84.0	97.4	1	30.0-155			14.8	27
Hexachloro-1,3-butadiene	0.00500	U	0.00415	0.00440	83.0	88.0	1	20.0-154			5.85	34
Isopropylbenzene	0.00500	U	0.00445	0.00486	89.0	97.2	1	28.0-157			8.81	27
p-Isopropyltoluene	0.00500	U	0.00411	0.00428	82.2	85.6	1	30.0-154			4.05	29
2-Butanone (MEK)	0.0250	U	0.0202	0.0191	80.8	76.4	1	10.0-160			5.60	32
Methylene Chloride	0.00500	U	0.00359	0.00451	71.8	90.2	1	23.0-144			22.7	28
4-Methyl-2-pentanone (MIBK)	0.0250	U	0.0231	0.0223	92.4	89.2	1	29.0-160			3.52	29
Methyl tert-butyl ether	0.00500	U	0.00436	0.00467	87.2	93.4	1	28.0-150			6.87	29
Naphthalene	0.00500	U	0.00351	0.00378	70.2	75.6	1	12.0-156			7.41	35
n-Propylbenzene	0.00500	U	0.00418	0.00449	83.6	89.8	1	31.0-154			7.15	28

L1495762-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-03 05/26/22 05:00 • (MS) R3796306-4 05/26/22 10:44 • (MSD) R3796306-5 05/26/22 11:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Styrene	0.00500	U	0.00388	0.00423	77.6	84.6	1	33.0-155			8.63	28
1,1,1,2-Tetrachloroethane	0.00500	U	0.00417	0.00454	83.4	90.8	1	36.0-151			8.50	29
1,1,2,2-Tetrachloroethane	0.00500	U	0.00453	0.00464	90.6	92.8	1	33.0-150			2.40	28
1,1,2-Trichlorotrifluoroethane	0.00500	U	0.00392	0.00443	78.4	88.6	1	23.0-160			12.2	30
Tetrachloroethene	0.00500	0.000838	0.00457	0.00547	74.6	92.6	1	10.0-160			17.9	27
Toluene	0.00500	U	0.00434	0.00493	86.8	98.6	1	26.0-154			12.7	28
1,2,3-Trichlorobenzene	0.00500	U	0.00366	0.00413	73.2	82.6	1	17.0-150			12.1	36
1,2,4-Trichlorobenzene	0.00500	U	0.00348	0.00384	69.6	76.8	1	24.0-150			9.84	33
1,1,1-Trichloroethane	0.00500	U	0.00421	0.00476	84.2	95.2	1	23.0-160			12.3	28
1,1,2-Trichloroethane	0.00500	U	0.00455	0.00449	91.0	89.8	1	35.0-147			1.33	27
Trichloroethene	0.00500	0.000685	0.00449	0.00512	76.1	88.7	1	10.0-160			13.1	25
Trichlorofluoromethane	0.00500	U	0.00409	0.00494	81.8	98.8	1	17.0-160			18.8	31
1,2,3-Trichloropropane	0.00500	U	0.00464	0.00455	92.8	91.0	1	34.0-151			1.96	29
1,2,4-Trimethylbenzene	0.00500	U	0.00392	0.00433	78.4	86.6	1	26.0-154			9.94	27
1,2,3-Trimethylbenzene	0.00500	U	0.00405	0.00430	81.0	86.0	1	32.0-149			5.99	28
1,3,5-Trimethylbenzene	0.00500	U	0.00439	0.00456	87.8	91.2	1	28.0-153			3.80	27
Vinyl chloride	0.00500	U	0.00347	0.00409	69.4	81.8	1	10.0-160			16.4	27
Xylenes, Total	0.0150	U	0.0128	0.0138	85.3	92.0	1	29.0-154			7.52	28
(S) Toluene-d8					*107*	*107*		*80.0-120*				
(S) 4-Bromofluorobenzene					*106*	*103*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*105*	*105*		*70.0-130*				

L1495762-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-04 05/26/22 05:21 • (MS) R3796306-6 05/26/22 11:27 • (MSD) R3796306-7 05/26/22 11:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.0250	U	0.0162	0.0152	64.8	60.8	1	10.0-160			6.37	35
Acrolein	0.0250	U	0.0232	0.0222	92.8	88.8	1	10.0-160			4.41	39
Acrylonitrile	0.0250	U	0.0191	0.0186	76.4	74.4	1	21.0-160			2.65	32
Benzene	0.00500	U	0.00360	0.00478	72.0	95.6	1	17.0-158		J3	28.2	27
Bromobenzene	0.00500	U	0.00409	0.00469	81.8	93.8	1	30.0-149			13.7	28
Bromodichloromethane	0.00500	U	0.00378	0.00438	75.6	87.6	1	31.0-150			14.7	27
Bromoform	0.00500	U	0.00331	0.00340	66.2	68.0	1	29.0-150			2.68	29
Bromomethane	0.00500	U	0.00547	0.00571	109	114	1	10.0-160			4.29	38
n-Butylbenzene	0.00500	U	0.00351	0.00453	70.2	90.6	1	31.0-150			25.4	30
sec-Butylbenzene	0.00500	U	0.00428	0.00520	85.6	104	1	33.0-155			19.4	29
tert-Butylbenzene	0.00500	U	0.00417	0.00509	83.4	102	1	34.0-153			19.9	28
Carbon tetrachloride	0.00500	U	0.00320	0.00470	64.0	94.0	1	23.0-159		J3	38.0	28

L1495762-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-04 05/26/22 05:21 • (MS) R3796306-6 05/26/22 11:27 • (MSD) R3796306-7 05/26/22 11:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chlorobenzene	0.00500	U	0.00378	0.00483	75.6	96.6	1	33.0-152			24.4	27
Chlorodibromomethane	0.00500	U	0.00349	0.00387	69.8	77.4	1	37.0-149			10.3	27
Chloroethane	0.00500	0.000267	0.00372	0.00401	69.1	74.9	1	10.0-160			7.50	30
Chloroform	0.00500	U	0.00387	0.00495	77.4	99.0	1	29.0-154			24.5	28
Chloromethane	0.00500	U	0.00263	0.00357	52.6	71.4	1	10.0-160		J3	30.3	29
2-Chlorotoluene	0.00500	U	0.00410	0.00515	82.0	103	1	32.0-153			22.7	28
4-Chlorotoluene	0.00500	U	0.00363	0.00463	72.6	92.6	1	32.0-150			24.2	28
1,2-Dibromo-3-Chloropropane	0.00500	U	0.00280	0.00278	56.0	55.6	1	22.0-151			0.717	34
1,2-Dibromoethane	0.00500	U	0.00373	0.00441	74.6	88.2	1	34.0-147			16.7	27
Dibromomethane	0.00500	U	0.00400	0.00437	80.0	87.4	1	30.0-151			8.84	27
1,2-Dichlorobenzene	0.00500	U	0.00409	0.00486	81.8	97.2	1	34.0-149			17.2	28
1,3-Dichlorobenzene	0.00500	U	0.00389	0.00490	77.8	98.0	1	36.0-146			23.0	27
1,4-Dichlorobenzene	0.00500	U	0.00379	0.00451	75.8	90.2	1	35.0-142			17.3	27
Dichlorodifluoromethane	0.00500	U	0.00278	0.00402	55.6	80.4	1	10.0-160		J3	36.5	29
1,1-Dichloroethane	0.00500	U	0.00346	0.00469	69.2	93.8	1	25.0-158		J3	30.2	27
1,2-Dichloroethane	0.00500	U	0.00382	0.00448	76.4	89.6	1	29.0-151			15.9	27
1,1-Dichloroethene	0.00500	U	0.00314	0.00430	62.8	86.0	1	11.0-160		J3	31.2	29
cis-1,2-Dichloroethene	0.00500	U	0.00348	0.00428	69.6	85.6	1	10.0-160			20.6	27
trans-1,2-Dichloroethene	0.00500	U	0.00310	0.00410	62.0	82.0	1	17.0-153		J3	27.8	27
1,2-Dichloropropane	0.00500	U	0.00349	0.00428	69.8	85.6	1	30.0-156			20.3	27
1,1-Dichloropropene	0.00500	U	0.00334	0.00469	66.8	93.8	1	25.0-158		J3	33.6	27
1,3-Dichloropropane	0.00500	U	0.00422	0.00460	84.4	92.0	1	38.0-147			8.62	27
cis-1,3-Dichloropropene	0.00500	U	0.00331	0.00400	66.2	80.0	1	34.0-149			18.9	28
trans-1,3-Dichloropropene	0.00500	U	0.00326	0.00375	65.2	75.0	1	32.0-149			14.0	28
2,2-Dichloropropane	0.00500	U	0.00302	0.00415	60.4	83.0	1	24.0-152		J3	31.5	29
Di-isopropyl ether	0.00500	U	0.00345	0.00398	69.0	79.6	1	21.0-160			14.3	28
Ethylbenzene	0.00500	U	0.00375	0.00497	75.0	99.4	1	30.0-155		J3	28.0	27
Hexachloro-1,3-butadiene	0.00500	U	0.00415	0.00456	83.0	91.2	1	20.0-154			9.41	34
Isopropylbenzene	0.00500	U	0.00393	0.00501	78.6	100	1	28.0-157			24.2	27
p-Isopropyltoluene	0.00500	U	0.00368	0.00465	73.6	93.0	1	30.0-154			23.3	29
2-Butanone (MEK)	0.0250	U	0.0198	0.0186	79.2	74.4	1	10.0-160			6.25	32
Methylene Chloride	0.00500	U	0.00339	0.00417	67.8	83.4	1	23.0-144			20.6	28
4-Methyl-2-pentanone (MIBK)	0.0250	U	0.0225	0.0210	90.0	84.0	1	29.0-160			6.90	29
Methyl tert-butyl ether	0.00500	U	0.00413	0.00440	82.6	88.0	1	28.0-150			6.33	29
Naphthalene	0.00500	U	0.00377	0.00392	75.4	78.4	1	12.0-156			3.90	35
n-Propylbenzene	0.00500	U	0.00382	0.00496	76.4	99.2	1	31.0-154			26.0	28
Styrene	0.00500	U	0.00330	0.00417	66.0	83.4	1	33.0-155			23.3	28
1,1,1,2-Tetrachloroethane	0.00500	U	0.00380	0.00446	76.0	89.2	1	36.0-151			16.0	29
1,1,2,2-Tetrachloroethane	0.00500	U	0.00459	0.00438	91.8	87.6	1	33.0-150			4.68	28
1,1,2-Trichlorotrifluoroethane	0.00500	U	0.00346	0.00481	69.2	96.2	1	23.0-160		J3	32.6	30

L1495762-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495762-04 05/26/22 05:21 • (MS) R3796306-6 05/26/22 11:27 • (MSD) R3796306-7 05/26/22 11:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Tetrachloroethene	0.00500	U	0.00346	0.00491	69.2	98.2	1	10.0-160		J3	34.6	27
Toluene	0.00500	U	0.00380	0.00502	76.0	100	1	26.0-154			27.7	28
1,2,3-Trichlorobenzene	0.00500	U	0.00417	0.00425	83.4	85.0	1	17.0-150			1.90	36
1,2,4-Trichlorobenzene	0.00500	U	0.00353	0.00410	70.6	82.0	1	24.0-150			14.9	33
1,1,1-Trichloroethane	0.00500	U	0.00358	0.00493	71.6	98.6	1	23.0-160		J3	31.7	28
1,1,2-Trichloroethane	0.00500	U	0.00385	0.00424	77.0	84.8	1	35.0-147			9.64	27
Trichloroethene	0.00500	0.000280	0.00345	0.00481	63.4	90.6	1	10.0-160		J3	32.9	25
Trichlorofluoromethane	0.00500	U	0.00362	0.00522	72.4	104	1	17.0-160		J3	36.2	31
1,2,3-Trichloropropane	0.00500	U	0.00423	0.00453	84.6	90.6	1	34.0-151			6.85	29
1,2,4-Trimethylbenzene	0.00500	U	0.00372	0.00458	74.4	91.6	1	26.0-154			20.7	27
1,2,3-Trimethylbenzene	0.00500	U	0.00390	0.00461	78.0	92.2	1	32.0-149			16.7	28
1,3,5-Trimethylbenzene	0.00500	U	0.00383	0.00482	76.6	96.4	1	28.0-153			22.9	27
Vinyl chloride	0.00500	U	0.00301	0.00447	60.2	89.4	1	10.0-160		J3	39.0	27
Xylenes, Total	0.0150	U	0.0110	0.0145	73.3	96.7	1	29.0-154			27.5	28
(S) Toluene-d8					*106*	*106*		*80.0-120*				
(S) 4-Bromofluorobenzene					*104*	*104*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*105*	*104*		*70.0-130*				

Method Blank (MB)

(MB) R3795556-3 05/24/22 14:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
2-Chloronaphthalene	U		0.0000682	0.000250
(S) Nitrobenzene-d5	*88.5*			*31.0-160*
(S) 2-Fluorobiphenyl	*104*			*48.0-148*
(S) p-Terphenyl-d14	*112*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795556-1 05/24/22 13:49 • (LCSD) R3795556-2 05/24/22 14:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00202	0.00211	101	105	67.0-150			4.36	20
Acenaphthene	0.00200	0.00204	0.00211	102	105	65.0-138			3.37	20
Acenaphthylene	0.00200	0.00216	0.00223	108	111	66.0-140			3.19	20
Benzo(a)anthracene	0.00200	0.00150	0.00173	75.0	86.5	61.0-140			14.2	20
Benzo(a)pyrene	0.00200	0.00106	0.00122	53.0	61.0	60.0-143	J4		14.0	20
Benzo(b)fluoranthene	0.00200	0.00116	0.00136	58.0	68.0	58.0-141			15.9	20
Benzo(g,h,i)perylene	0.00200	0.000851	0.000997	42.5	49.8	52.0-153	J4	J4	15.8	20
Benzo(k)fluoranthene	0.00200	0.000995	0.00115	49.7	57.5	58.0-148	J4	J4	14.5	20
Chrysene	0.00200	0.00144	0.00167	72.0	83.5	64.0-144			14.8	20
Dibenz(a,h)anthracene	0.00200	0.000798	0.000933	39.9	46.6	52.0-155	J4	J4	15.6	20
Fluoranthene	0.00200	0.00191	0.00208	95.5	104	69.0-153			8.52	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3795556-1 05/24/22 13:49 • (LCSD) R3795556-2 05/24/22 14:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.00200	0.00210	0.00217	105	108	64.0-136			3.28	20
Indeno(1,2,3-cd)pyrene	0.00200	0.000844	0.000988	42.2	49.4	54.0-153	J4	J4	15.7	20
Naphthalene	0.00200	0.00210	0.00214	105	107	61.0-137			1.89	20
Phenanthrene	0.00200	0.00201	0.00212	100	106	62.0-137			5.33	20
Pyrene	0.00200	0.00192	0.00207	96.0	104	60.0-142			7.52	20
1-Methylnaphthalene	0.00200	0.00211	0.00221	105	111	66.0-142			4.63	20
2-Methylnaphthalene	0.00200	0.00203	0.00210	102	105	62.0-136			3.39	20
2-Chloronaphthalene	0.00200	0.00209	0.00214	104	107	64.0-140			2.36	20
(S) Nitrobenzene-d5				*93.0*	*82.0*	*31.0-160*				
(S) 2-Fluorobiphenyl				*101*	*103*	*48.0-148*				
(S) p-Terphenyl-d14				*80.5*	*90.0*	*37.0-146*				

Method Blank (MB)

(MB) R3796558-2 05/24/22 14:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
2-Chloronaphthalene	U		0.0000682	0.000250
(S) Nitrobenzene-d5	*113*			*31.0-160*
(S) 2-Fluorobiphenyl	*111*			*48.0-148*
(S) p-Terphenyl-d14	*126*			*37.0-146*

Laboratory Control Sample (LCS)

(LCS) R3796558-1 05/24/22 14:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.00200	0.00230	115	67.0-150	
Acenaphthene	0.00200	0.00233	117	65.0-138	
Acenaphthylene	0.00200	0.00234	117	66.0-140	
Benzo(a)anthracene	0.00200	0.00223	111	61.0-140	
Benzo(a)pyrene	0.00200	0.00211	105	60.0-143	
Benzo(b)fluoranthene	0.00200	0.00220	110	58.0-141	
Benzo(g,h,i)perylene	0.00200	0.00200	100	52.0-153	
Benzo(k)fluoranthene	0.00200	0.00216	108	58.0-148	
Chrysene	0.00200	0.00226	113	64.0-144	
Dibenz(a,h)anthracene	0.00200	0.00187	93.5	52.0-155	
Fluoranthene	0.00200	0.00232	116	69.0-153	

Laboratory Control Sample (LCS)

(LCS) R3796558-1 05/24/22 14:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.00200	0.00248	124	64.0-136	
Indeno(1,2,3-cd)pyrene	0.00200	0.00189	94.5	54.0-153	
Naphthalene	0.00200	0.00230	115	61.0-137	
Phenanthrene	0.00200	0.00232	116	62.0-137	
Pyrene	0.00200	0.00228	114	60.0-142	
1-Methylnaphthalene	0.00200	0.00236	118	66.0-142	
2-Methylnaphthalene	0.00200	0.00225	112	62.0-136	
2-Chloronaphthalene	0.00200	0.00237	118	64.0-140	
(S) Nitrobenzene-d5			*122*	*31.0-160*	
(S) 2-Fluorobiphenyl			*119*	*48.0-148*	
(S) p-Terphenyl-d14			*129*	*37.0-146*	

L1495957-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1495957-06 05/24/22 17:14 • (MS) R3796558-3 05/24/22 17:32 • (MSD) R3796558-4 05/24/22 17:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	U	0.00217	0.00199	108	99.5	1	56.0-156			8.65	20
Acenaphthene	0.00200	U	0.00229	0.00209	115	104	1	44.0-153			9.13	20
Acenaphthylene	0.00200	U	0.00226	0.00208	113	104	1	53.0-150			8.29	20
Benzo(a)anthracene	0.00200	U	0.00205	0.00190	103	95.0	1	47.0-151			7.59	20
Benzo(a)pyrene	0.00200	U	0.00191	0.00187	95.5	93.5	1	45.0-146			2.12	20
Benzo(b)fluoranthene	0.00200	U	0.00202	0.00201	101	100	1	43.0-142			0.496	20
Benzo(g,h,i)perylene	0.00200	U	0.00192	0.00197	96.0	98.5	1	40.0-147			2.57	20
Benzo(k)fluoranthene	0.00200	U	0.00196	0.00192	98.0	96.0	1	43.0-148			2.06	21
Chrysene	0.00200	U	0.00216	0.00202	108	101	1	50.0-148			6.70	20
Dibenz(a,h)anthracene	0.00200	U	0.00171	0.00178	85.5	89.0	1	37.0-151			4.01	20
Fluoranthene	0.00200	U	0.00221	0.00200	111	100	1	56.0-157			9.98	20
Fluorene	0.00200	U	0.00241	0.00219	120	109	1	48.0-148			9.57	20
Indeno(1,2,3-cd)pyrene	0.00200	U	0.00175	0.00179	87.5	89.5	1	41.0-148			2.26	20
Naphthalene	0.00200	U	0.00225	0.00206	112	103	1	10.0-160			8.82	20
Phenanthrene	0.00200	U	0.00224	0.00203	112	102	1	47.0-147			9.84	20
Pyrene	0.00200	U	0.00224	0.00207	112	104	1	51.0-148			7.89	20
1-Methylnaphthalene	0.00200	U	0.00230	0.00212	115	106	1	21.0-160			8.14	20
2-Methylnaphthalene	0.00200	U	0.00222	0.00203	111	102	1	31.0-160			8.94	20
2-Chloronaphthalene	0.00200	U	0.00229	0.00212	115	106	1	52.0-148			7.71	20
(S) Nitrobenzene-d5					*117*	*108*		*31.0-160*				
(S) 2-Fluorobiphenyl					*114*	*106*		*48.0-148*				
(S) p-Terphenyl-d14					*122*	*116*		*37.0-146*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Trinity Consultants
16252 West Woods Business Park Drive
Ellisville, MO 63021

Billing Information:

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1496464
C250

Report to: Doug Abeln

Email To: dabeln@trinityconsultants.com

Project Description: OSHARAI - VRP

City/State Collected: East Chicago INDIANA

Please Circle: PT MT (CT) ET

Phone: D (314) 692 5597

Client Project # 20X01.1094

Lab Project #

Collected by (print): D. Abeln

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Acctnum: SCHYON
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 = 2-40ml HCL	PAH8270 SIMS = 2-40ml WT	Remarks	Sample # (lab only)
PH 04 GW	G	GW		5/17/22	5:40 pm	4	X	X		-01
PH 06 GW					5:50 pm		X	X		-02
PH 12 GW					6:00 pm		X	X		-03
PH 15 GW					6:10 pm		X	X		-04
FB 01		OT			10:45 am		X	X		-05
RB 01		OT			11:20 am		X	X		-06

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 5755 8088 6993

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: X __N
Bottles arrive intact: X __N
Correct bottles used: X __N
Sufficient volume sent: X __N
If Applicable
VOA Zero Headspace: / __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr:
__Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCL / MeoH TBR	
	5/18/22	10:30		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.1 °C 1.9+0=1.9 Bottles Received: 24	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-19-22 Time: 930	Hold: / Condition: NCF / (OK)

APPENDIX F. PHASE II GRONDWATER INVESTIGATION REPORT

PHASE II GROUNDWATER INVESTIGATION REPORT

Former Oil Storage Tank Area
Marport LLC (Formerly Osharai Indiana) Site
4323 Kennedy Ave., East Chicago, IN 46312
Site # 6211101

Prepared For:
Indiana Department of Environmental Management
Voluntary Remediation Program
Indianapolis, Indiana

Prepared By:
Douglas L. Abeln R.G. – Managing Consultant

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Trinity Consultants

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Registered Geologist Certification Statement

I certify that I have examined the Phase II Groundwater Investigation Report for the Former Oil Storage Tank Area at the Marport LLC site (Formerly the Osharai Indiana Site) located at 4323 Kennedy Avenue, East Chicago, Illinois.

The certification is required pursuant to Part II of the Voluntary Remediation Agreement relating to Osharai Indiana Site #621101. Based on the information obtained, I certify that the site investigation activities were performed in accordance with the approved Phase II Groundwater Investigation Work Plan dated October 2022.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date: November 13, 2023

Signature: 

Name (printed): Douglas L. Abeln, R.G.

Title: Engineering Manager

Registered Geologist No: RG0040

Company: Trinity Consultants

1. INTRODUCTION

Tradebe Environmental Services, LLC (Tradebe) on behalf of Marport LLC (Formerly Osharai Indiana), entered into the Indiana Department of Environmental Management's (IDEMs), Voluntary Remediation Program (VRP) upon receiving an executed Voluntary Remediation Agreement (VRA), entered into by and between IDEM and Osharai Indiana dated January 12, 2022 and assigned Site # 6211101.

An Investigation Workplan, prepared by Trinity Consultants (Trinity), was developed and implemented in May 2022, as a means to collect current soil and groundwater data from a prior Oil Storage Tank Area at the Osharai Indiana site, formerly the Marport Smelting Facility, located at 4323 Kennedy Avenue in East Chicago, Indiana. Prior Investigations of the site in 2005 and 2010, had indicated the presence of petroleum constituents above IDEM Risk Integrated System of Closure (RISC) levels for total petroleum hydrocarbons.

The results of the May 2022 investigation were submitted to the VRP as a Site Investigation Report dated August 2, 2022. IDEM reviewed this report and provided a technical letter, dated September 1, 2022, containing a brief background summary including comments generated during their review of the above mentioned report. In summary, IDEM indicated that no remedy appears necessary for the soil direct contact exposure scenario in the former oil storage tank area, however, there is insufficient groundwater data to evaluate the source(s) of groundwater exceedances noted at several temporary well locations near the former oil storage tank area. IDEM recommended that additional groundwater investigation be conducted in other areas of the site and permanent groundwater wells should be installed and a quarterly monitoring program be introduced.

A Phase II Groundwater Investigation Work Plan was developed as a means to collect additional groundwater data to assess the source(s) of elevated levels of Polycyclic Aromatic Hydrocarbons (PAHs), previously identified above existing Groundwater Published Levels (GWPLs). The work plan was approved by IDEM on November 16, 2022.

The following sections detail the investigation activities performed January through October 2023, and present the analytical results obtained as a result of implementation of the approved work plan and recommendations for next steps. Quarterly Summary Reports were submitted to IDEM which provided information pertaining to each quarterly groundwater sampling event.

1.1 Objectives of the Phase II Groundwater Investigation Work Plan

The objectives of the Phase II Groundwater Investigation Work Plan were as follows:

- Conduct a follow up shallow groundwater investigation to assess current site conditions with respect to previously identified groundwater contamination near the former above ground Fuel Oil Tank Secondary Containment Area;
- Characterize the extent and magnitude of any actual or potential groundwater contamination; and,
- Collect data of sufficient quality that it will be possible to compare detected constituent concentrations to IDEMs July 8, 2022 Risk-based Closure Guide (R2) Screening Levels.

1.2 Purpose of the Phase II Groundwater Investigation Report

The purpose of this document is to describe the investigation activities conducted as part of the approved Phase II Groundwater Investigation Work Plan and to present the analytical results obtained compared to IDEM RCG Screening Levels.

2. SITE BACKGROUND

2.1 Site Location and History

2.1.1 Facility Name & Address

- Marport LLC (Formerly Osharai Indiana)
  4323 Kennedy Avenue
  East Chicago, Indiana 46312

2.1.2 Facility Description

The Site is located at 4323 Kennedy Avenue, in the 3rd District of the city of east Chicago, in Lake County Indiana. The property is on the east side Kennedy Avenue between Chicago Avenue and Columbus Avenue.

The Site can also be described as encompassing nearly 8 acres located in the Southwest Quarter of the Northeast Quarter of Section 28, Township 37 North, Range 9 West, Lake County, Indiana. The location of the Site is shown on Figure 1 that overlays an excerpt from the United States Geologic Survey (USGS) Topographic Map, Whiting Quadrangle, 1988.

The Indiana Harbor Canal is approximately one-half mile west of the Site. The Canal connects the Grand Calumet River, approximately one and one-quarter miles to the south and the Indiana Harbor of Lake Michigan, located about two and one-half miles to the northeast of the Site. The immediate area of the site is light to heavy industrial and manufacturing, industrial waste management, and transportation (rail) use. The surficial geology in this area is man-made, being composed of fill materials that often include sand, slag, refuse, cinders, brick fragments, and other industrial byproducts.

Currently, no manufacturing, storage, or commercial operations are being conducted on the property, with the exception of a 10-Day transfer facility operated by Tradebe. The transfer facility operation only includes the parking of trucks in commerce. The former manufacturing building was recently raised and only the building foundations and slab concrete floors remain on the premises. Prior to the recent demolition of the building, all equipment and raw materials were removed. Demolition debris and waste generated during the demolition of the Osharai Indiana site was transported and disposed of at various disposal facilities including Republic Landfill, US Ecology and Tradebe.

2.1.3 Site Map

A site location map is presented as Figure 1. A surrounding area map is presented as Figure 2 while a Monitoring Well Location Map is presented as Figure 3.

2.1.4 Site History Summary

Most of the former plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. City directories indicated that Harbison Walker Refractories continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on information obtained from a previous Phase I ESA Report, the US Reduction Company purchased the Site in the 1970s and operated it for aluminum smelting. Marport Smelting Co. began secondary aluminum smelting operations at the Site in 1985. Another company, Portage Alloys, Inc. appears at the Marport smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the Site has

not been in use since. Recently, the existing buildings on the Site were demolished and currently only the building footings and concrete slab floors and pads remain.

2.1.5 Contamination Discovery Overview

A Phase I ESA was performed on the Site in May of 2005 by Andrews Engineering, which identified several areas of concern or recognized environmental conditions (RECs) associated with the subject property. Subsequently, Andrews Engineering performed a Phase II ESA to assess whether the RECs identified in the Phase I ESA had negatively impacted the Site. Results of the Phase II ESA indicated that a release of petroleum was identified in the area west of the plant building and adjacent to the former concrete, AST fuel oil tank containment area. A second Phase II ESA, also performed by Andrews Engineering, was performed in 2010, to further delineate the signs of petroleum contamination, identified in the 2005 Phase II ESA. Results of this Phase II ESA indicated that a release of petroleum was identified in the area west of the former plant building and adjacent to the former 120,000 gallon fuel oil tank, concrete containment area. Exceedances of Industrial RISC standards for TPH/GRO were noted in the soil and groundwater in this area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 8,590 mg/kg have been detected in soils surrounding the former fuel oil tank containment area. TPH High End Organics (C8-C34) with concentrations ranging from non-detect to 7.7 mg/L have been detected in the shallow groundwater in the area of the former fuel oil tank containment area.

2.1.6 Summary of Phase II ESA Results

Summaries from the previously conducted Phase II ESAs at the Site are presented below:

- Phase II Environmental Site Assessment Report, Former Marport Smelting Co. Site. (Andrews Engineering, 2005).

  "Andrews has performed a Phase II ESA at the Site, that consisted of drilling (15) Geoprobe borings to determine or define subsurface conditions at eleven (11) selected locations or areas. The boring locations were selected in order to broadly evaluate potential impacts from the historical industrial operations on and near the Site. The borings were also located in areas to determine the general depth and continuity of saturated soils at the Site. In addition, three (3) surface material samples were taken of exposed materials inside of the plant structure on the Site.

  No groundwater samples were obtained from the uppermost saturated soil zone during this Phase II ESA and, therefore, these conclusions do not address that media.

  Based on observations and analytical results from the soil borings and surface samples, the Site subsurface is in markedly good condition considering the nature of the historical fill materials emplaced in the area and the long industrial use of the property and the vicinity. The sample analytical results indicate several instances of elevated PAHs or metals on the property, but these are not consistent across the site or at levels of concern. The historical use of the Site (refractory manufacturer and secondary aluminum smelting) has undoubtedly contributed to the identification of PAHs and several metals in the site soils from the raw materials, coal, and other fossil fuel used over the years. However, solvents, other volatile or semi-volatile organic compounds, or inorganic materials common to other types of manufacturing uses were not found in the subsurface soils on the site.

  One (1) definite release of petroleum was identified in the area west of the plant building and adjacent to the former concrete tank containment area. The subsurface plume appears to head to

the east and was not fully defined, but groundwater impact is likely based on the sample results and physical observations during the soil borings.

Additionally, care should be taken in disturbing the surface materials (fine particulates or dust) covering much of the interior surfaces of the structure. Direct contact with the apparent baghouse dusts should be minimized and the materials should be wetted or collected using High Efficiency Particulate Air (HEPA) filters to prevent the material becoming respirable. This material, based on the results from Sample MEC-1, should also be characterized prior to any disposal using the TCLP test method for lead and cadmium."

- Phase II Environmental Site Assessment Report, Thunderbird Real Estate (Former Marport Smelting Facility). (Andrews Engineering, 2010).

  "Nineteen soil borings were advanced in order to characterize soil and groundwater quality surrounding the former boring MS-4. The soils consisted of sandy fill that is saturated within 2 to 4 feet of ground surface.

  Soil results indicate that none of the RCRA metals exceed RISC default residential default levels. In addition, TPH/GRO from all sampling locations and depths are well below their respective RISC non-default residential closure levels. Exceedances of industrial RISC standards were limited to locations immediately adjacent to former boring MS-4. Borings beyond those distances had either no detections or were below RISC standards.

  Groundwater samples were obtained from AEI-1, immediately adjacent to MS-4 and from the furthest borings from MS-4 in each direction. All sample results were below detection limits for BTEX compounds and TPH/GRO. Exceedances of the Industrial RISC standard for TPH/HEO occurred at locations AEI-1 (immediately adjacent to MS-4) and 1N3. There were exceedances of the industrial RISC default level for lead at AEI-1 and 1N3, but these results are ambiguous due to the presence of entrained sediment as evidenced by high turbidity readings."

- Site Investigation Report, Former Oil Storage Tank Area – Osharai Indiana Site. (Trinity Consultants, 2022).

  " Fourteen probe holes were advanced within and around the former Fuel Oil Storage Tank Containment Area. These probes were advanced to a depth of 8 feet bgs. Soils from the probe holes were screened with a Photo Ionization Detector (PID) for indications of organic vapors. One soil sample was collected from the interval exhibiting the highest PID reading.

  Four temporary shallow monitoring wells were installed around the former Fuel Oil Storage Tank Containment Area at probe hole locations PH 04, PH 06, PH 12 and PH 15. Probe holes were advanced a minimum of ten feet below the top of the saturated soil zone. Shallow groundwater samples were collected from each of the temporary shallow monitoring wells.

  Results of the investigation have been evaluated and have produced the following conclusions.

  - Strata encountered during the investigation beneath the concrete and gravel layer consists of six to twenty-four inches of black coke ash fill material underlain by a fine-grained, loose sand with occasional pebbles and gravel.

- The uppermost water bearing strata at the Osharai Indiana site was encountered in a sand layer at a depth of 3.7-4.4 feet below ground surface.
- The unconfined shallow water bearing strata in and around the Osharai Indiana site is not utilized as a drinking water source.
- Several groundwater extraction wells are located within a one mile radius of the Osharai Indiana site. The groundwater extraction wells are located to the northwest of the Osharai Indiana site and the shallow extraction wells are hydraulically upgradient of the Osharai Indiana site. The nearest groundwater extraction well is located to the immediate north of the Osharai Indiana site, on the former Harbison Walker site and is 1,830 feet deep. The well is currently not in use.
- Soil samples were collected from the soil core interval which exhibited the highest PID reading, or if no PID reading was detected, was collected from the soil interval immediately above the moist/saturated zone of the boring. Soil samples were comprised of two material types; black coke ash fill material, and a black or tan fine grained sand.
- Detected soil VOC and PAH constituent detections were dependent on which material type was collected for analysis. Samples comprised of coke ash fill material exhibited detectable concentrations of VOC and PAH constituents in the low part per billion range and are representative of constituents historically associated with coke ash fill material. Samples comprised of sand material did not exhibit PAH constituents and only a few VOC constituents in the low part per billion range.
- Background soil sample PH 03 1.25-2.25, comprised of coke ash fill material, produced VOC and PAH constituent concentrations in the low parts per billion range and were similar to VOC and PAH constituent concentrations exhibited in samples collected around the Former Oil Storage Tank Area.
- All detected VOC and PAH constituent concentrations were below IDEM RCG Screening Levels as presented in Table A-6.
- Potential impact from site conditions is indicated by detections of PAH constituents in the FB 01 sample. The results of the field blank present the possibility that outside influences associated with the site conditions during the sampling event may have influenced sample results of both soil and water samples. Nine PAH constituents were detected above the laboratory MDL in the Field Blank sample. These constituents were also detected in many of the soil and groundwater samples as well.
- Detected soil concentrations are representative of the coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional soil characterization is necessary and no soil Remediation Work Plan is necessary as all detected VOC and PAH constituent concentrations are below IDEM RCG Screening Levels as presented in Table A-6.
- Groundwater samples were collected from four temporary monitoring wells surrounding the Former Oil Storage Tank Area. Detections of VOC constituents were below IDEM RCG Screening Levels as presented in Table A-6 in all four monitoring well samples. Various PAH constituents were detected in each of the four monitoring wells. The majority of PAH constituent concentrations were below IDEM RCG Screening Levels as presented in Table A-6. Seven PAH constituent concentrations were detected slightly above the IDEM RCG Screening Level for Tap Water.
- Groundwater PAH constituent concentrations are ambiguous due to the presence of entrained sediment in the collected water samples from the temporary monitoring wells. Groundwater samples collected from temporary monitoring wells traditionally produce elevated concentrations due to entrained sediment, in this case, coke ash fill material.

- Detected groundwater concentrations are representative of shallow groundwater impacted by the use of coke ash fill material present throughout the Osharai Indiana site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional groundwater characterization is necessary, and no groundwater Remediation Work Plan is necessary as shallow groundwater in the East Chicago, Indiana area is not used for drinking water and the detected PAH concentrations are representative of background shallow groundwater in areas where coke ash fill material was placed.

2.2 Site Documentation

2.2.1 Previous Reports

A number of reports documenting subsurface investigations and contamination assessments have been completed for the Osharai Indiana Site. These assessments and sampling events have included:

- Phase I Environmental Site Assessment Report, Former Marport Smelting Co. Site, East Chicago, Indiana, prepared for Pollution Control Industries, Inc. (Andrews Engineering, May 2005).
- Phase II Environmental Site Assessment Report, Former Marport Smelting Co. Site, East Chicago, Indiana, prepared for Pollution Control Industries, Inc. (Andrews Engineering, May 2005).
- Phase II Environmental Site Assessment Report, Former Marport Smelting Facility, East Chicago, Indiana, prepared for Tradebe Pollution Control Industries, Inc. (Andrews Engineering, April 2010).
- Site Investigation Report, Former Oil Storage Tank Area. Osharai Indiana Site, prepared for IDEM (Trinity Consultants August 2, 2022).
- Phase II Groundwater Investigation Quarterly Update (Q1), Marport LLC (Formerly Osharai Indiana), (Trinity Consultants April 25, 2023)
- Phase II Groundwater Investigation Quarterly Update (Q2), Marport LLC (Formerly Osharai Indiana), (Trinity Consultants May 24, 2023)
- Phase II Groundwater Investigation Quarterly Update (Q3), Marport LLC (Formerly Osharai Indiana), (Trinity Consultants July 31, 2023)
- Phase II Groundwater Investigation Quarterly Update (Q4), Marport LLC (Formerly Osharai Indiana), (Trinity Consultants November 8,2023)

3. FIELD INVESTIGATION ACTIVITIES

In an effort to assess current site conditions with respect to previously identified groundwater contamination near the former above ground Fuel Oil Storage Tank Secondary Containment Area, Trinity conducted the following investigation activities at the Marport LLC (Formerly Osharai Indiana site). The following sections detail the scope of work implemented to collect shallow groundwater samples.

Field investigation activities were conducted throughout a one year period. The initial Phase II Groundwater Investigation activities were conducted in January 2023. Second quarter sampling activities were conducted in May 2023. Third quarter sampling activities were conducted in June 2023 and fourth quarter sampling activities were conducted in September, 2023. A photographic log of the field activities is presented in Appendix A while Appendix B contains monitoring well location coordinates & elevations and Appendix C contains Monitoring Well Construction Diagrams & IDNR Record of Water Well forms.

3.1 Shallow Groundwater Sampling and Analysis

3.1.1 Installation and Development of Shallow Groundwater Wells

Twelve permanent shallow groundwater monitoring wells were installed around the former Fuel Oil Tank Containment Area and the property boundary at the locations presented on Figure 3. Monitoring well location coordinates and elevations are presented in Appendix B. Probe holes were advanced approximately ten feet below the top of the saturated zone which based on previous sampling events is approximately three to seven feet below ground surface. Each permanent monitoring well was constructed of 1.5 inch OD PVC schedule 40 pre-packed screens with 1.5 inch schedule 40 PVC riser. The pre-packed screen extended a minimum of one foot above the top of the saturated zone. The annulus between the probe casing and the pre-packed well screen was filled with sand to a height of one foot above the screen then filled with bentonite chips then grouted to the surface. A protective steel well protector was placed in concrete surrounding the outer casing. Immediately after the wells were completed, they were developed by a combination of pumping and surging. Monitoring well construction diagrams and IDNR Record of Water Well Forms are contained in Appendix C.

After installation of the permanent monitoring wells, their elevations were established by a registered professional land surveyor DLZ. For each well, elevations were obtained for the ground surface and the top of each riser pipe. Measuring points for water level monitoring will be permanently marked on the riser pipe. Monitoring well elevations are presented in Appendix B.

3.1.2 Sampling Locations, Depths, and Frequency

The permanent shallow groundwater monitoring wells were located approximately as indicated on Figure 3. Monitoring Well location and elevation data are contained in Appendix B while Monitoring Well construction information is contained in Appendix C.

Shallow groundwater samples were collected from each of the permanent shallow groundwater monitoring wells on a quarterly basis for a period of four quarters. Quarterly groundwater samples were collected during the following timeframes:

- January 4-5, 2023
- April 4-5, 2023
- June 28-29, 2023

- September 27-28, 2023.

3.1.3 List of Equipment

Probehole advancement was performed utilizing a Geoprobe® 6620DT unit equipped with four foot continuous stainless steel rods. Groundwater sampling equipment consisted of a water level indicator and a peristaltic pump with new tubing.

3.1.4 Description of Sampling Procedures

Groundwater samples were collected from the permanent shallow groundwater monitoring wells using a peristaltic pump with new tubing. Prior to sample collection, the static groundwater level was measured from the top of the monitoring well to the nearest 0.01 foot. Groundwater elevation data is presented in Tables 2 through 5 while groundwater contour maps for each sampling period are presented in Figures 4 through 7.

Groundwater samples were placed in clean, laboratory-provided containers; sealed, labeled; and stored in an iced chest. Samples were delivered under chain of custody to Pace Analytical Laboratories for analysis.

3.1.5 Target Parameters and Analytical Methods

The area exhibiting contamination had contained fuel oil. IDEM guidance as presented in IDEM's Risk-based Closure Guide recommends the analysis of polynuclear aromatic hydrocarbons (PAHs) for fuel oil releases.

Shallow groundwater samples were analyzed for:

- PAHs – Method SW 846 8270 SIM
- VOCs – Method SW 846 8260

4. LABORATORY ANALYTICAL PROGRAM

Pace Analytical (Pace) laboratories of Mount Juliet, Tennessee, performed the laboratory analysis of the groundwater samples that were obtained in accordance with the Phase II Groundwater Investigation Work Plan. Pace's work was performed in accordance with their QA/QC manual. Data validation was provided by Pace and is summarized in the Case Summary and Quality Control Summary Section of each analytical report.

During the field investigation, samples were collected in individual, clean, laboratory supplied containers appropriate for the sample matrix and analytical selection. As specified in the Phase II Groundwater Investigation Work Plan, samples collected as part of this investigation were analyzed for PAHs and VOCs.

The significance of potential released was evaluated by comparing the measured values to applicable screening criteria. These screening criteria include IDEMs 2022 Remediation Closure Guide (RCG) Screening Level Table A-6 and site background levels.

5. FIELD INVESTIGATION RESULTS

Twelve shallow groundwater monitoring wells were sampled on a quarterly basis for a period of four quarters at sample locations depicted on Figure 3. Shallow groundwater samples were analyzed for VOC and PAH constituents and laboratory results for each quarter are presented in Table 6 through Table 9 while a four quarter results summary is presented in Table 10. Constituent concentrations were compared to IDEMs 2021 Remediation Closure Guide (RCG) Screening Level Table A-6 concentrations. Quarterly groundwater concentration maps are presented in Figures 8 through 11. Complete analytical reports are provided in Appendix D. Investigation results for groundwater samples are presented by quarterly sampling event, by monitoring well, and analytical suite in the following subsections.

5.1 Shallow Groundwater Analytical Results (Q1-2023)

5.1.1 MW-1

- **VOC Constituents**

Four VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.130J ug/L which is below the RCG screening level of 5 ug/L.

Cis-1,2-Dichloroethene was detected at a concentration of 2.72 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 6.01 ug/L which is slightly above the RCG screening level of 5 ug/L but is below the EPA Regional Screening Level for tap water of 11 ug/L.

Trichloroethene was detected in at a concentration of 2.43 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.1.2 MW-2

- **VOC Constituents**

One VOC constituent was detected above the laboratory MDL. The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.101J ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.1.3 MW-3

- **VOC Constituents**

Four VOC constituents were detected above the laboratory MDL. The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 0.856J ug/L which is below the RCG screening level of 70 ug/L.

Trans-1,3-Dichloroethene was detected at a concentration of 0.221J ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 0.837J ug/L which is below the RCG screening level of 5 ug/L.

Trichloroethene was detected at a concentration of 0.616J ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

One PAH constituent was detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Pyrene was detected at a concentration of 0.0185J ug/L which is below the RCG screening level of 120 ug/L.

5.1.4 MW-4

- **VOC Constituents**

One VOC constituent was detected above the laboratory MDL. The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.116J ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

Three PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Fluoranthene was detected at a concentration of 0.0310J ug/L which is below the RCG screening level of 800 ug/L.

Phenanthrene was detected at a concentration of 0.0315J ug/L which does not have an established RCG screening level.

Pyrene was detected at a concentration of 0.0406J ug/L which is below the RCG screening level of 120 ug/L.

5.1.5 MW-5

- **VOC Constituents**

One VOC constituent was detected above the laboratory MDL. The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.097J ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.1.6 MW-6

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.1.7 MW-7

- **VOC Constituents**

One VOC constituent was detected above the laboratory MDL. The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.138J ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

Five PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Benzo(a)anthracene was detected at a concentration of 0.0269J ug/L which is below the RCG screening level of 0.3 ug/L.

Chrysene was detected at a concentration of 0.0239J ug/L which is below the RCG screening level of 250 ug/L.

Fluoranthene was detected at a concentration of 0.0540J ug/L which is below the RCG screening level of 800 ug/L.

Phenanthrene was detected at a concentration of 0.0639 ug/L which does not have an established RCG screening level.

Pyrene was detected at a concentration of 0.054 ug/L which is below the RCG screening level of 120 ug/L.

5.1.8 MW-8

- **VOC Constituents**

Three VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Benzene was detected at a concentration of 0.190J ug/L which is below the RCG screening level of 5 ug/L.

Methyl tert-butyl ether was detected at a concentration of 0.516J ug/L which does not have an established RCG.

Trichloroethene was detected in at a concentration of 1.58 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.1.9 MW-9

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.1.10 MW-10

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.1.11 MW-11

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

One PAH constituent was detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Phenanthrene was detected at a concentration of 0.0183 ug/L which does not have an established RCG screening level.

5.1.12 MW-12

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

Two PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Phenanthrene was detected at a concentration of 0.0199 ug/L which does not have an established RCG screening level of 800 ug/L.

Pyrene was detected at a concentration of 0.0200J ug/L which is below the RCG screening level of 120 ug/L.

5.2 Shallow Groundwater Analytical Results (Q2-2023)

5.2.1 MW-1

- **VOC Constituents**

Three VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 2.77 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 3.91 ug/L which is below the RCG screening level of 5 ug/L.

Trichloroethene was detected at a concentration of 1.90 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.2.2 MW-2

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

One PAH constituent was detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Phenanthrene was detected at a concentration of 0.0507B ug/L which does not have an established RCG screening level.

5.2.3 MW-3

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

One PAH constituent was detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Phenanthrene was detected at a concentration of 0.00674B ug/L which does not have an established RCG screening level.

5.2.4 MW-4

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.2.5 MW-5

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.2.6 MW-6

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.2.7 MW-7

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.2.8 MW-8

- **VOC Constituents**

One VOC constituent was detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Trichloroethene was detected in at a concentration of 1.69 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.2.9 MW-9

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

Two PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Fluoranthene was detected at a concentration of 0.104B ug/L which is below the RCG screening level of 290 ug/L.

Phenanthrene was detected at a concentration of 0.546B ug/L which does not have an established RCG screening level.

5.2.10 MW-10

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

Two PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Fluoranthene was detected at a concentration of 0.115B ug/L which is below the RCG screening level of 290 ug/L.

Phenanthrene was detected at a concentration of 0.672B ug/L which does not have an established RCG screening level.

5.2.11 MW-11

- **VOC Constituents**

Two VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Acetone was detected at a concentration of 94.9 ug/L which is below the RCG screening level of 18,000 ug/L.

2-Butanone (MEK) was detected at a concentration of 35.5 ug/L which is below the RCG screening level of 5,600 ug/L.

- **PAH Constituents**

Three PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Fluoranthene was detected at a concentration of 0.141B ug/L which is below the RCG screening level of 290 ug/L.

Phenanthrene was detected at a concentration of 0.696B ug/L which does not have an established RCG screening level.

Pyrene was detected at a concentration of 0.0643B ug/L which is below the RCG screening level of 120 ug/L.

5.2.12 MW-12

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

Three PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Fluoranthene was detected at a concentration of 0.162B ug/L which is below the RCG screening level of 290 ug/L.

Phenanthrene was detected at a concentration of 0.624B ug/L which does not have an established RCG screening level.

Pyrene was detected at a concentration of 0.0650B ug/L which is below the RCG screening level of 120 ug/L.

5.3 Shallow Groundwater Analytical Results (Q3-2023)

5.3.1 MW-1

- **VOC Constituents**

Three VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 2.97 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 4.2 ug/L which is below the RCG screening level of 5 ug/L.

Trichloroethene was detected at a concentration of 3.06 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.3.2 MW-2

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.3.3 MW-3

- **VOC Constituents**

Two VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 1.02 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 1.01 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

Three PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Benzo(b)fluoranthene was detected at a concentration of 0.0541 ug/L which is below the RCG screening level of 2.5 ug/L.

Fluoranthene was detected at a concentration of 0.112 ug/L which is below the RCG screening level of 800 ug/L.

Pyrene was detected at a concentration of 0.0952 ug/L which is below the RCG screening level of 120 ug/L.

5.3.4 MW-4

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.3.5 MW-5

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.3.6 MW-6

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.3.7 MW-7

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

One PAH constituent was detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Phenanthrene was detected at a concentration of 0.062 ug/L which does not have an established RCG screening level.

5.3.8 MW-8

- **VOC Constituents**

One VOC constituent was detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Trichloroethene was detected at a concentration of 2.52 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.3.9 MW-9

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.3.10 MW-10

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

Six PAH constituents were detected above the laboratory MDL. The following presents a summary of the detected PAHs.

Benzo(a)anthracene was detected at a concentration of 0.0703 ug/L which is below the RCG screening level of 0.3 ug/L.

Benzo(a)pyrene was detected at a concentration of 0.0597 ug/L which is below the RCG screening level of 1.8 ug/L.

Benzo(b)fluoranthene was detected at a concentration of 0.0796 ug/L which is below the RCG screening level of 2.5 ug/L.

Chrysene was detected at a concentration of o.o576 ug/L which is below the RCG screening level of 250 ug/L.

Fluoranthene was detected at a concentration of 0.144 ug/L which is below the RCG screening level of 290 ug/L.

Pyrene was detected at a concentration of 0.121 ug/L which is below the RCG screening level of 120 ug/L.

5.3.11 MW-11

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.3.12 MW-12

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4 Shallow Groundwater Analytical Results (Q4-2023)

5.4.1 MW-1

- **VOC Constituents**

Three VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 4.19 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 6.32 ug/L which is slightly above the RCG screening level of 5 ug/L but is below the EPA Regional Screening Level for tap water of 11 ug/L.

Trichloroethene was detected at a concentration of 3.53 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.2 MW-2

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.4.3 MW-3

- **VOC Constituents**

Two VOC constituents were detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Cis-1,2-Dichloroethene was detected at a concentration of 1.77 ug/L which is below the RCG screening level of 70 ug/L.

Tetrachloroethene was detected at a concentration of 1.15 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL

5.4.4 MW-4

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.5 MW-5

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.4.6 MW-6

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.4.7 MW-7

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory MDL.

5.4.8 MW-8

- **VOC Constituents**

One VOC constituent was detected above the laboratory method detection limit (MDL). The following presents a summary of the detected VOCs.

Trichloroethene was detected at a concentration of 2.2.96 ug/L which is below the RCG screening level of 5 ug/L.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.9 MW-9

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.10 MW-10

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.11 MW-11

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

5.4.12 MW-12

- **VOC Constituents**

No VOC constituents were detected above the laboratory MDL.

- **PAH Constituents**

No PAH constituents were detected above the laboratory method detection limit.

6. QUALITY ASSURANCE/QUALITYCONTROL

This project was performed in accordance with QA/QC specifications outlined in the approved Revised Investigation Work Plan. Specifically, the work plan outlined the collection of field QC samples, data verification, and analysis of data quality objectives based on precision, accuracy, representativeness, completeness, and comparability.

6.1 Field Control Samples

The Revised Quality Assurance Project Plan (QAPP) specified the number and location for the collection of field duplicates, and field blanks. The field blank consisted of distilled water samples collected for background comparison. Rinsate blanks consisted of distilled water used as a final rinse of decontamination sampling equipment to verify that decontamination procedures were performed properly. Analytical results for the collected field blank and rinsate blank are presented in Tables 6 through 9. Field duplicate samples were of the matrix and location as identified. Duplicate sample results are presented in Tables 6 through 9.

6.1.1 Field Blanks

One field blank sample was collected during each quarterly sampling event and was submitted for analytical testing. The field blank was collected while collecting a groundwater sample. Field blank samples were collected at the following locations (Q1-MW-10, Q2-MW-9, Q3-MW-8, Q4-MW-8). These monitoring well locations were selected due to their proximity to the active Tradebe plant located to the immediate south. No constituents were detected above the laboratory MDL.

6.1.2 Duplicate Samples

One duplicate soil sample was collected and submitted for analytical testing during each quarterly sampling event. Duplicate samples for each quarter are as follows:

- Q1 DUP 01/MW-1
- Q2 Dup 01/MW-11
- Q3 Dup 01/MW-8
- Q4 Dup 01/MW-3

An evaluation of this data indicates that these detected concentrations should be considered valid.

6.2 Field Control Samples

Matrix spike and matrix spike duplicate were analyzed for every batch of testing performed by the laboratory. The matrix spike/matrix spike duplicate results, as well as a narrative description of the method-specified calibrations and quality control performance criteria are contained in Appendix D.

6.2.1 Data Validation

The data generated for this project was reviewed utilizing procedures derived from the USEPA's Contract Laboratory Program (CLP), National Functional Guidelines for Organic Data Review, Multi-concentration, February 1993. The data review for this project included evaluation of the following:

- Holding times
- Matrix spike/matrix spike duplicate recoveries

- Duplicate precision
- Field and laboratory blank results

6.2.2 Data Quality Objectives

Data validation was used in an effort to evaluate if the data quality objectives (DQO) for field and laboratory measurements had been achieved. The DQO included considerations of precision, accuracy, completeness, representativeness, and comparability.

Precision quantifies the repeatability of a given measurement. Precision is estimated by calculating the Relative Percent Difference (RPD) of laboratory and field duplicates analytical results, as shown by the following equation:

$$RPD = \frac{Orginial - Duplicate}{(Original + Duplicate)/2} * 100$$

Laboratory accuracy refers to the percentage of a known amount of analyte recovered from a given matrix. The anticipated recovery of metals typically ranges between 75 to 125%. Percent recoveries for samples are estimated by the following equation:

$$R(\%) = \frac{(Spike\ Conc) - (Original)}{(Amount\ of\ Spike)} * 100$$

Completeness refers to the percentage of valid data received from actual testing performed in the laboratory. Completeness is calculated using the following equation:

$$Completeness = \frac{\#\ Valid\ Measurements}{Total\ \#\ Measurements} * 100$$

Comparability is the degree to which one data set can be compared to another. To ensure comparability, samples were taken at specified intervals and using similar sampling methodologies. In addition, the samples were analyzed at the laboratory within the required holding times and using accepted USEPA protocols.

Representativeness is the degree to which a sample or group of samples is indicative of the population being sampled. Over the course of the investigation, samples were collected in such a manner that they were representative of the chemical composition and physical state of the matrix at the time of sampling.

6.2.3 Qualification of Data Results

The analytical testing results for the tested analytes for the submitted samples were acceptable based on the fact that all method blanks for the associated batches met method specific criteria.

7. OBSERVATIONS

A summary of the Marport LLC (formerly Osharai Indiana Site) Phase II Groundwater Investigation Work Plan implementation observations is presented in the following subsections.

7.1 Shallow Groundwater Observations

7.1.1 MW-1

Analytical results from the groundwater samples collected at MW-1, which is located to the southwest of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Four VOC constituents were detected above the laboratory MDL during the quarterly sampling period. Benzene was detected in one of four quarters. Cis-1,2-dichloroethene , tetrachloroethene, and trichloroethene were detected in every quarterly sampling event. The detected concentrations of every constituent are all below the RCG screening level or below the EPA Regional Screening Level for tap water.

- No PAH constituents were detected above the laboratory MDL.

7.1.2 MW-2

Analytical results from the groundwater samples collected at MW-2, which is located to the northwest of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- One VOC constituent was detected above the laboratory MDL during the quarterly sampling period. Benzene was detected during the first quarter sampling event. The detected concentration is below the RCG screening level.

- One PAH constituent was detected above the laboratory MDL. Phenanthrene was detected during the second quarterly sampling event. The detected concentration is below the RCG screening level.

7.1.3 MW-3

Analytical results from the groundwater samples collected at MW-3, which is located to the south of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Four VOC constituents were detected above the laboratory MDL during the quarterly sampling period. Cis-1,2-dichloroethene was detected during three of four quarterly sampling events. Trans-1,2-dichloroethene was detected during the first quarter sampling event. Tetrachloroethene was detected during three of four quarterly sampling events while trichloroethene was detected during the first quarter sampling event. The detected concentrations of every constituent are all below the RCG screening level.

- Four PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Benzo(b)fluoranthene was detected during the third quarterly sampling event. Fluoranthene was detected during the third quarterly sampling event. Phenanthrene was detected during the second

quarterly sampling event while pyrene was detected during the first and third quarter sampling events. The detected concentrations of every constituent are below the RCG screening level.

7.1.4 MW-4

Analytical results from the groundwater samples collected at MW-4, which is located to the south of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- One VOC constituent was detected above the laboratory MDL during the quarterly sampling period. Benzene was detected during the first quarter sampling event. The detected concentration is below the RCG screening level.

- Three PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Fluoranthene, phenanthrene, and pyrene were detected during the first quarterly sampling event. The detected concentrations of every constituent are below the RCG screening level.

7.1.5 MW-5

Analytical results from the groundwater samples collected at MW-5, which is located to the north of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- One VOC constituent was detected above the laboratory MDL during the quarterly sampling period. Benzene was detected during the first quarter sampling event. The detected concentration is below the RCG screening level.

- No PAH constituents were detected above the laboratory MDL.

7.1.6 MW-6

Analytical results from the groundwater samples collected at MW-6, which is located to the north of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- No VOC constituents were detected above the laboratory MDL.

- No PAH constituents were detected above the laboratory MDL.

7.1.7 MW-7

Analytical results from the groundwater samples collected at MW-7, which is located to the south of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- One VOC constituent was detected above the laboratory MDL during the quarterly sampling period. Benzene was detected during the first quarter sampling event. The detected concentration is below the RCG screening level.

- Five PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Benzo(a)anthracene, chrysene, fluoranthene, and pyrene were detected during the first quarterly

sampling event. Phenanthrene was detected during the first and third quarterly sampling events. The detected concentrations of every constituent are below the RCG screening level.

7.1.8 MW-8

Analytical results from the groundwater samples collected at MW-8, which is located to the southeast of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Three VOC constituents were detected above the laboratory MDL during the quarterly sampling period. Benzene and MTBE were detected during the first quarterly sampling event while trichloroethene was detected every quarter. The detected concentrations of every constituent are all below the RCG screening level or below the EPA Regional Screening Level for tap water.

- No PAH constituents were detected above the laboratory MDL.

7.1.9 MW-9

Analytical results from the groundwater samples collected at MW-9, which is located to the southwest of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- No VOC constituents were detected above the laboratory MDL.

- Two PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Fluoranthene and phenanthrene were detected during the second quarterly sampling event. The detected concentrations of every constituent are below the RCG screening level.

7.1.10 MW-10

Analytical results from the groundwater samples collected at MW-10, which is located to the southeast of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- No VOC constituents were detected above the laboratory MDL.

- Seven PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and pyrene were detected during the third quarterly sampling event. Phenanthrene was detected during the second quarterly sampling event while fluoranthene was detected during the second and third quarterly sampling events. The detected concentrations of every constituent are below the RCG screening level.

7.1.11 MW-11

Analytical results from the groundwater samples collected at MW-11, which is located to the east of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- Two VOC constituents were detected above the laboratory MDL during the quarterly sampling period. Acetone and 2-butanone were detected during second quarterly sampling event. The detected concentrations of every constituent are all below the RCG screening level.

- Three PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Fluoranthene and pyrene were detected during the second quarterly sampling event, while phenanthrene was detected during the first and second quarterly sampling events. The detected concentrations of every constituent are below the RCG screening level.

7.1.12 MW-12

Analytical results from the groundwater samples collected at MW-12, which is located to the southeast of the former oil storage secondary containment structure, as depicted on Figure 3, produced the following observations.

- No VOC constituents were detected above the laboratory MDL.

- Three PAH constituents were detected above the laboratory MDL during the quarterly sampling period. Fluoranthene was detected during the second quarterly sampling event while phenanthrene and pyrene were detected during the first and second sampling events. The detected concentrations of every constituent are below the RCG screening level.

8. CONCLUSIONS

Tradebe has successfully implemented the approved Phase II Groundwater Investigation Work Plan for the Former Oil Storage Tank Area at the Marport LLC (Formerly Osharai Indiana) site in East Chicago, Indiana. Results of the investigation have been evaluated and have produced the following conclusions.

- The uppermost water bearing strata at the Marport LLC (Formerly Osharai Indiana) site is encountered at a depth of approximately 3-5 feet below ground surface or at an approximate elevation between 583 and 585 mean sea level.
- The groundwater flow direction is the to northwest with a relatively flat gradient.
- The unconfined shallow water bearing strata in and around the Marport LLC (Formerly Osharai Indiana) site is not utilized as a drinking water source.
- Groundwater samples were collected from twelve monitoring wells surrounding the Former Oil Storage Tank Area for a period of four quarters. Detections of VOC and PAH constituents were below IDEM RCG Screening Levels and EPA Regional Screening Levels for tap water.
- Detected groundwater concentrations are representative of shallow groundwater impacted by the use of coke ash fill material present throughout the Marport LLC (Formerly Osharai Indiana) site and the East Chicago, Indiana area, and are not indicative of a release from operations associated with the Former Oil Storage Tank.
- No additional groundwater characterization is necessary, and no groundwater Remediation Work Plan is necessary as shallow groundwater in the East Chicago, Indiana area is not used for drinking water and the detected VOC and PAH concentrations are below screening levels and are representative of background shallow groundwater in areas where coke ash fill material was placed.

9. RECOMMENDATIONS

Tradebe recommends, that since the Phase II Groundwater Investigation Work Plan for the Marport LLC (Formerly Osharai Indiana) site did not produce results indicating that the Former Oil Storage Tank Area has negatively impacted the groundwater, that IDEM provide a Certificate of Completion to Tradebe followed by the issuance of Covenant No to Sue from the Governor's office.

FIGURES

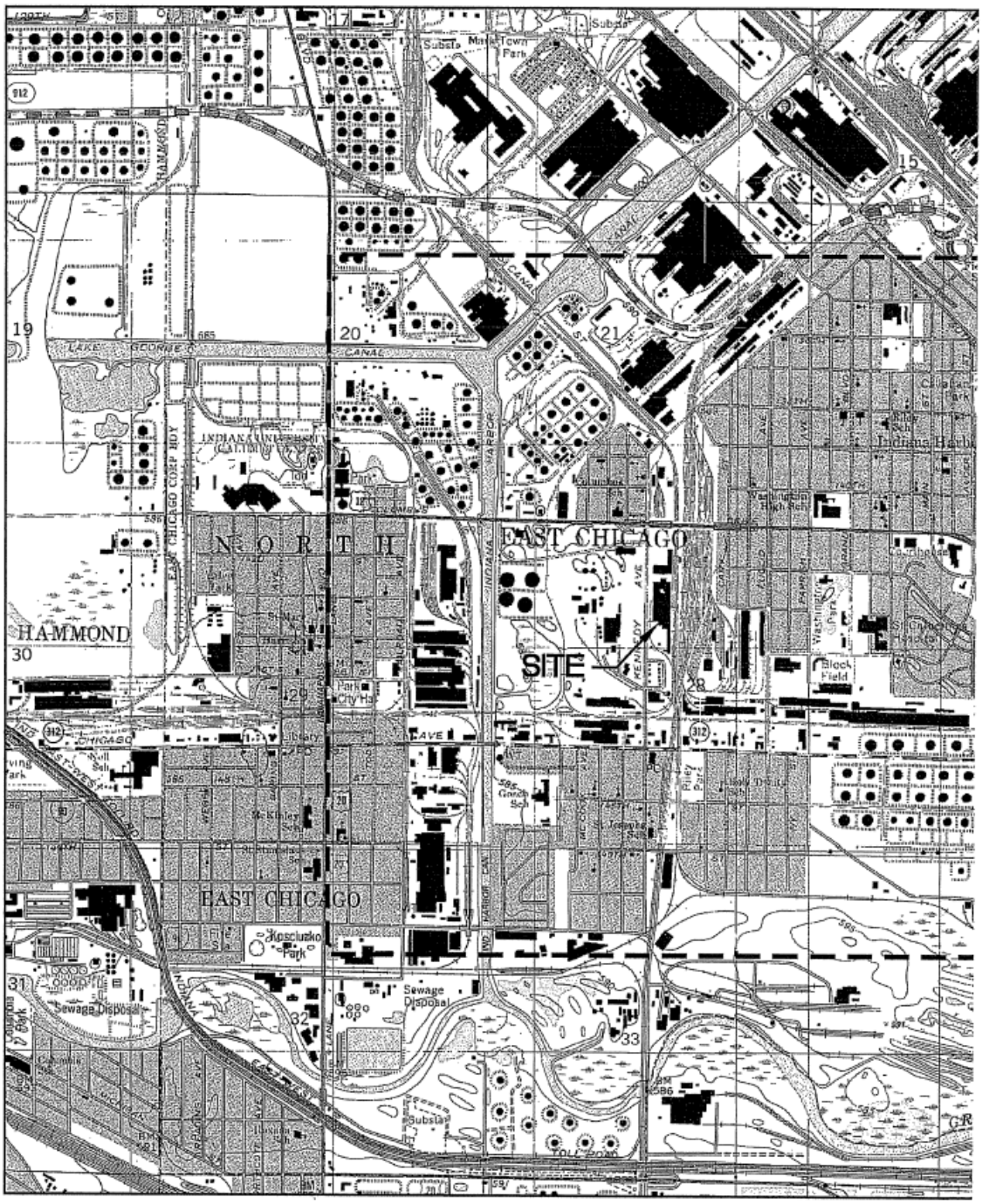


FIGURE 1

SITE LOCATION MAP

MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

FIGURE 2

AREA MAP

MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

FIGURE 3
Area Map
Marport LLC (formerly Osharai Indiana) Site

Tradebe East Chicago Q1 GW Contour Map

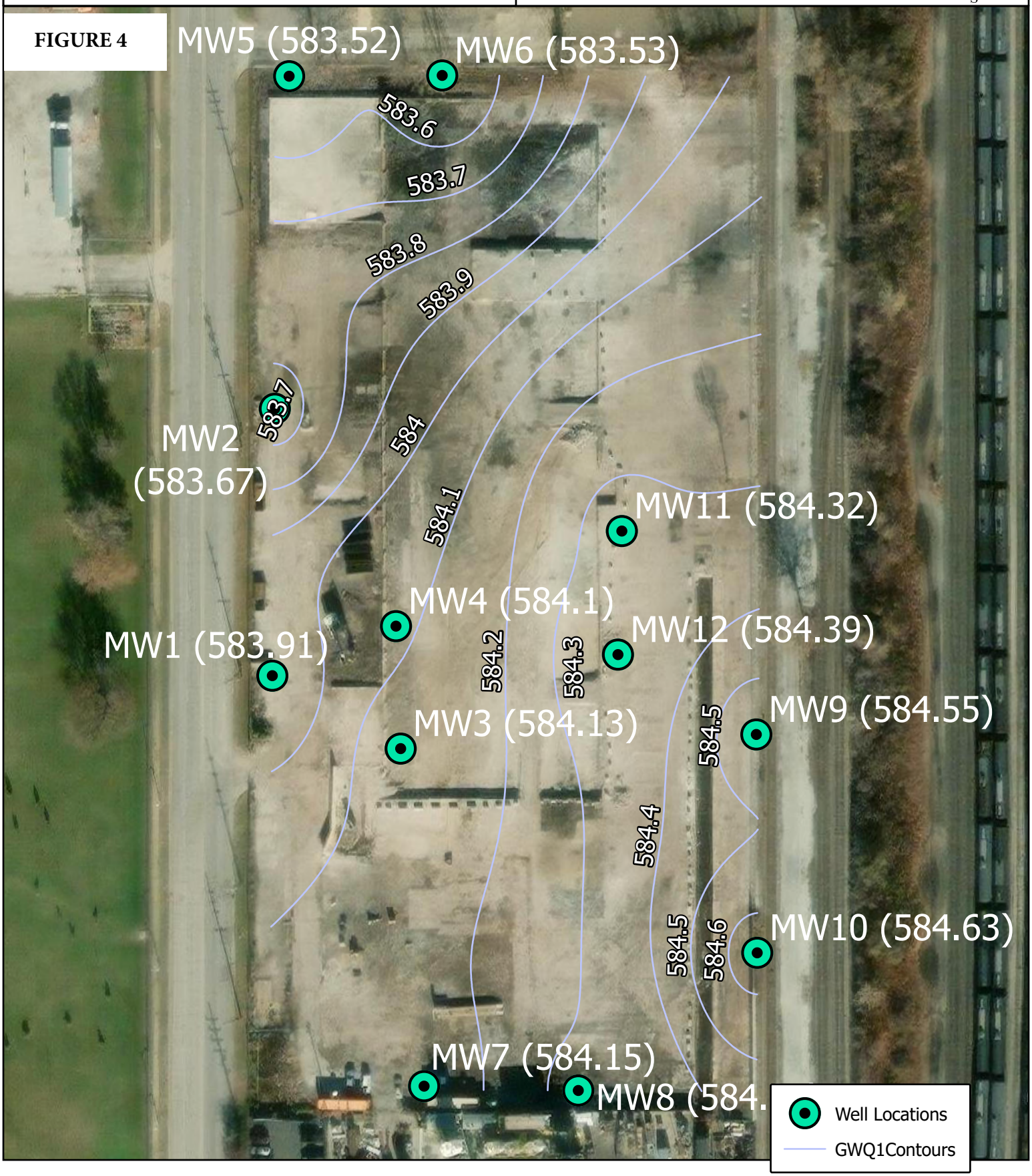
Trinity Consultants

Project Number: 222601.0143

0 0.010.01 0.02 0.03 0.04 Miles

N W E S

FIGURE 4



Tradebe East Chicago Q2 GW Contour Map

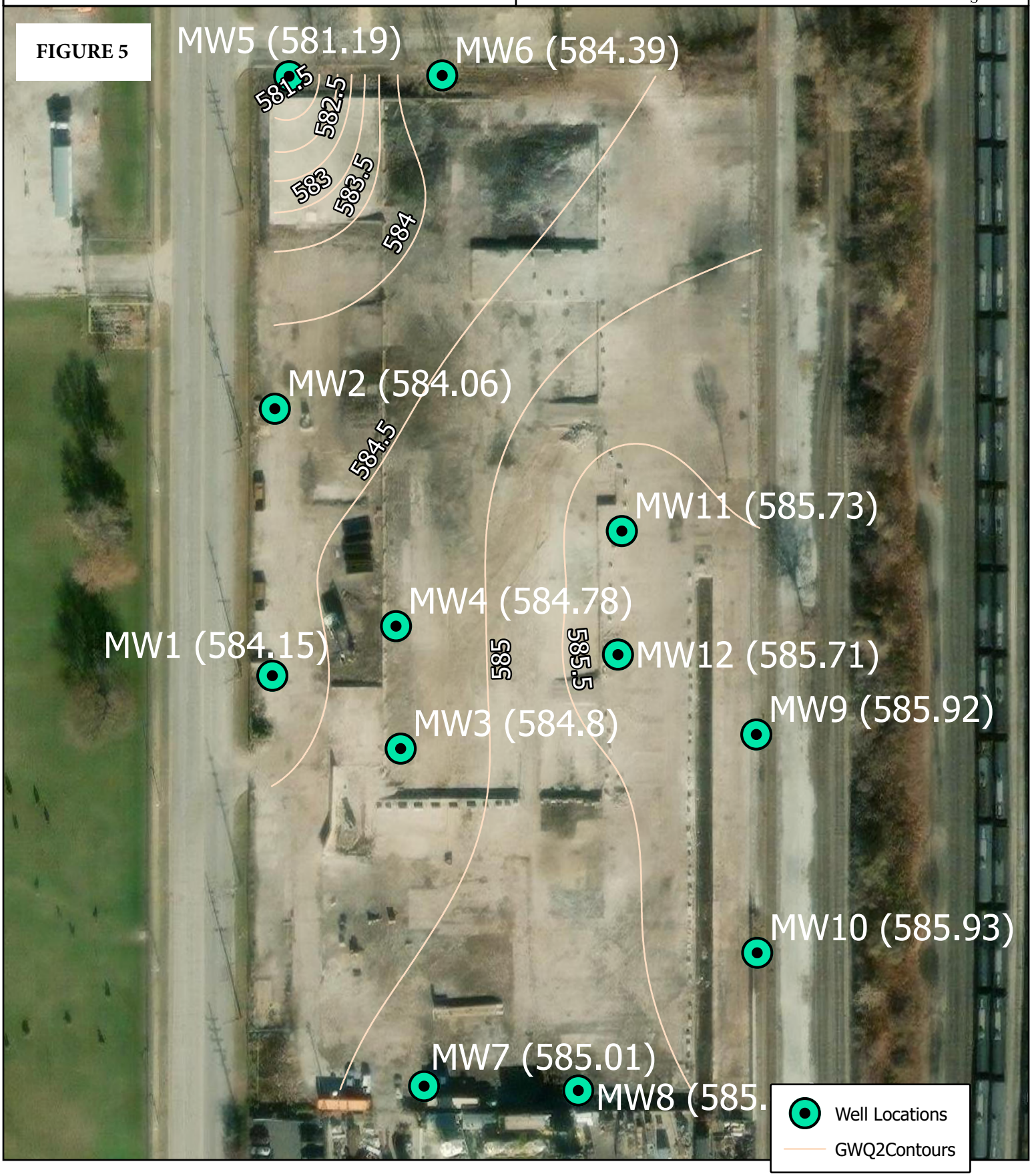
Trinity Consultants

Project Number: 222601.0143

0 0.010.01 0.02 0.03 0.04 Miles

N W E S

FIGURE 5



Tradebe East Chicago Q3 GW Contour Map

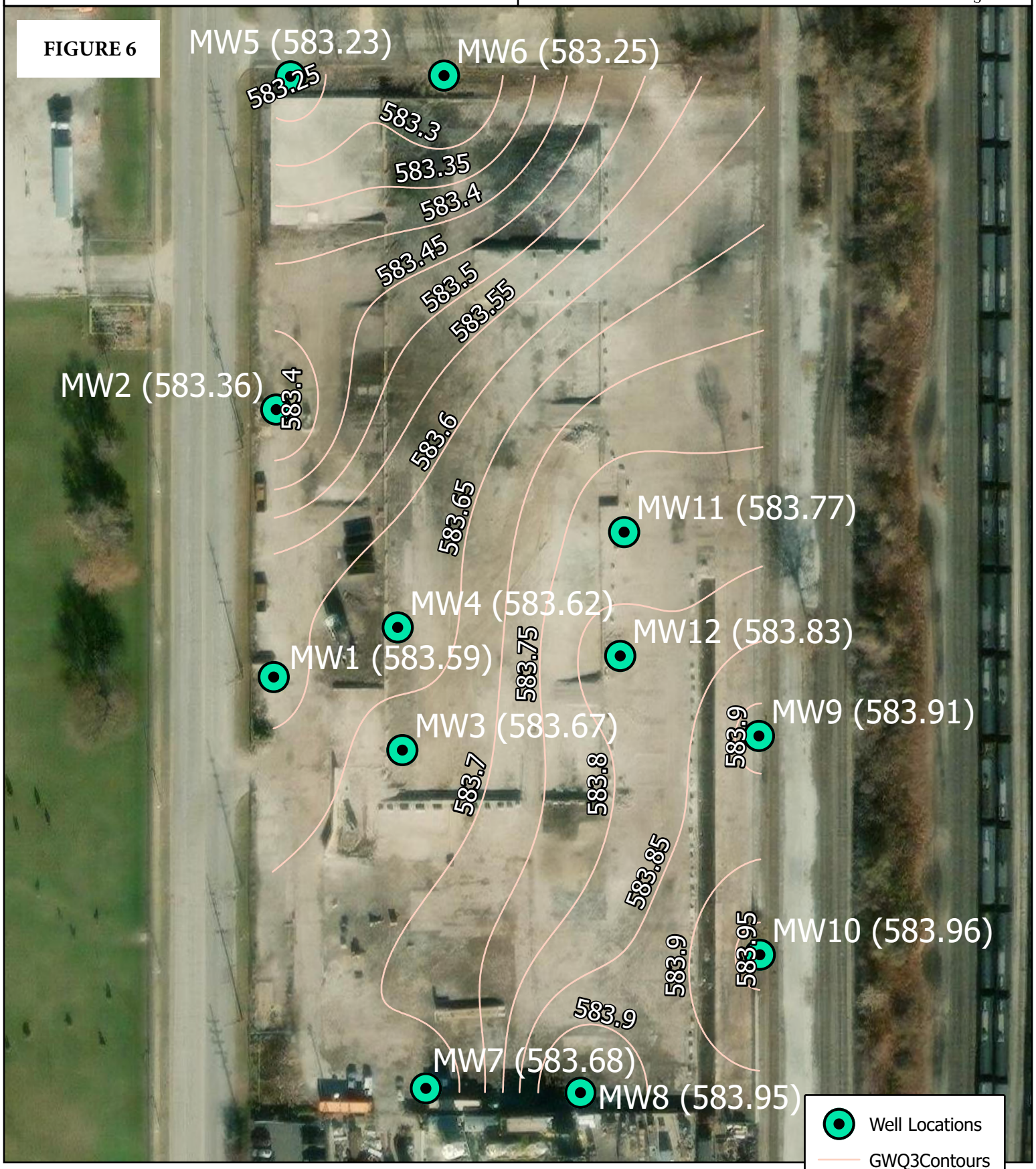
Trinity Consultants

Project Number: 222601.0143

0 0.010.01 0.02 0.03 0.04 Miles

N W E S

FIGURE 6



Tradebe East Chicago Q4 GW Contour Map

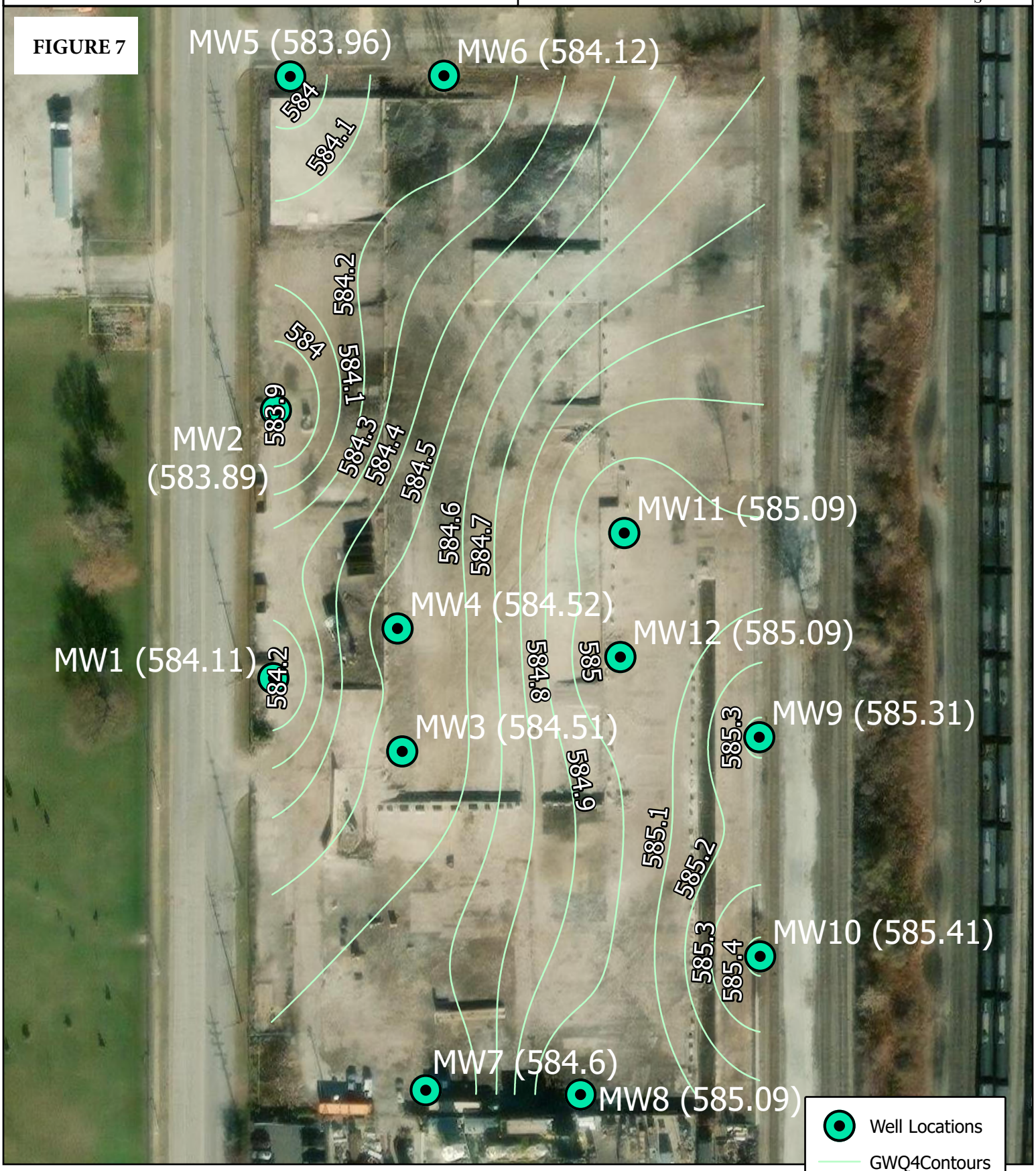
Trinity Consultants

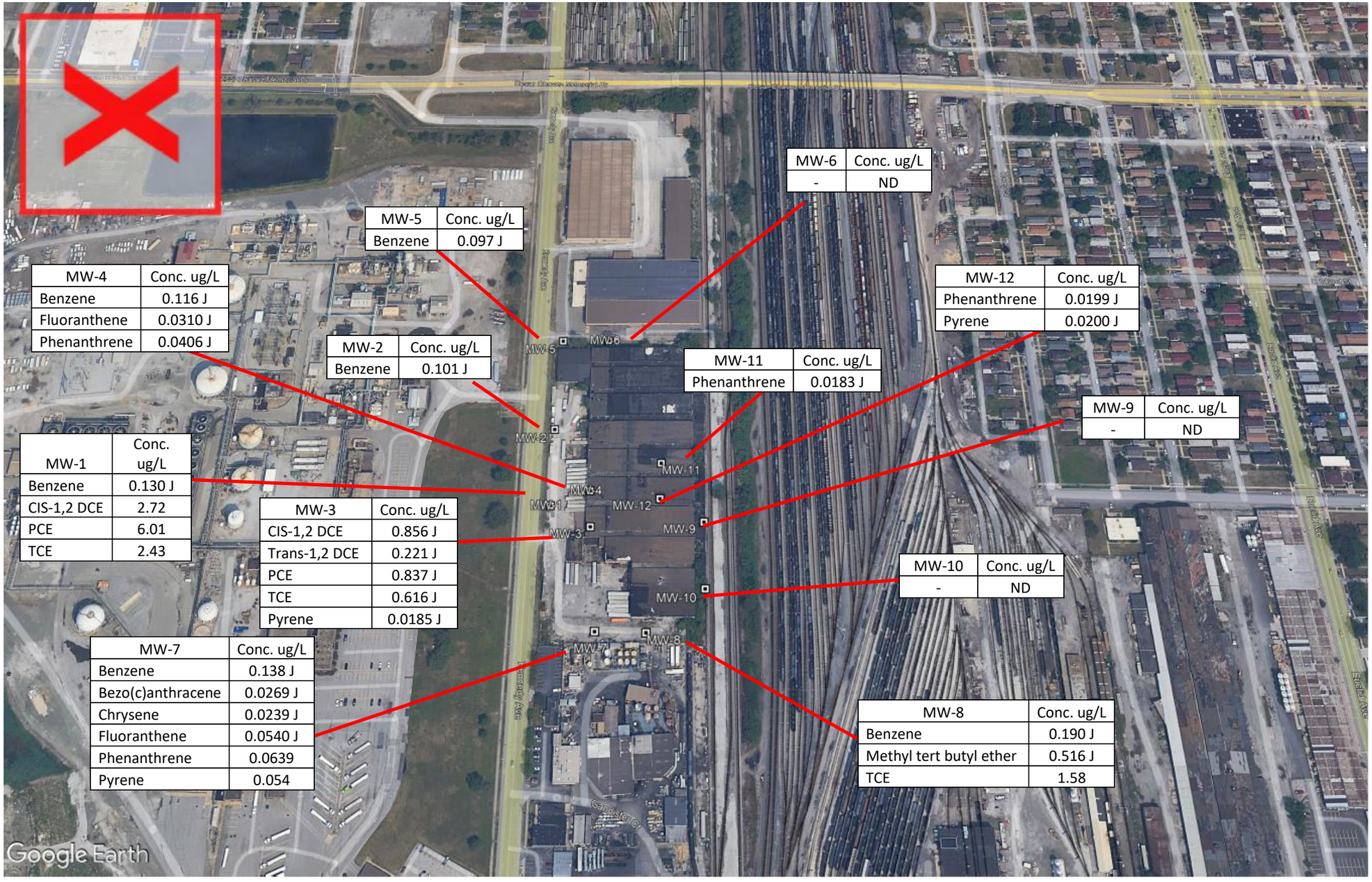
Project Number: 222601.0143

0 0.010.01 0.02 0.03 0.04 Miles

N W E S

FIGURE 7





MW-4	Conc. ug/L
Benzene	0.116 J
Fluoranthene	0.0310 J
Phenanthrene	0.0406 J

MW-5	Conc. ug/L
Benzene	0.097 J

MW-6	Conc. ug/L
-	ND

MW-2	Conc. ug/L
Benzene	0.101 J

MW-11	Conc. ug/L
Phenanthrene	0.0183 J

MW-12	Conc. ug/L
Phenanthrene	0.0199 J
Pyrene	0.0200 J

MW-9	Conc. ug/L
-	ND

MW-1	Conc. ug/L
Benzene	0.130 J
CIS-1,2 DCE	2.72
PCE	6.01
TCE	2.43

MW-3	Conc. ug/L
CIS-1,2 DCE	0.856 J
Trans-1,2 DCE	0.221 J
PCE	0.837 J
TCE	0.616 J
Pyrene	0.0185 J

MW-10	Conc. ug/L
-	ND

MW-7	Conc. ug/L
Benzene	0.138 J
Bezo(c)anthracene	0.0269 J
Chrysene	0.0239 J
Fluoranthene	0.0540 J
Phenanthrene	0.0639
Pyrene	0.054

MW-8	Conc. ug/L
Benzene	0.190 J
Methyl tert butyl ether	0.516 J
TCE	1.58

Figure 8
Q1 – 2023
Analytical Concentration Map

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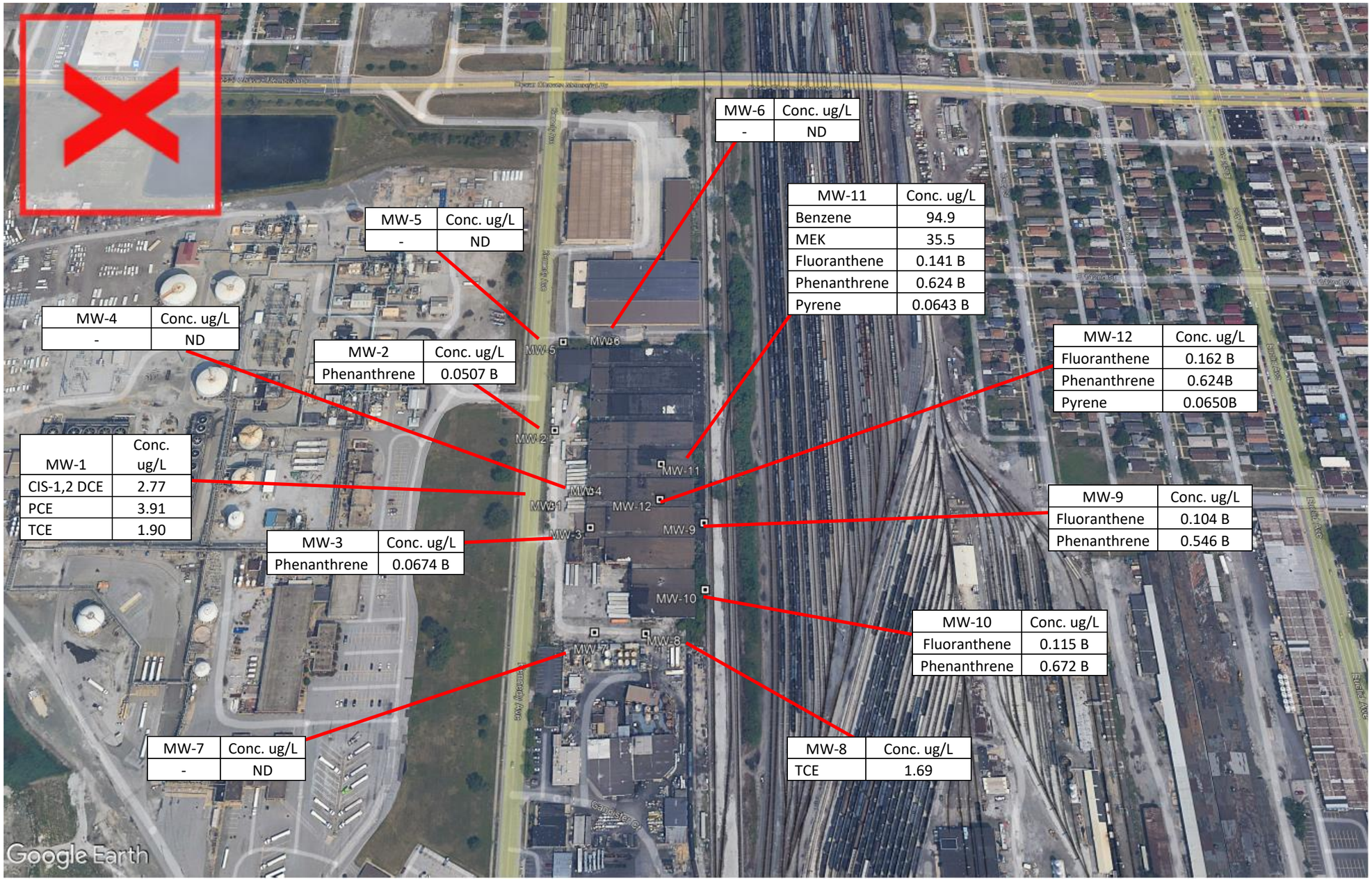

Figure 9
Q2 – 2023
Analytical Concentration Map

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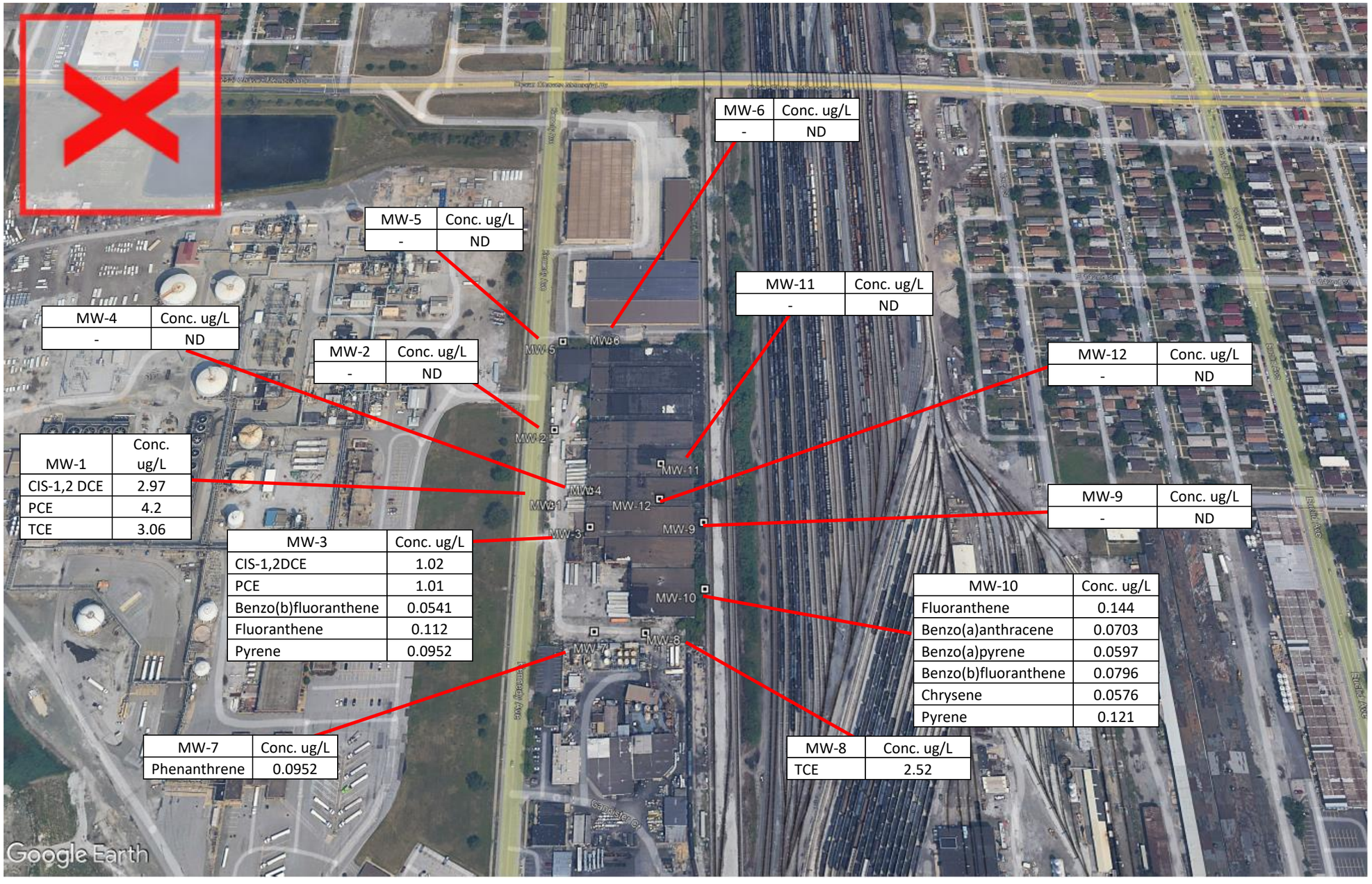

Figure 10
Q3 – 2023
Analytical Concentration Map

Trinity Consultants

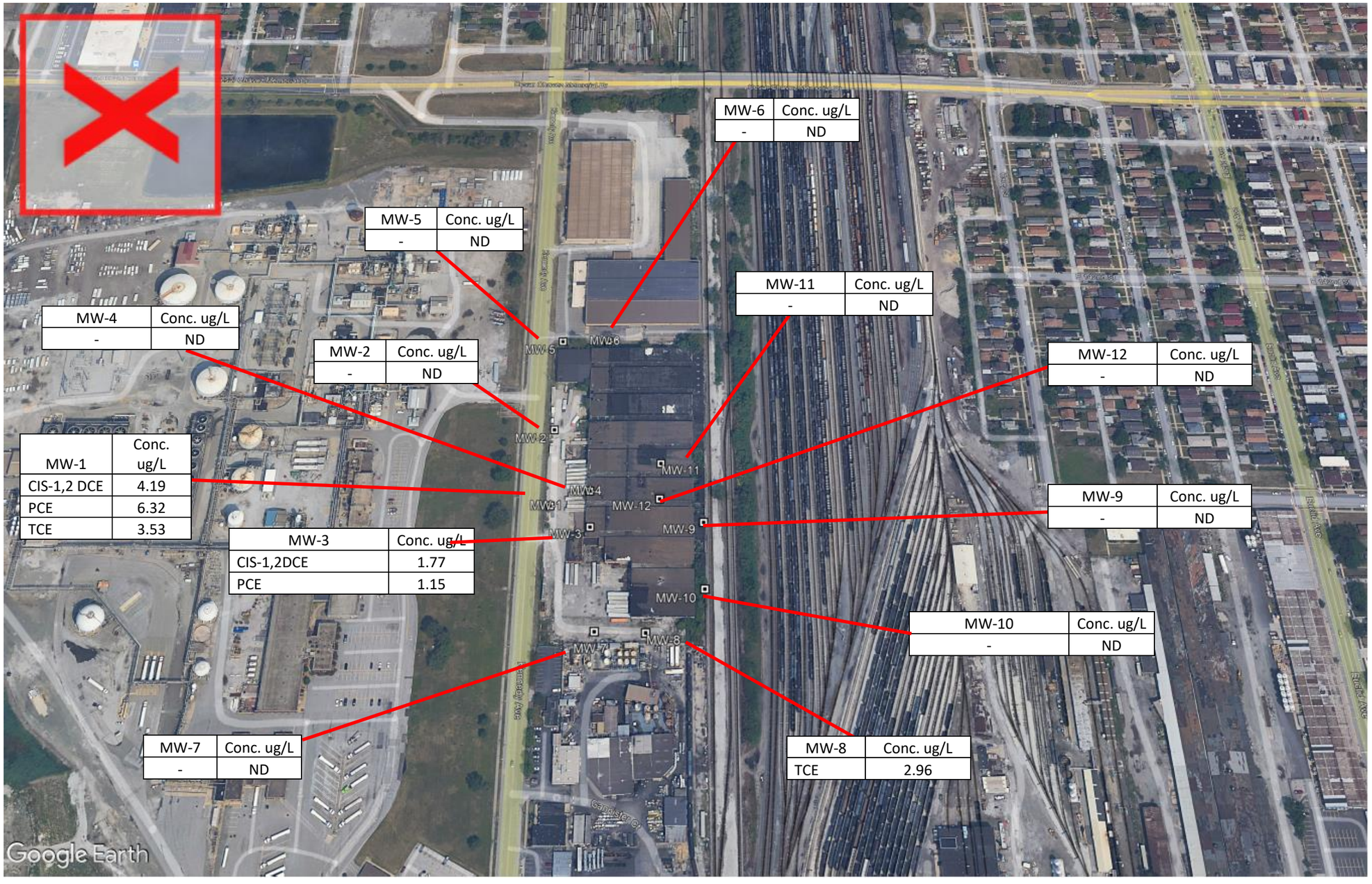

Figure 11
Q4 – 2023
Analytical Concentration Map

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TABLES

Table 1. Monitoring Well Construction

Well ID	Date of Construction	Screen Material	Well Diameter (inches)	Well Depth	Top of Screen	Top of Sand	Top of Bentonite	Top of Concrete	Top of Casing	Top of Casing Elev. (msl)
				Feet below (-) or above (+) ground surface						
MW-1	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.47	589.87
MW-2	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.58	590.08
MW-3	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.66	588.96
MW-4	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+3.05	589.15
MW-5	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.31	590.01
MW-6	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.21	590.51
MW-7	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.60	593.90
MW-8	1-4-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.71	593.41
MW-9	1-5-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.73	592.53
MW-10	1-5-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.74	592.94
MW-11	1-5-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.93	593.13
MW-12	1-5-23	Pre-packed Sch. 40 PVC	1.5	-12	-2	-1	-.25	0	+2.88	592.78

Table 2. Groundwater Elevation Data

January 6, 2023				
Monitoring Well	**Date**	**Top of PVC Inner Casing (ft, msl)**	**Static Water Level Depth from Top of PVC (ft)**	**Groundwater Elevation (ft, msl)**
MW-1	1-6-23	589.87	5.96	583.91
MW-2	1-6-23	590.08	6.41	583.67
MW-3	1-6-23	588.96	4.83	584.13
MW-4	1-6-23	589.15	5.05	584.10
MW-5	1-6-23	590.01	6.49	583.52
MW-6	1-6-23	590.51	6.98	583.53
MW-7	1-6-23	593.90	9.75	584.15
MW-8	1-6-23	593.41	9.10	584.31
MW-9	1-6-23	592.53	7.98	584.55
MW-10	1-6-23	592.94	8.31	584.63
MW-11	1-6-23	593.13	8.81	584.32
MW-12	1-6-23	592.78	8.39	584.39

Table 3. Groundwater Elevation Data

April 5, 2023				
Monitoring Well	**Date**	**Top of PVC Inner Casing (ft, msl)**	**Static Water Level Depth from Top of PVC (ft)**	**Groundwater Elevation (ft, msl)**
MW-1	4-5-23	589.87	5.72	584.15
MW-2	4-4-23	590.08	6.02	584.06
MW-3	4-4-23	588.96	4.16	584.80
MW-4	4-4-23	589.15	4.37	584.78
MW-5	4-5-23	590.01	8.82	581.19
MW-6	4-5-23	590.51	6.12	584.39
MW-7	4-5-23	593.90	8.89	585.01
MW-8	4-5-23	593.41	8.00	585.41
MW-9	4-4-23	592.53	6.61	585.92
MW-10	4-4-23	592.94	7.01	585.93
MW-11	4-4-23	593.13	7.40	585.73
MW-12	4-4-23	592.78	7.07	585.71

Table 4. Groundwater Elevation Data

June 29, 2023				
Monitoring Well	**Date**	**Top of PVC Inner Casing (ft, msl)**	**Static Water Level Depth from Top of PVC (ft)**	**Groundwater Elevation (ft, msl)**
MW-1	6/29/23	589.87	6.28	583.59
MW-2	6/29/23	590.08	6.72	583.36
MW-3	6/29/23	588.96	5.29	583.67
MW-4	6/29/23	589.15	5.53	583.62
MW-5	6/28/23	590.01	6.78	583.23
MW-6	6/28/23	590.51	7.26	583.25
MW-7	6/29/23	593.90	10.22	583.68
MW-8	6/28/23	593.41	9.46	583.95
MW-9	6/28/23	592.53	8.62	583.91
MW-10	6/28/23	592.94	8.98	583.96
MW-11	6/28/23	593.13	9.36	583.77
MW-12	6/28/23	592.78	8.95	583.83

Table 5. Groundwater Elevation Data

September 27-28, 2023				
Monitoring Well	**Date**	**Top of PVC Inner Casing (ft, msl)**	**Static Water Level Depth from Top of PVC (ft)**	**Groundwater Elevation (ft, msl)**
MW-1	9/27/23	589.87	5.76	584.11
MW-2	9/27/23	590.08	6.19	583.89
MW-3	9/27/23	588.96	4.45	584.51
MW-4	9/27/23	589.15	4.63	584.52
MW-5	9/27/23	590.01	6.05	583.96
MW-6	9/27/23	590.51	6.39	584.12
MW-7	9/28/23	593.90	9.30	584.60
MW-8	9/28/23	593.41	8.32	585.09
MW-9	9/28/23	592.53	7.22	585.31
MW-10	928/23	592.94	7.53	585.41
MW-11	9/28/23	593.13	8.04	585.09
MW-12	9/28/23	592.78	7.69	585.09

Table 6
Groundwater Results Summary Q1/2023

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID													
			MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	FB 01	DUP 01
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	**0.130 J**	**0.101 J**	ND	**0.116 J**	**0.097 J**	ND	**0.138 J**	**0.190 J**	ND	ND	ND	ND	ND	**0.136 J**
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**2.72**	ND	**0.856 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.64**
trans-1,2-Dichloroethene	70	0.149	ND	ND	**0.221 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	**0.516 J**	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	**6.01**	ND	**0.837 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.79**
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**2.43**	ND	**0.616 J**	ND	ND	ND	ND	**1.58**	ND	ND	ND	ND	ND	**2.02**	
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																	
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	**0.0269 J**	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	**0.0239 J**	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	ND	**0.0310 J**	ND	ND	**0.0540 J**	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	ND	ND	**0.0315 J**	ND	ND	**0.0639**	ND	ND	ND	**0.0183 J**	**0.0199 J**	ND	ND	
Pyrene	120	0.0169	ND	ND	**0.0185 J**	**0.0406 J**	ND	ND	**0.054**	ND	ND	ND	ND	**0.0200 J**	ND	ND	
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

ND = Not Detected Above Laboratory MDL

Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Table 7
Groundwater Results Summary-Q2/2023

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID													
			MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	FB Q2	DUP 01 Q2
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**94.9**	ND	ND	**125**
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**2.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	70	0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**35.5**	ND	ND	**33.5**
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	**3.91**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**1.90**	ND	ND	ND	ND	ND	ND	**1.69**	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	ND	ND	ND	ND	ND	ND	**0.104B**	**0.115B**	**0.141B**	**0.162B**	ND	**0.155B**
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	**0.0507B**	**0.0674B**	ND	ND	ND	ND	ND	**0.546B**	**0.672B**	**0.696B**	**0.624B**	ND	**0.640B**
Pyrene	120	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0643B**	**0.0650B**	ND	**0.0533B**
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

B= Same analyte found in the associated blank

ND = Not Detected Above Laboratory MDL

Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Table 8
Groundwater Results Summary-Q3/2023

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID													
			MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	FB Q3	DUP 01 Q3/MW-8
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**2.97**	ND	**1.02**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	70	0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	**4.2**	ND	**1.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**3.06**	ND	ND	ND	ND	ND	ND	**2.52**	ND	ND	ND	ND	ND	**2.54**
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0703**	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0597**	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	**0.0541**	ND	ND	ND	ND	ND	ND	**0.0796**	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0576**	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	**0.112**	ND	ND	ND	ND	ND	ND	**0.144**	ND	ND	ND	ND
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	ND	ND	ND	ND	ND	**0.062**	ND	ND	ND	ND	ND	ND	ND
Pyrene	120	0.0169	ND	ND	**0.0952**	ND	ND	ND	ND	ND	ND	**0.121**	ND	ND	ND	ND
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

B= Same analyte found in the associated blank

ND = Not Detected Above Laboratory MDL

Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Table 9
Groundwater Results Summary-Q4/2023

Constituents	IDEM Screening Level	Lab (MDL)	Sample ID													
			MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	FB Q4	DUP 01 Q4/MW-3
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**4.19**	ND	**1.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.59**
trans-1,2-Dichloroethene	70	0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	**6.32**	ND	**1.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.03**
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**3.53**	ND	ND	ND	ND	ND	ND	**2.96**	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	120	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.

B= Same analyte found in the associated blank

ND = Not Detected Above Laboratory MDL

Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Table 10
Groundwater Results Summary Q1-Q4/2023

Constituents	IDEM Screening Level	Lab (MDL)	MW-1 Q1	MW-1 Q2	MW-1 Q3	MW-1 Q4	MW-2 Q1	MW-2 Q2	MW-2 Q3	MW-2 Q4	MW-3 Q1	MW-3 Q2	MW-3 Q3	MW-3 Q4	MW-4 Q1	MW-4 Q2	MW-4 Q3	MW-4 Q4	MW-5 Q1	MW-5 Q2	MW-5 Q3	MW-5 Q4	MW-6 Q1	MW-6 Q2	MW-6 Q3	MW-6 Q4
VOCs 8260B	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	18,000	11.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein		2.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile		0.671	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	0.0941	**0.130 J**	ND	ND	ND	**0.101 J**	ND	ND	ND	ND	ND	ND	ND	**0.116 J**	ND	ND	ND	**0.097 J**	ND	ND	ND	ND	ND	ND	ND
Bromobenzene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane		0.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform		0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		0.605	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	1,000	0.157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	2,000	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene		0.127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride		0.128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene		0.116	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane		0.140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		0.192	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane		0.960	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene		0.106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene		0.114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane		0.276	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane		0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane		0.374	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		0.100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		0.0819	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		0.188	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70	0.126	**2.72**	**2.77**	**1.02**	4.19	ND	ND	ND	ND	**0.856 J**	ND	**1.02**	**1.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	70	0.149	ND	ND	ND	ND	ND	ND	ND	ND	**0.221 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene		0.142	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane		0.110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene		0.111	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane		0.161	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-isopropyl ether		0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		0.137	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene		0.337	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	__	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene		0.120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5,600	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride		0.430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)		0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether		0.101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	660	0.0993	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene		0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane		0.147	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane		0.133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane		0.180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5 or 11	0.300	6.01	**3.91**	**4.2**	**6.32**	ND	ND	ND	ND	**0.837 J**	ND	**1.01**	**1.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	0.278	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene		0.230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		0.481	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		0.149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		0.158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	0.190	**2.43**	**1.90**	**3.06**	**3.53**	ND	ND	ND	ND	**0.616 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane		0.160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane		0.237	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethylbenzene	55	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene		0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride		0.234	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	10,000	0.174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs 8270 SIM																										
Anthracene	1,800	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	530	0.0190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	__	0.0171	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.3	0.0203	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1.8	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	2.5	0.0168	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0541**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	__	0.0184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	25	0.0202	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	250	0.0179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.25	0.0160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	800	0.0270	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.112**	ND	**0.0310 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	290	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	2.5	0.0158	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.2	0.0917	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	__	0.0180	ND	ND	ND	ND	ND	**0.0507B**	ND	ND	ND	**0.0674B**	ND	ND	**0.0315 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	120	0.0169	ND	ND	ND	ND	ND	ND	ND	ND	**0.0185 J**	ND	**0.0952**	ND	**0.0406 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	11	0.0687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	36	0.0674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	750	0.0682	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

J = The indentification of the analyte is acceptable; the reported value is an estimate.
B= Same analyte found in the associated blank.
ND = Not Detected Above Laboratory MDL
Concentration exceeds IDEM Screening Level for Tap Water or Maximum Contaminant Level.

Sample ID

MW-7 Q1	MW-7 Q2	MW-7 Q3	MW-7 Q4	MW-8 Q1	MW-8 Q2	MW-8 Q3	MW-8 Q4	MW-9 Q1	MW-9 Q2	MW-9 Q3	MW-9 Q4	MW-10 Q1	MW-10 Q2	MW-10 Q3	MW-10 Q4	MW-11 Q1	MW-11 Q2	MW-11 Q3	MW-11 Q4	MW-12 Q1	MW-12 Q2	MW-12 Q3	MW-12 Q4
ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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0.0540 J	ND	ND	ND	ND	ND	ND	ND	ND	**0.104B**	ND	ND	ND	**0.115B**	**0.144**	ND	ND	**0.141B**	ND	ND	ND	**0.162B**	ND	ND
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0.0639	ND	**0.062**	ND	ND	ND	ND	ND	ND	**0.546B**	ND	ND	ND	**0.672B**	ND	ND	**0.0183 J**	**0.696B**	ND	ND	**0.0199 J**	**0.624B**	ND	ND
0.054	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.121**	ND	ND	**0.0643B**	ND	ND	**0.0200 J**	**0.0650B**	ND	ND
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APPENDIX A. PHOTOGRAPHIC LOG

1. Shallow augering at MW-1

2. View of pre-packed well screen and riser pipe

Osharai Indiana Site
Phase II Groundwater Investigation Work Plan
4323 Kennedy Ave
East Chicago, IN 46312

Trinity Consultants

3. View of well advancement at MW-1

4. View of filler sand and bentonite chips used at each well location

5. View of MW-1

6. View of MW-2 location looking south

7. View of MW-2

8. View of MW-5 location looking west

9. View of MW-5

10. View of MW-6 location looking west

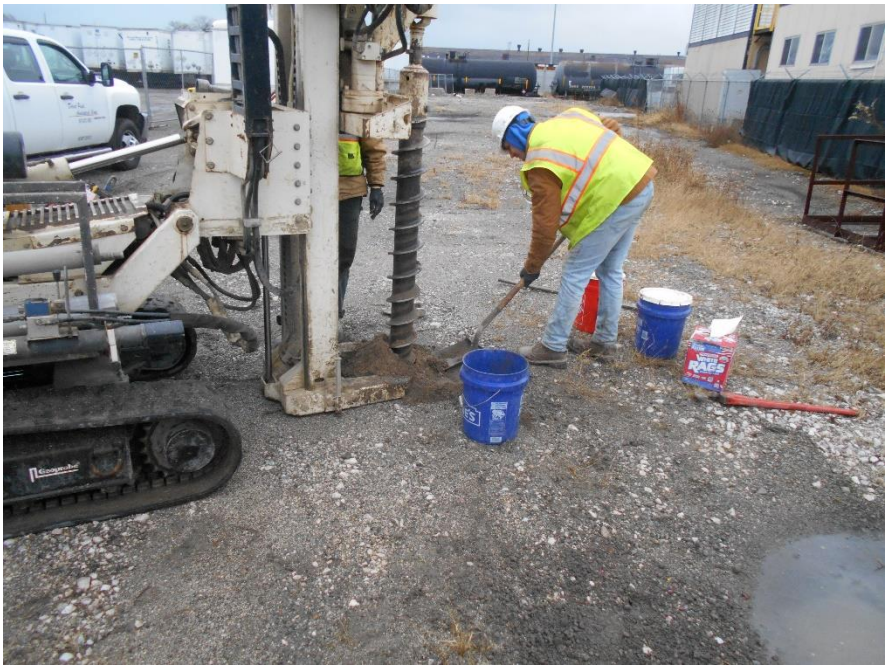
11. View of MW-6

12. View of MW-3 location looking southwest

13. View of MW-3

14. View of MW-4 location looking north

15. View of MW-4



16. View of MW-7 location looking east

17. View of MW-7

18. View of MW-8 looking south

19. View of MW-9 location looking north

20. View of typical coal ash fill material

21. View of MW-9

22. View of MW-10 location looking south

Osharai Indiana Site
Phase II Groundwater Investigation Work Plan
4323 Kennedy Ave
East Chicago, IN 46312

Trinity Consultants

23. View of MW-10

24. View of typical monitoring well development set up

25. View of MW-11

26. View of MW-12

APPENDIX B. MONITORING WELL LOCATION COORDINATES

DLZ
ARCHITECTURE • ENGINEERING • PLANNING
SURVEYING • CONSTRUCTION SERVICES

INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

Project Name: Trinity Consultants: Mon Well Survey - Tradebe East Chicago
DLZ Project No: 2250-8243-90
Site Address: 4323 Kennedy Avenue - East Chicago, IN

DESIGNATION	COORDINATES		ELEVATIONS	
	LATITUDE	LONGITUDE	T/CASING	GROUND
MW-1	N41°38'07.32162"	W87°27'41.43149"	589.87	587.4
MW-2	N41°38'09.43422"	W87°27'41.41987"	590.08	587.5
MW-3	N41°38'06.74992"	W87°27'40.07294"	588.96	586.3
MW-4	N41°38'07.71884"	W87°27'40.12917"	589.15	586.1
MW-5	N41°38'12.06623"	W87°27'41.28788"	590.01	587.7
MW-6	N41°38'12.07882"	W87°27'39.67253"	590.51	588.3
MW-7	N41°38'04.07971"	W87°27'39.80666"	593.90	591.3
MW-8	N41°38'04.05198"	W87°27'38.17923"	593.41	590.7
MW-9	N41°38'06.87681"	W87°27'36.32052"	592.53	589.8
MW-10	N41°38'05.14900"	W87°27'36.29889"	592.94	590.2
MW-11	N41°38'08.48091"	W87°27'37.75108"	593.13	590.2
MW-12	N41°38'07.50302"	W87°27'37.78519"	592.78	589.9

Site Control was established using Real Time Kinematic GPS methods from the
INDOT CORS Network. Coordinates of wells observed on the north side of the inner PVC Pipe.

Horizontal Datum: North American Datum of 1983 (2011)(2010)

Vertical Datum: Elevations were surveyed relative to NAVD88.

Elevations are expressed in Survey Feet.

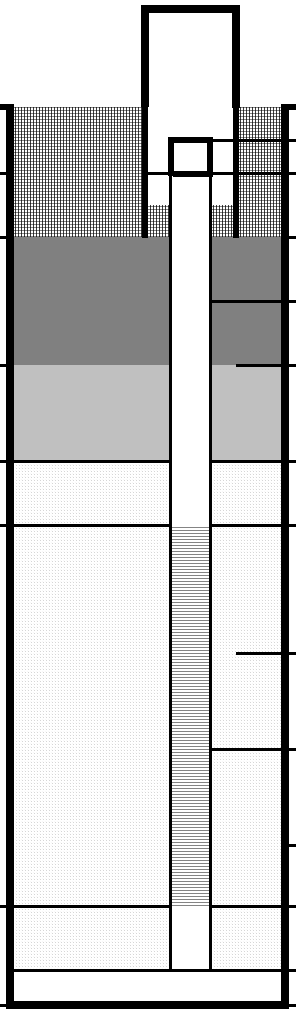
Prepared by: Anthony Toscani, PS
Indiana Professional Land Surveyor No. LS20600010
Date: 2023-01-10

APPENDIX C. MONITORING WELL CONSTRUCTION DIAGRAMS

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-1**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 5.96' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 587.4 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 589.87 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.47	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

C:\Users\MTahghighi\Trinity Consultants, Inc\Tradebe - 222601.0143-VRP Phase II Groundwater Investigation\Working Files\Well Info\Monitoring Well Construction Diagram-MW-1Monitoring Well Construction Diagram-MW-1

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-1" is located at the E. portion of the site near access gate along the road near fence, see attached map.

4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6354
UTM Easting -87.4615
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*: 4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5 Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to	Installation method	No. of bags used
Granular bentonite	0	1	Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to	Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

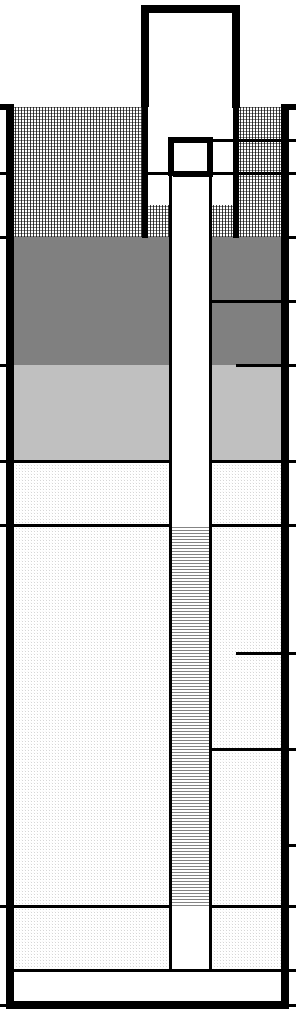
Date: 1/13/2023

Trinity Consultants

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-2**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 6.41' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 587.5 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 590.08 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.58	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-2Monitoring Well Construction Diagram-MW-2

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-2" is located at the E. portion of the site near access gate along the road near fence, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6359
UTM Easting -87.4615
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

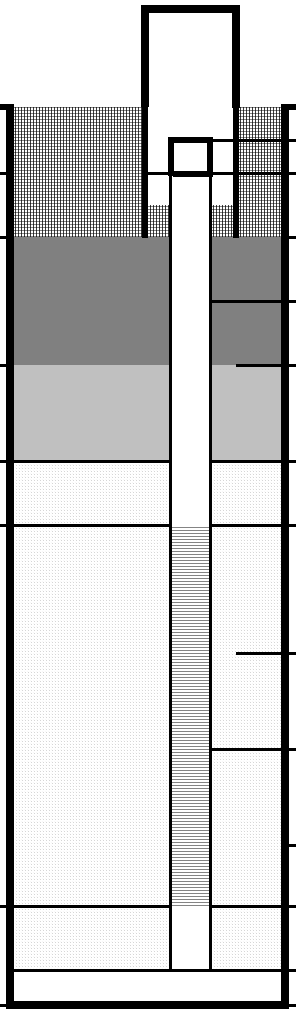
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-3**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 4.83' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 586.3 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 588.96 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.66	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

C:\Users\MTahghighi\Trinity Consultants, Inc\Tradebe - 222601.0143-VRP Phase II Groundwater Investigation\Working Files\Well Info\Monitoring Well Construction Diagram-MW-3Monitoring Well Construction Diagram-MW-3

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).* Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-3" is located at central portion of the site to the E of the entrance gate, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6353
UTM Easting -87.4612
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*: 4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to	Installation method	No. of bags used
Granular bentonite	0	1	Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to	Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

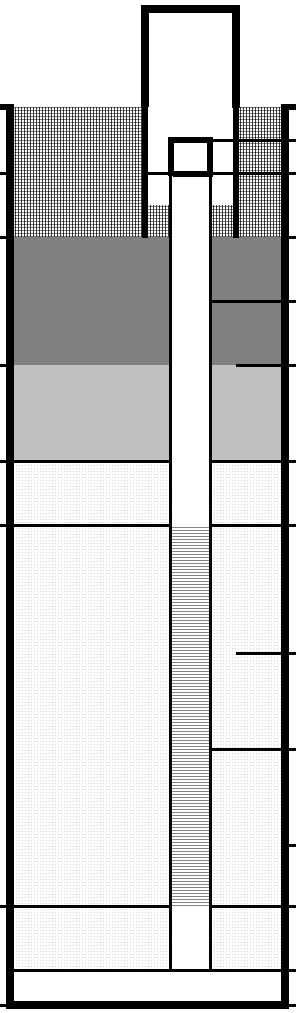
Date: 1/13/2023

Trinity Consultants

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-4**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 5.05' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 586.1 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 589.15 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
3.05	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-4Monitoring Well Construction Diagram-MW-4

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-4" is located at central portion of the site to the E of the entrance gate, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6357
UTM Easting -87.4612
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other:1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

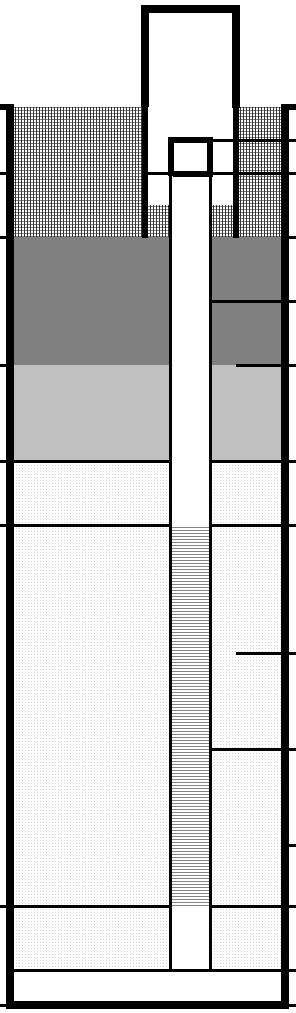
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-5**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 6.49' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 587.7 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 590.01 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.31	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

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RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-5" is located at NW corner of the site, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6367
UTM Easting -87.4615
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to	Installation method	No. of bags used
Granular bentonite	0	1	Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to	Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

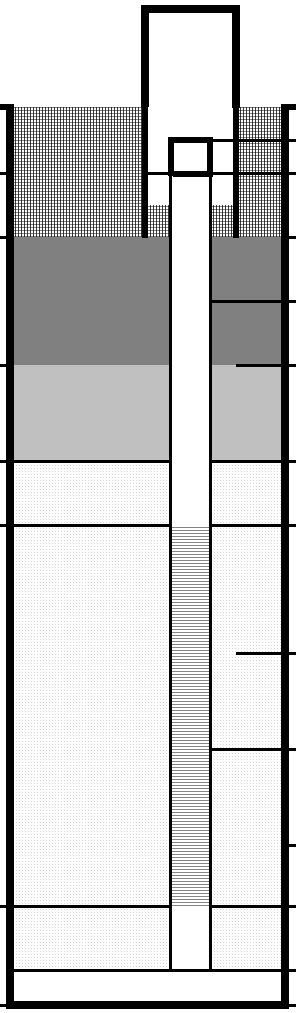
Date: 1/13/2023

Trinity Consultants

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-6**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 6.98' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 588.3 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 590.51 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.21	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-6Monitoring Well Construction Diagram-MW-6

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-6" is located at NW corner of the site, about 175' E of road, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6367
UTM Easting -87.461
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

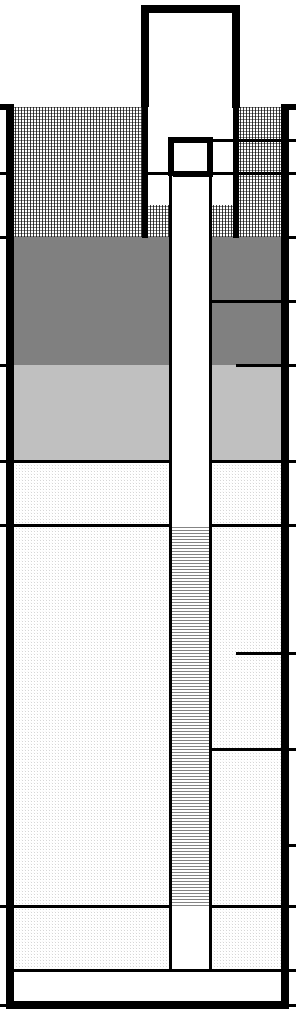
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-7**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 9.75' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 591.3 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 593.90 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.6	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-7Monitoring Well Construction Diagram-MW-7

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-7" is located at the south side of the site, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6345
UTM Easting -87.4608
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

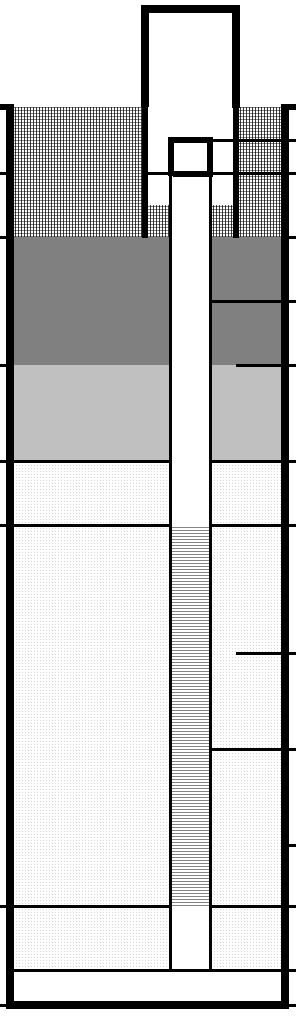
Date: 1/13/2023

Trinity Consultants

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-8**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 9.10' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 590.7 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 593.41 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/4/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/4/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.71	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-8Monitoring Well Construction Diagram-MW-8

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-8" is located at the south side of the site, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6345
UTM Easting -87.4605
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/4/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to	Installation method	No. of bags used
Granular bentonite	0	1	Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to	Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

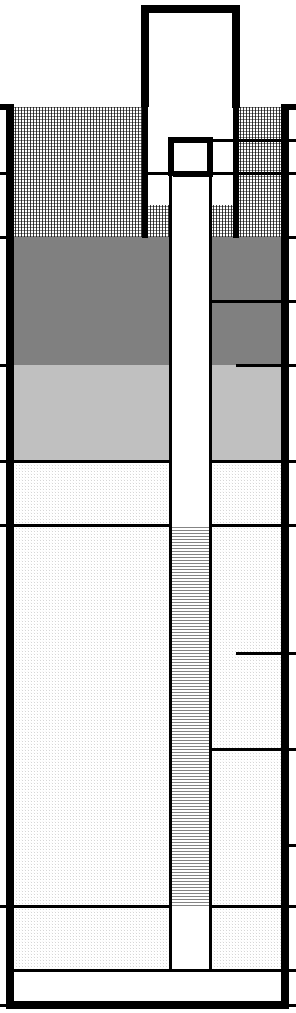
Date: 1/13/2023

Trinity Consultants

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-9**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 7.98' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 589.8 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 592.53 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/5/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/5/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.73	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-9Monitoring Well Construction Diagram-MW-9

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-9" is located at the southeast side of the site near railroad tracks, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6355
UTM Easting -87.46
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*: 4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/5/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

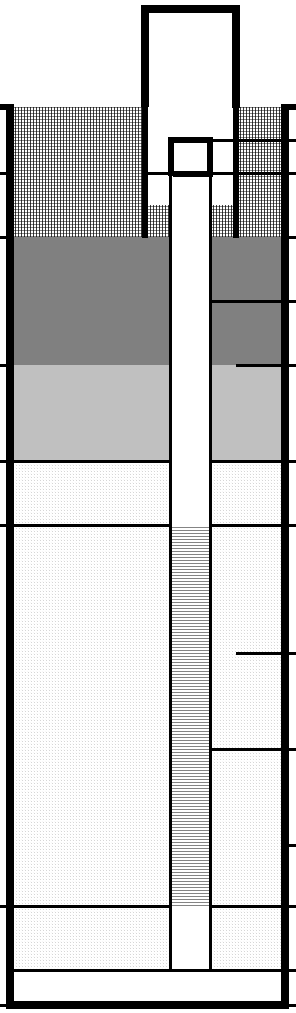
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-10**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 8.31' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 590.2 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 592.94 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/5/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/5/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.74	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

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RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-10" is located at the southeast side of the site near railroad tracks, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6347
UTM Easting -87.46
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/5/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

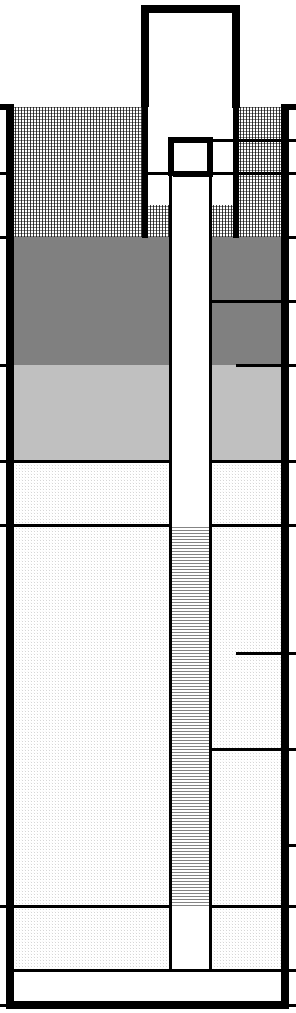
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-11**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 8.81' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 590.2 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 593.13 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/5/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/5/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.93	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-11Monitoring Well Construction Diagram-MW-11

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-11" is located at the central portion of the site, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6357
UTM Easting -87.4605
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/5/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to	Installation method	No. of bags used
Granular bentonite	0	1	Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to	Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

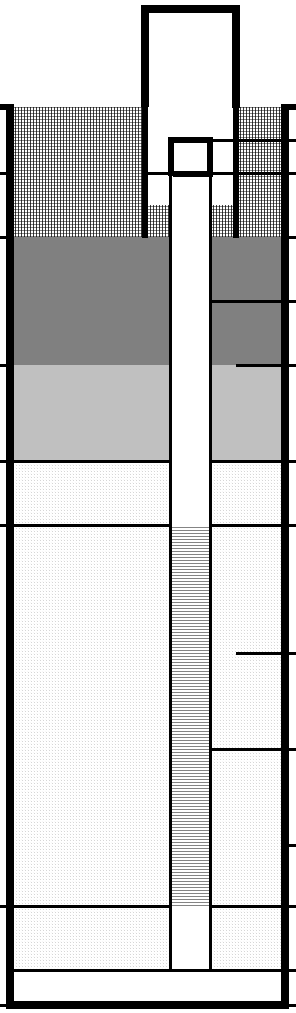
Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

MONITORING WELL CONSTRUCTION DIAGRAM

CLIENT: Tradebe East Chicago	**WELL NO.: MW-12**
PROJECT: Osharai Indiana Site	**WELL DIAMETER:** 1.5-inch
4323 Kennedy Ave., East Chicago, IN	**WELL DEPTH: 12'**
PROJECT NO.:222601.0143	**WATER LEVEL: 8.39' TOC**
SITE ENG./GEOL:Doug Abeln	**SURFACE ELEV.: 589.9 msl**
PROJECT MGR.: Doug Abeln	**TOP OF WELL ELEV.: 592.78 msl**
CONTRACTOR: Direct Push	**DEVELOPMENT DATE: 1/5/23**
DATE STARTED: 1/5/23	**DEVELOPMENT METHOD: purge 5 well volumes**
DATE COMPLETED: 1/5/23	**PURPOSE OF WELL:** Monitoring

DEPTHS ARE RELATIVE TO GROUND SURFACE



DEPTH		**Material Details**
	Locking Well Cap	
2.88	**Top of Well**	
-0.25	**Top of Bentonite Seal**	
	Well Riser	1.5" i.d. Schedule 40 PVC
-0.83	**Top of Sand Pack**	No. 5 silca sand
-1.83	**Top of Well Screen**	
	Silica Sand Pack	No. 1 silica sand
	Well Screen	1.50" i.d. Schedule 40, 0.010" slotted, flush threaded PVC pre-packed screen
	3.25" Borehole Dia.	
-11.83	**Bottom of Screen**	
-12	**Bottom of Well**	bottom slip cap-2"
-12	**Bottom of Borehole**	

https://tciusa.sharepoint.com/sites/Tradebe/Shared Documents/IN East Chicago/222601.0143-VRP Phase II Groundwater Investigation/Working Files/Well Info/Monitoring Well Construction Diagram-MW-12Monitoring Well Construction Diagram-MW-12

RECORD OF WATER WELL

State Form 35680 (R5 / 9-04)

Driller--Mail complete record in 30 days to:
INDIANA DEPT. OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Rm. W264
Indianapolis, IN 46204-2641
(877) 928-3755 toll-free or (317) 232-4160

County Permit Number:
DNR Variance Number:
Include if applicable

Fill in completely

WELL LOCATION

County where drilled	Civil township name	Township number (N-S)	Range number (E-W)	Section
Lake	City limits of East Chicago, IN	T37N	R9W	28

Driving directions to the well location (*include trip origin, street & road names, intersecting roads, and compass directions).*
Show well address below and subdivision in box at lower right. There is space for a map on the reverse side.

Monitoring well "MW-12" is located at the central portion of the site, see attached map.

Well address: 4323 Kennedy Avenue, East Chicago, IN 46312

UTM Northing 41.6354
UTM Easting -87.4605
Datum ☐ NAD 27 ☐ NAD 83
GPS used

Subdivision name & lot number (if applicable)
Former Smelting Facility

If drilled for water supply, this well is: ☐ First well on property ☐ Replacement well ☐ Additional well on property ☐ Dry hole

OWNER - CONTRACTOR

Well owner--name	Telephone number
Tradebe Environmental Services	219-746-8713

Address *(number and street, city, state, ZIP code)*
4343 Kennedy Ave., East Chicago, IN 46312

Building contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number

Drilling contractor--name	Address *(number and street, city, state, ZIP code)*	Telephone number
Direct Push Analtyical Corp.	1221 Oberting Road, Lawrenceburg, IN 47025	812-537-9140

Equipment operator--name	License number of operator	**Date of well completion**
Kevin Collins	2084 WD	1/5/2023

CONSTRUCTION DETAILS

Use of well
☐ Home
☐ Public supply
☐ Industrial / commercial
☐ Livestock
☐ Irrigation
X Monitoring / environ.
☐ Test hole
Other: _____

Drilling method
☐ Rotary
☐ Reverse rotary
☐ Cable tool
☐ Jet
☐ Bucket / bore
☐ Auger (including HSA)
X Direct push
Other: _____

Type of pump
☐ Submersible
☐ Shallow-well jet
☐ Deep-well jet
☐ No pump installed
Other: _____

Pump depth setting (feet)

Total depth of well (feet)	12	**Borehole diameter** (in.)	3.25	**Gravel pack inserted**	X Yes ☐ No
Casing length (feet)	2	**Casing diameter** (in.)	1.5	**Casing material** Other: _____	X PVC ☐ Steel
Screen length (feet)	10	**Screen diameter** (in.)	1.5	**Screen material** Other: 1.5-Inch Prepack	☐ PVC ☐ Steel
Screen slot size	0.01	**Water quality** (clear, odor, etc.)			

WELL CAPACITY TEST

Test method	**Static level** below surface	**Gallons per min.**	**Hours tested**	**Drawdown** (change in level)
☐ Air ☐ Bailing ☐ Pumping	feet			feet

GROUTING

Grout material	Grout depth from	to
Granular bentonite	0	1

Installation method	No. of bags used
Gravity	0.25

WELL ABANDONMENT

Sealing material	Depth filled from	to

Installation method	No. of bags used

WELL LOG

FORMATIONS: Type of material	From (feet)	To (feet)
FILL, gravel, debirs, soil	0	3
Black coal ash material	3	5
SAND, fine grained, tan, loose	5	12

Additional space for well log and comments on reverse side

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of **drilling contractor** or authorized representative MUST BE SIGNED OR STAMPED

Date: 1/13/2023

APPENDIX D. LABORATORY REPORTS

ANALYTICAL REPORT

January 12, 2023

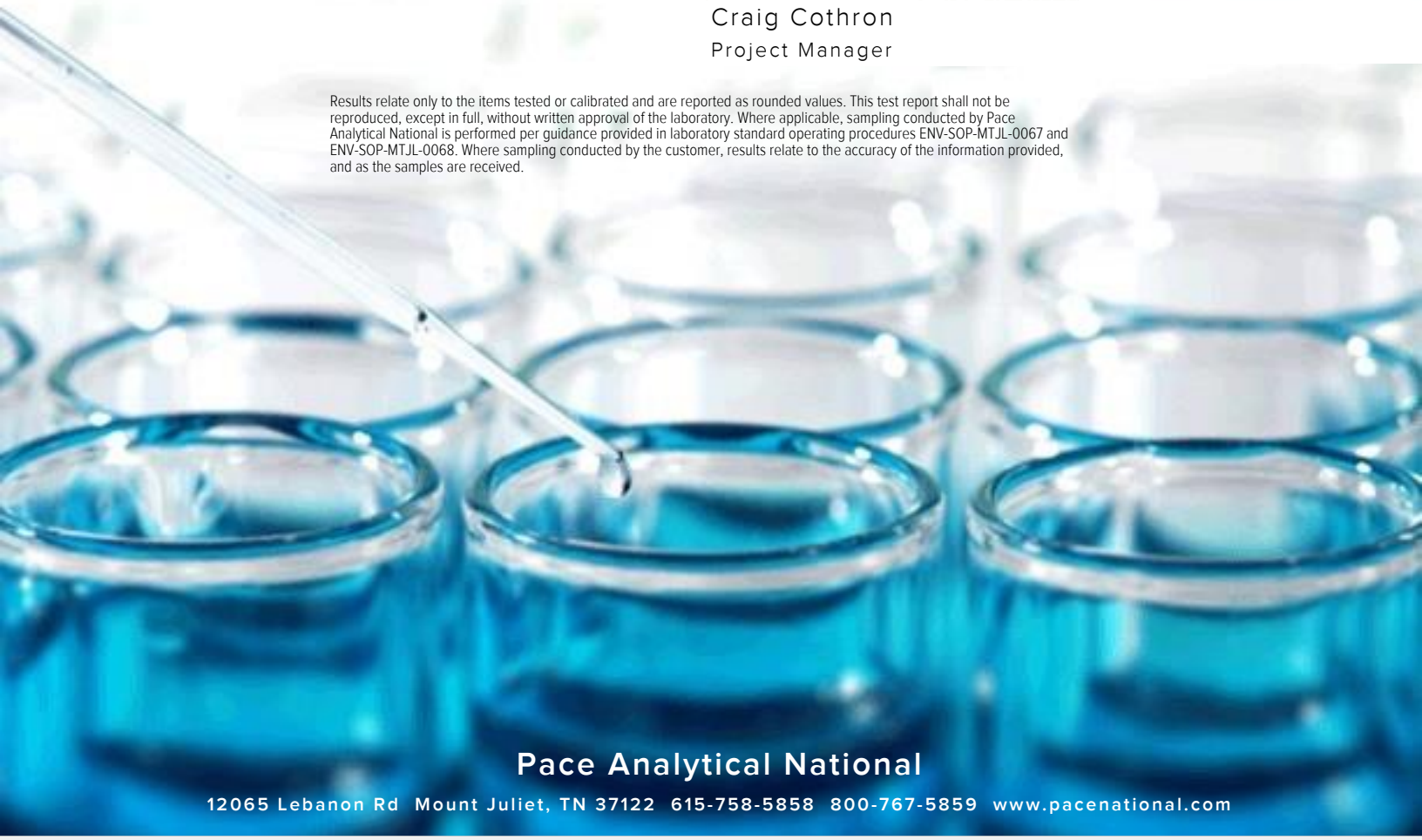
Trinity Consultants

Sample Delivery Group:	L1573837
Samples Received:	01/07/2023
Project Number:	222601.0143
Description:	Osharai Indiana

Report To: Mr. Doug Abeln
16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Entire Report Reviewed By:

Craig Cothron
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1573837-01 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 08:46 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 03:03	01/09/23 03:03	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 11:13	JDJ	Mt. Juliet, TN

MW-2 L1573837-02 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 10:09 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 03:24	01/09/23 03:24	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 11:30	JDJ	Mt. Juliet, TN

MW-3 L1573837-03 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 08:19 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 03:45	01/09/23 03:45	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 11:48	JDJ	Mt. Juliet, TN

MW-4 L1573837-04 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 07:53 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 04:05	01/09/23 04:05	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 12:05	JDJ	Mt. Juliet, TN

MW-5 L1573837-05 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 10:40 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 04:26	01/09/23 04:26	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 12:22	JDJ	Mt. Juliet, TN

MW-6 L1573837-06 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 11:00 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 04:47	01/09/23 04:47	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 12:40	JDJ	Mt. Juliet, TN

MW-7 L1573837-07 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 09:15 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 05:07	01/09/23 05:07	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985190	1	01/09/23 19:18	01/10/23 12:57	JDJ	Mt. Juliet, TN

MW-8 L1573837-08 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 09:40 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 05:28	01/09/23 05:28	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 14:14	DSH	Mt. Juliet, TN

MW-9 L1573837-09 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 12:00 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 05:49	01/09/23 05:49	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 14:54	DSH	Mt. Juliet, TN

MW-10 L1573837-10 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 11:30 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 06:09	01/09/23 06:09	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 15:13	DSH	Mt. Juliet, TN

MW-11 L1573837-11 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 12:30 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 06:29	01/09/23 06:29	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 15:33	DSH	Mt. Juliet, TN

MW-12 L1573837-12 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 12:51 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 06:50	01/09/23 06:50	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 15:53	DSH	Mt. Juliet, TN

DUP01 L1573837-13 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 11:30 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 07:10	01/09/23 07:10	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 16:13	DSH	Mt. Juliet, TN

FB-01 L1573837-14 GW

Collected by: Doug Abeln | Collected date/time: 01/06/23 00:00 | Received date/time: 01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1985130	1	01/09/23 01:00	01/09/23 01:00	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1985191	1	01/10/23 09:27	01/10/23 14:34	DSH	Mt. Juliet, TN

TRIP BLANK L1573837-15 GW

Collected by	Collected date/time	Received date/time
Doug Abeln	01/06/23 00:00	01/07/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1986939	1	01/11/23 15:25	01/11/23 15:25	DWR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Sample Delivery Group (SDG) Narrative

Analyzed from headspace vial.

Lab Sample ID	Project Sample ID	Method
L1573837-15	TRIP BLANK	8260B

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 03:03	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 03:03	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 03:03	WG1985130
Benzene	0.000130	J	0.0000941	0.00100	1	01/09/2023 03:03	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 03:03	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 03:03	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 03:03	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 03:03	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 03:03	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 03:03	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 03:03	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 03:03	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 03:03	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 03:03	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 03:03	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 03:03	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 03:03	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 03:03	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 03:03	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 03:03	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 03:03	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 03:03	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 03:03	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 03:03	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 03:03	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 03:03	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 03:03	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 03:03	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 03:03	WG1985130
cis-1,2-Dichloroethene	0.00272		0.000126	0.00100	1	01/09/2023 03:03	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 03:03	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 03:03	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 03:03	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 03:03	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 03:03	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 03:03	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 03:03	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 03:03	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 03:03	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 03:03	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 03:03	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 03:03	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 03:03	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 03:03	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 03:03	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 03:03	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 03:03	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 03:03	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 03:03	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 03:03	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 03:03	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 03:03	WG1985130
Tetrachloroethene	0.00601		0.000300	0.00100	1	01/09/2023 03:03	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 03:03	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 03:03	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 03:03	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 03:03	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 03:03	WG1985130
Trichloroethene	0.00243		0.000190	0.00100	1	01/09/2023 03:03	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 03:03	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 03:03	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 03:03	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:03	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:03	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 03:03	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 03:03	WG1985130
(S) Toluene-d8	*107*			*80.0-120*		*01/09/2023 03:03*	WG1985130
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*01/09/2023 03:03*	WG1985130
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*01/09/2023 03:03*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 11:13	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 11:13	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 11:13	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 11:13	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 11:13	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 11:13	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 11:13	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 11:13	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 11:13	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 11:13	WG1985190
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 11:13	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 11:13	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 11:13	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 11:13	WG1985190
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 11:13	WG1985190
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 11:13	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 11:13	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 11:13	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 11:13	WG1985190
(S) Nitrobenzene-d5	*104*			*31.0-160*		*01/10/2023 11:13*	WG1985190
(S) 2-Fluorobiphenyl	*89.0*			*48.0-148*		*01/10/2023 11:13*	WG1985190
(S) p-Terphenyl-d14	*106*			*37.0-146*		*01/10/2023 11:13*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 03:24	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 03:24	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 03:24	WG1985130
Benzene	0.000101	J	0.0000941	0.00100	1	01/09/2023 03:24	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 03:24	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 03:24	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 03:24	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 03:24	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 03:24	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 03:24	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 03:24	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 03:24	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 03:24	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 03:24	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 03:24	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 03:24	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 03:24	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 03:24	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 03:24	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 03:24	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 03:24	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 03:24	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 03:24	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 03:24	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 03:24	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 03:24	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 03:24	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 03:24	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 03:24	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 03:24	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 03:24	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 03:24	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 03:24	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 03:24	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 03:24	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 03:24	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 03:24	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 03:24	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 03:24	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 03:24	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 03:24	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 03:24	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 03:24	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 03:24	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 03:24	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 03:24	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 03:24	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 03:24	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 03:24	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 03:24	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 03:24	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 03:24	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 03:24	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 03:24	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 03:24	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 03:24	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 03:24	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 03:24	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 03:24	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 03:24	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 03:24	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 03:24	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:24	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:24	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 03:24	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 03:24	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 03:24*	WG1985130
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*01/09/2023 03:24*	WG1985130
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*01/09/2023 03:24*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 11:30	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 11:30	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 11:30	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 11:30	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 11:30	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 11:30	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 11:30	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 11:30	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 11:30	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 11:30	WG1985190
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 11:30	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 11:30	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 11:30	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 11:30	WG1985190
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 11:30	WG1985190
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 11:30	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 11:30	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 11:30	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 11:30	WG1985190
(S) Nitrobenzene-d5	*108*			*31.0-160*		*01/10/2023 11:30*	WG1985190
(S) 2-Fluorobiphenyl	*93.0*			*48.0-148*		*01/10/2023 11:30*	WG1985190
(S) p-Terphenyl-d14	*112*			*37.0-146*		*01/10/2023 11:30*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 03:45	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 03:45	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 03:45	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 03:45	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 03:45	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 03:45	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 03:45	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 03:45	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 03:45	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 03:45	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 03:45	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 03:45	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 03:45	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 03:45	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 03:45	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 03:45	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 03:45	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 03:45	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 03:45	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 03:45	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 03:45	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 03:45	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 03:45	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 03:45	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 03:45	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 03:45	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 03:45	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 03:45	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 03:45	WG1985130
cis-1,2-Dichloroethene	0.000856	J	0.000126	0.00100	1	01/09/2023 03:45	WG1985130
trans-1,2-Dichloroethene	0.000221	J	0.000149	0.00100	1	01/09/2023 03:45	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 03:45	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 03:45	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 03:45	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 03:45	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 03:45	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 03:45	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 03:45	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 03:45	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 03:45	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 03:45	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 03:45	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 03:45	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 03:45	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 03:45	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 03:45	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 03:45	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 03:45	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 03:45	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 03:45	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 03:45	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 03:45	WG1985130
Tetrachloroethene	0.000837	J	0.000300	0.00100	1	01/09/2023 03:45	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 03:45	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 03:45	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 03:45	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 03:45	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 03:45	WG1985130
Trichloroethene	0.000616	J	0.000190	0.00100	1	01/09/2023 03:45	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 03:45	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 03:45	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 03:45	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:45	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 03:45	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 03:45	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 03:45	WG1985130
(S) Toluene-d8	*109*			*80.0-120*		*01/09/2023 03:45*	WG1985130
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*01/09/2023 03:45*	WG1985130
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*01/09/2023 03:45*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 11:48	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 11:48	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 11:48	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 11:48	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 11:48	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 11:48	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 11:48	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 11:48	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 11:48	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 11:48	WG1985190
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 11:48	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 11:48	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 11:48	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 11:48	WG1985190
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 11:48	WG1985190
Pyrene	0.0000185	J	0.0000169	0.0000500	1	01/10/2023 11:48	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 11:48	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 11:48	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 11:48	WG1985190
(S) Nitrobenzene-d5	*104*			*31.0-160*		*01/10/2023 11:48*	WG1985190
(S) 2-Fluorobiphenyl	*90.0*			*48.0-148*		*01/10/2023 11:48*	WG1985190
(S) p-Terphenyl-d14	*109*			*37.0-146*		*01/10/2023 11:48*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 04:05	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 04:05	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 04:05	WG1985130
Benzene	0.000116	J	0.0000941	0.00100	1	01/09/2023 04:05	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 04:05	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 04:05	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 04:05	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 04:05	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 04:05	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 04:05	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 04:05	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 04:05	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 04:05	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 04:05	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 04:05	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 04:05	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 04:05	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 04:05	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 04:05	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 04:05	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 04:05	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 04:05	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 04:05	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 04:05	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 04:05	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 04:05	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 04:05	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 04:05	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 04:05	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 04:05	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 04:05	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 04:05	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 04:05	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 04:05	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 04:05	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 04:05	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 04:05	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 04:05	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 04:05	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 04:05	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 04:05	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 04:05	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 04:05	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 04:05	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 04:05	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 04:05	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 04:05	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 04:05	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 04:05	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 04:05	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 04:05	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 04:05	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 04:05	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 04:05	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 04:05	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 04:05	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 04:05	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 04:05	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 04:05	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 04:05	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 04:05	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 04:05	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:05	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:05	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 04:05	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 04:05	WG1985130
(S) Toluene-d8	*106*			*80.0-120*		*01/09/2023 04:05*	WG1985130
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*01/09/2023 04:05*	WG1985130
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*01/09/2023 04:05*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 12:05	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 12:05	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 12:05	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 12:05	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 12:05	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 12:05	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 12:05	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 12:05	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 12:05	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 12:05	WG1985190
Fluoranthene	0.0000310	J	0.0000270	0.000100	1	01/10/2023 12:05	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 12:05	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 12:05	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 12:05	WG1985190
Phenanthrene	0.0000315	J	0.0000180	0.0000500	1	01/10/2023 12:05	WG1985190
Pyrene	0.0000406	J	0.0000169	0.0000500	1	01/10/2023 12:05	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 12:05	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 12:05	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 12:05	WG1985190
(S) Nitrobenzene-d5	*102*			*31.0-160*		*01/10/2023 12:05*	WG1985190
(S) 2-Fluorobiphenyl	*89.5*			*48.0-148*		*01/10/2023 12:05*	WG1985190
(S) p-Terphenyl-d14	*103*			*37.0-146*		*01/10/2023 12:05*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 04:26	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 04:26	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 04:26	WG1985130
Benzene	0.0000970	J	0.0000941	0.00100	1	01/09/2023 04:26	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 04:26	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 04:26	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 04:26	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 04:26	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 04:26	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 04:26	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 04:26	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 04:26	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 04:26	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 04:26	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 04:26	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 04:26	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 04:26	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 04:26	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 04:26	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 04:26	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 04:26	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 04:26	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 04:26	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 04:26	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 04:26	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 04:26	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 04:26	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 04:26	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 04:26	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 04:26	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 04:26	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 04:26	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 04:26	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 04:26	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 04:26	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 04:26	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 04:26	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 04:26	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 04:26	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 04:26	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 04:26	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 04:26	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 04:26	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 04:26	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 04:26	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 04:26	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 04:26	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 04:26	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 04:26	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 04:26	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 04:26	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 04:26	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 04:26	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 04:26	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 04:26	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 04:26	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 04:26	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 04:26	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 04:26	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 04:26	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 04:26	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 04:26	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:26	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:26	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 04:26	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 04:26	WG1985130
(S) Toluene-d8	*109*			*80.0-120*		*01/09/2023 04:26*	WG1985130
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*01/09/2023 04:26*	WG1985130
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*01/09/2023 04:26*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 12:22	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 12:22	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 12:22	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 12:22	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 12:22	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 12:22	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 12:22	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 12:22	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 12:22	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 12:22	WG1985190
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 12:22	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 12:22	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 12:22	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 12:22	WG1985190
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 12:22	WG1985190
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 12:22	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 12:22	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 12:22	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 12:22	WG1985190
(S) Nitrobenzene-d5	*100*			*31.0-160*		*01/10/2023 12:22*	WG1985190
(S) 2-Fluorobiphenyl	*85.5*			*48.0-148*		*01/10/2023 12:22*	WG1985190
(S) p-Terphenyl-d14	*103*			*37.0-146*		*01/10/2023 12:22*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 04:47	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 04:47	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 04:47	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 04:47	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 04:47	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 04:47	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 04:47	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 04:47	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 04:47	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 04:47	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 04:47	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 04:47	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 04:47	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 04:47	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 04:47	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 04:47	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 04:47	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 04:47	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 04:47	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 04:47	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 04:47	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 04:47	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 04:47	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 04:47	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 04:47	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 04:47	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 04:47	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 04:47	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 04:47	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 04:47	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 04:47	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 04:47	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 04:47	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 04:47	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 04:47	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 04:47	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 04:47	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 04:47	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 04:47	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 04:47	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 04:47	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 04:47	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 04:47	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 04:47	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 04:47	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 04:47	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 04:47	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 04:47	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 04:47	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 04:47	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 04:47	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 04:47	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 04:47	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 04:47	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 04:47	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 04:47	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 04:47	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 04:47	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 04:47	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 04:47	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 04:47	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 04:47	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:47	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 04:47	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 04:47	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 04:47	WG1985130
(S) Toluene-d8	*106*			*80.0-120*		*01/09/2023 04:47*	WG1985130
(S) 4-Bromofluorobenzene	*97.8*			*77.0-126*		*01/09/2023 04:47*	WG1985130
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*01/09/2023 04:47*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 12:40	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 12:40	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 12:40	WG1985190
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 12:40	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 12:40	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 12:40	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 12:40	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 12:40	WG1985190
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 12:40	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 12:40	WG1985190
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 12:40	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 12:40	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 12:40	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 12:40	WG1985190
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 12:40	WG1985190
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 12:40	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 12:40	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 12:40	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 12:40	WG1985190
(S) Nitrobenzene-d5	*103*			*31.0-160*		*01/10/2023 12:40*	WG1985190
(S) 2-Fluorobiphenyl	*91.5*			*48.0-148*		*01/10/2023 12:40*	WG1985190
(S) p-Terphenyl-d14	*109*			*37.0-146*		*01/10/2023 12:40*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 05:07	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 05:07	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 05:07	WG1985130
Benzene	0.000138	J	0.0000941	0.00100	1	01/09/2023 05:07	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 05:07	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 05:07	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 05:07	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 05:07	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 05:07	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 05:07	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 05:07	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 05:07	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 05:07	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 05:07	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 05:07	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 05:07	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 05:07	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 05:07	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 05:07	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 05:07	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 05:07	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 05:07	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 05:07	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 05:07	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 05:07	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 05:07	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 05:07	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 05:07	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 05:07	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 05:07	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 05:07	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 05:07	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 05:07	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 05:07	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 05:07	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 05:07	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 05:07	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 05:07	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 05:07	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 05:07	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 05:07	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 05:07	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 05:07	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 05:07	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 05:07	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 05:07	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 05:07	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 05:07	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 05:07	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 05:07	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 05:07	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 05:07	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 05:07	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 05:07	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 05:07	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 05:07	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 05:07	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 05:07	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 05:07	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 05:07	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 05:07	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 05:07	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:07	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:07	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 05:07	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 05:07	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 05:07*	WG1985130
(S) 4-Bromofluorobenzene	*99.1*			*77.0-126*		*01/09/2023 05:07*	WG1985130
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*01/09/2023 05:07*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 12:57	WG1985190
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 12:57	WG1985190
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 12:57	WG1985190
Benzo(a)anthracene	0.0000269	J	0.0000203	0.0000500	1	01/10/2023 12:57	WG1985190
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 12:57	WG1985190
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 12:57	WG1985190
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 12:57	WG1985190
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 12:57	WG1985190
Chrysene	0.0000239	J	0.0000179	0.0000500	1	01/10/2023 12:57	WG1985190
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 12:57	WG1985190
Fluoranthene	0.0000678	J	0.0000270	0.000100	1	01/10/2023 12:57	WG1985190
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 12:57	WG1985190
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 12:57	WG1985190
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 12:57	WG1985190
Phenanthrene	0.0000639		0.0000180	0.0000500	1	01/10/2023 12:57	WG1985190
Pyrene	0.0000540		0.0000169	0.0000500	1	01/10/2023 12:57	WG1985190
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 12:57	WG1985190
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 12:57	WG1985190
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 12:57	WG1985190
(S) Nitrobenzene-d5	*103*			*31.0-160*		*01/10/2023 12:57*	WG1985190
(S) 2-Fluorobiphenyl	*87.5*			*48.0-148*		*01/10/2023 12:57*	WG1985190
(S) p-Terphenyl-d14	*108*			*37.0-146*		*01/10/2023 12:57*	WG1985190

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 05:28	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 05:28	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 05:28	WG1985130
Benzene	0.000109	J	0.0000941	0.00100	1	01/09/2023 05:28	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 05:28	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 05:28	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 05:28	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 05:28	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 05:28	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 05:28	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 05:28	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 05:28	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 05:28	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 05:28	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 05:28	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 05:28	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 05:28	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 05:28	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 05:28	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 05:28	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 05:28	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 05:28	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 05:28	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 05:28	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 05:28	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 05:28	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 05:28	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 05:28	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 05:28	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 05:28	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 05:28	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 05:28	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 05:28	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 05:28	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 05:28	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 05:28	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 05:28	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 05:28	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 05:28	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 05:28	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 05:28	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 05:28	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 05:28	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 05:28	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 05:28	WG1985130
Methyl tert-butyl ether	0.000516	J	0.000101	0.00100	1	01/09/2023 05:28	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 05:28	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 05:28	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 05:28	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 05:28	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 05:28	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 05:28	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 05:28	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 05:28	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 05:28	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 05:28	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 05:28	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 05:28	WG1985130
Trichloroethene	0.00158		0.000190	0.00100	1	01/09/2023 05:28	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 05:28	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 05:28	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 05:28	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:28	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:28	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 05:28	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 05:28	WG1985130
(S) Toluene-d8	*113*			*80.0-120*		*01/09/2023 05:28*	WG1985130
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*01/09/2023 05:28*	WG1985130
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*01/09/2023 05:28*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 14:14	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 14:14	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 14:14	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 14:14	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 14:14	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 14:14	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 14:14	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 14:14	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 14:14	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 14:14	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 14:14	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 14:14	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 14:14	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 14:14	WG1985191
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 14:14	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 14:14	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 14:14	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 14:14	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 14:14	WG1985191
(S) Nitrobenzene-d5	*107*			*31.0-160*		*01/10/2023 14:14*	WG1985191
(S) 2-Fluorobiphenyl	*98.9*			*48.0-148*		*01/10/2023 14:14*	WG1985191
(S) p-Terphenyl-d14	*83.2*			*37.0-146*		*01/10/2023 14:14*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 05:49	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 05:49	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 05:49	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 05:49	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 05:49	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 05:49	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 05:49	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 05:49	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 05:49	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 05:49	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 05:49	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 05:49	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 05:49	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 05:49	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 05:49	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 05:49	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 05:49	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 05:49	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 05:49	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 05:49	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 05:49	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 05:49	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 05:49	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 05:49	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 05:49	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 05:49	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 05:49	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 05:49	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 05:49	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 05:49	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 05:49	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 05:49	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 05:49	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 05:49	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 05:49	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 05:49	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 05:49	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 05:49	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 05:49	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 05:49	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 05:49	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 05:49	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 05:49	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 05:49	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 05:49	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 05:49	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 05:49	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 05:49	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 05:49	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 05:49	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 05:49	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 05:49	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 05:49	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 05:49	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 05:49	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 05:49	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 05:49	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 05:49	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 05:49	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 05:49	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 05:49	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 05:49	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:49	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 05:49	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 05:49	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 05:49	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 05:49*	WG1985130
(S) 4-Bromofluorobenzene	*94.8*			*77.0-126*		*01/09/2023 05:49*	WG1985130
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*01/09/2023 05:49*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 14:54	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 14:54	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 14:54	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 14:54	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 14:54	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 14:54	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 14:54	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 14:54	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 14:54	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 14:54	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 14:54	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 14:54	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 14:54	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 14:54	WG1985191
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 14:54	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 14:54	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 14:54	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 14:54	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 14:54	WG1985191
(S) Nitrobenzene-d5	*106*			*31.0-160*		*01/10/2023 14:54*	WG1985191
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*01/10/2023 14:54*	WG1985191
(S) p-Terphenyl-d14	*87.9*			*37.0-146*		*01/10/2023 14:54*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 06:09	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 06:09	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 06:09	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 06:09	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 06:09	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 06:09	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 06:09	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 06:09	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 06:09	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 06:09	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 06:09	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 06:09	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 06:09	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 06:09	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 06:09	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 06:09	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 06:09	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 06:09	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 06:09	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 06:09	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 06:09	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 06:09	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 06:09	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 06:09	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 06:09	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 06:09	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 06:09	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 06:09	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 06:09	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 06:09	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 06:09	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 06:09	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 06:09	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 06:09	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 06:09	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 06:09	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 06:09	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 06:09	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 06:09	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 06:09	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 06:09	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 06:09	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 06:09	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 06:09	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 06:09	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 06:09	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 06:09	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 06:09	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 06:09	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 06:09	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 06:09	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 06:09	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 06:09	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 06:09	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 06:09	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 06:09	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 06:09	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 06:09	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 06:09	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 06:09	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 06:09	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 06:09	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:09	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:09	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 06:09	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 06:09	WG1985130
(S) Toluene-d8	*110*			*80.0-120*		*01/09/2023 06:09*	WG1985130
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*01/09/2023 06:09*	WG1985130
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*01/09/2023 06:09*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 15:13	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 15:13	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 15:13	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 15:13	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 15:13	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 15:13	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 15:13	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 15:13	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 15:13	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 15:13	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 15:13	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 15:13	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 15:13	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 15:13	WG1985191
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 15:13	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 15:13	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 15:13	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 15:13	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 15:13	WG1985191
(S) Nitrobenzene-d5	*107*			*31.0-160*		*01/10/2023 15:13*	WG1985191
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*01/10/2023 15:13*	WG1985191
(S) p-Terphenyl-d14	*92.1*			*37.0-146*		*01/10/2023 15:13*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 06:29	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 06:29	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 06:29	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 06:29	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 06:29	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 06:29	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 06:29	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 06:29	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 06:29	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 06:29	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 06:29	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 06:29	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 06:29	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 06:29	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 06:29	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 06:29	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 06:29	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 06:29	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 06:29	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 06:29	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 06:29	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 06:29	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 06:29	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 06:29	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 06:29	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 06:29	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 06:29	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 06:29	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 06:29	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 06:29	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 06:29	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 06:29	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 06:29	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 06:29	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 06:29	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 06:29	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 06:29	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 06:29	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 06:29	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 06:29	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 06:29	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 06:29	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 06:29	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 06:29	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 06:29	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 06:29	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 06:29	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 06:29	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 06:29	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 06:29	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 06:29	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 06:29	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 06:29	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 06:29	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 06:29	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 06:29	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 06:29	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 06:29	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 06:29	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 06:29	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 06:29	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 06:29	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:29	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:29	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 06:29	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 06:29	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 06:29*	WG1985130
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*		*01/09/2023 06:29*	WG1985130
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*01/09/2023 06:29*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 15:33	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 15:33	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 15:33	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 15:33	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 15:33	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 15:33	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 15:33	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 15:33	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 15:33	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 15:33	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 15:33	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 15:33	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 15:33	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 15:33	WG1985191
Phenanthrene	0.0000183	J	0.0000180	0.0000500	1	01/10/2023 15:33	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 15:33	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 15:33	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 15:33	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 15:33	WG1985191
(S) Nitrobenzene-d5	*108*			*31.0-160*		*01/10/2023 15:33*	WG1985191
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*01/10/2023 15:33*	WG1985191
(S) p-Terphenyl-d14	*92.6*			*37.0-146*		*01/10/2023 15:33*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 06:50	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 06:50	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 06:50	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 06:50	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 06:50	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 06:50	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 06:50	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 06:50	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 06:50	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 06:50	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 06:50	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 06:50	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 06:50	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 06:50	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 06:50	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 06:50	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 06:50	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 06:50	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 06:50	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 06:50	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 06:50	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 06:50	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 06:50	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 06:50	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 06:50	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 06:50	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 06:50	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 06:50	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 06:50	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 06:50	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 06:50	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 06:50	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 06:50	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 06:50	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 06:50	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 06:50	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 06:50	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 06:50	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 06:50	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 06:50	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 06:50	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 06:50	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 06:50	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 06:50	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 06:50	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 06:50	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 06:50	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 06:50	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 06:50	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 06:50	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 06:50	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 06:50	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 06:50	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 06:50	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 06:50	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 06:50	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 06:50	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 06:50	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 06:50	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 06:50	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 06:50	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 06:50	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:50	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 06:50	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 06:50	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 06:50	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 06:50*	WG1985130
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*01/09/2023 06:50*	WG1985130
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*01/09/2023 06:50*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 15:53	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 15:53	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 15:53	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 15:53	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 15:53	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 15:53	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 15:53	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 15:53	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 15:53	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 15:53	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 15:53	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 15:53	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 15:53	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 15:53	WG1985191
Phenanthrene	0.0000199	J	0.0000180	0.0000500	1	01/10/2023 15:53	WG1985191
Pyrene	0.0000200	J	0.0000169	0.0000500	1	01/10/2023 15:53	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 15:53	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 15:53	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 15:53	WG1985191
(S) Nitrobenzene-d5	*105*			*31.0-160*		*01/10/2023 15:53*	WG1985191
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*01/10/2023 15:53*	WG1985191
(S) p-Terphenyl-d14	*92.6*			*37.0-146*		*01/10/2023 15:53*	WG1985191

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 07:10	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 07:10	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 07:10	WG1985130
Benzene	0.000136	J	0.0000941	0.00100	1	01/09/2023 07:10	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 07:10	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 07:10	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 07:10	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 07:10	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 07:10	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 07:10	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 07:10	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 07:10	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 07:10	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 07:10	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 07:10	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 07:10	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 07:10	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 07:10	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 07:10	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 07:10	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 07:10	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 07:10	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 07:10	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 07:10	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 07:10	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 07:10	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 07:10	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 07:10	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 07:10	WG1985130
cis-1,2-Dichloroethene	0.00264		0.000126	0.00100	1	01/09/2023 07:10	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 07:10	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 07:10	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 07:10	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 07:10	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 07:10	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 07:10	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 07:10	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 07:10	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 07:10	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 07:10	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 07:10	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 07:10	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 07:10	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 07:10	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 07:10	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 07:10	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 07:10	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 07:10	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 07:10	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 07:10	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 07:10	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 07:10	WG1985130
Tetrachloroethene	0.00479		0.000300	0.00100	1	01/09/2023 07:10	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 07:10	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 07:10	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 07:10	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 07:10	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 07:10	WG1985130
Trichloroethene	0.00202		0.000190	0.00100	1	01/09/2023 07:10	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 07:10	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 07:10	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 07:10	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 07:10	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 07:10	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 07:10	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 07:10	WG1985130
(S) Toluene-d8	*113*			*80.0-120*		*01/09/2023 07:10*	WG1985130
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*01/09/2023 07:10*	WG1985130
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*01/09/2023 07:10*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 16:13	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 16:13	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 16:13	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 16:13	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 16:13	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 16:13	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 16:13	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 16:13	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 16:13	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 16:13	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 16:13	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 16:13	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 16:13	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 16:13	WG1985191
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 16:13	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 16:13	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 16:13	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 16:13	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 16:13	WG1985191
(S) Nitrobenzene-d5	*104*			*31.0-160*		*01/10/2023 16:13*	WG1985191
(S) 2-Fluorobiphenyl	*98.4*			*48.0-148*		*01/10/2023 16:13*	WG1985191
(S) p-Terphenyl-d14	*83.2*			*37.0-146*		*01/10/2023 16:13*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/09/2023 01:00	WG1985130
Acrolein	U		0.00254	0.0500	1	01/09/2023 01:00	WG1985130
Acrylonitrile	U		0.000671	0.0100	1	01/09/2023 01:00	WG1985130
Benzene	U		0.0000941	0.00100	1	01/09/2023 01:00	WG1985130
Bromobenzene	U		0.000118	0.00100	1	01/09/2023 01:00	WG1985130
Bromodichloromethane	U		0.000136	0.00100	1	01/09/2023 01:00	WG1985130
Bromoform	U		0.000129	0.00100	1	01/09/2023 01:00	WG1985130
Bromomethane	U		0.000605	0.00500	1	01/09/2023 01:00	WG1985130
n-Butylbenzene	U		0.000157	0.00100	1	01/09/2023 01:00	WG1985130
sec-Butylbenzene	U		0.000125	0.00100	1	01/09/2023 01:00	WG1985130
tert-Butylbenzene	U		0.000127	0.00100	1	01/09/2023 01:00	WG1985130
Carbon tetrachloride	U		0.000128	0.00100	1	01/09/2023 01:00	WG1985130
Chlorobenzene	U		0.000116	0.00100	1	01/09/2023 01:00	WG1985130
Chlorodibromomethane	U		0.000140	0.00100	1	01/09/2023 01:00	WG1985130
Chloroethane	U		0.000192	0.00500	1	01/09/2023 01:00	WG1985130
Chloroform	U		0.000111	0.00500	1	01/09/2023 01:00	WG1985130
Chloromethane	U		0.000960	0.00250	1	01/09/2023 01:00	WG1985130
2-Chlorotoluene	U		0.000106	0.00100	1	01/09/2023 01:00	WG1985130
4-Chlorotoluene	U		0.000114	0.00100	1	01/09/2023 01:00	WG1985130
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/09/2023 01:00	WG1985130
1,2-Dibromoethane	U		0.000126	0.00100	1	01/09/2023 01:00	WG1985130
Dibromomethane	U		0.000122	0.00100	1	01/09/2023 01:00	WG1985130
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/09/2023 01:00	WG1985130
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/09/2023 01:00	WG1985130
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/09/2023 01:00	WG1985130
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/09/2023 01:00	WG1985130
1,1-Dichloroethane	U		0.000100	0.00100	1	01/09/2023 01:00	WG1985130
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/09/2023 01:00	WG1985130
1,1-Dichloroethene	U		0.000188	0.00100	1	01/09/2023 01:00	WG1985130
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/09/2023 01:00	WG1985130
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/09/2023 01:00	WG1985130
1,2-Dichloropropane	U		0.000149	0.00100	1	01/09/2023 01:00	WG1985130
1,1-Dichloropropene	U		0.000142	0.00100	1	01/09/2023 01:00	WG1985130
1,3-Dichloropropane	U		0.000110	0.00100	1	01/09/2023 01:00	WG1985130
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/09/2023 01:00	WG1985130
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/09/2023 01:00	WG1985130
2,2-Dichloropropane	U		0.000161	0.00100	1	01/09/2023 01:00	WG1985130
Di-isopropyl ether	U		0.000105	0.00100	1	01/09/2023 01:00	WG1985130
Ethylbenzene	U		0.000137	0.00100	1	01/09/2023 01:00	WG1985130
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/09/2023 01:00	WG1985130
Isopropylbenzene	U		0.000105	0.00100	1	01/09/2023 01:00	WG1985130
p-Isopropyltoluene	U		0.000120	0.00100	1	01/09/2023 01:00	WG1985130
2-Butanone (MEK)	U		0.00119	0.0100	1	01/09/2023 01:00	WG1985130
Methylene Chloride	U		0.000430	0.00500	1	01/09/2023 01:00	WG1985130
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/09/2023 01:00	WG1985130
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/09/2023 01:00	WG1985130
Naphthalene	U		0.00100	0.00500	1	01/09/2023 01:00	WG1985130
n-Propylbenzene	U		0.0000993	0.00100	1	01/09/2023 01:00	WG1985130
Styrene	U		0.000118	0.00100	1	01/09/2023 01:00	WG1985130
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/09/2023 01:00	WG1985130
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/09/2023 01:00	WG1985130
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/09/2023 01:00	WG1985130
Tetrachloroethene	U		0.000300	0.00100	1	01/09/2023 01:00	WG1985130
Toluene	U		0.000278	0.00100	1	01/09/2023 01:00	WG1985130
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/09/2023 01:00	WG1985130
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/09/2023 01:00	WG1985130

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/09/2023 01:00	WG1985130
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/09/2023 01:00	WG1985130
Trichloroethene	U		0.000190	0.00100	1	01/09/2023 01:00	WG1985130
Trichlorofluoromethane	U		0.000160	0.00500	1	01/09/2023 01:00	WG1985130
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/09/2023 01:00	WG1985130
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/09/2023 01:00	WG1985130
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 01:00	WG1985130
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/09/2023 01:00	WG1985130
Vinyl chloride	U		0.000234	0.00100	1	01/09/2023 01:00	WG1985130
Xylenes, Total	U		0.000174	0.00300	1	01/09/2023 01:00	WG1985130
(S) Toluene-d8	*108*			*80.0-120*		*01/09/2023 01:00*	WG1985130
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/09/2023 01:00*	WG1985130
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*01/09/2023 01:00*	WG1985130

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	01/10/2023 14:34	WG1985191
Acenaphthene	U		0.0000190	0.0000500	1	01/10/2023 14:34	WG1985191
Acenaphthylene	U		0.0000171	0.0000500	1	01/10/2023 14:34	WG1985191
Benzo(a)anthracene	U		0.0000203	0.0000500	1	01/10/2023 14:34	WG1985191
Benzo(a)pyrene	U		0.0000184	0.0000500	1	01/10/2023 14:34	WG1985191
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	01/10/2023 14:34	WG1985191
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	01/10/2023 14:34	WG1985191
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	01/10/2023 14:34	WG1985191
Chrysene	U		0.0000179	0.0000500	1	01/10/2023 14:34	WG1985191
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	01/10/2023 14:34	WG1985191
Fluoranthene	U		0.0000270	0.000100	1	01/10/2023 14:34	WG1985191
Fluorene	U		0.0000169	0.0000500	1	01/10/2023 14:34	WG1985191
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	01/10/2023 14:34	WG1985191
Naphthalene	U		0.0000917	0.000250	1	01/10/2023 14:34	WG1985191
Phenanthrene	U		0.0000180	0.0000500	1	01/10/2023 14:34	WG1985191
Pyrene	U		0.0000169	0.0000500	1	01/10/2023 14:34	WG1985191
1-Methylnaphthalene	U		0.0000687	0.000250	1	01/10/2023 14:34	WG1985191
2-Methylnaphthalene	U		0.0000674	0.000250	1	01/10/2023 14:34	WG1985191
2-Chloronaphthalene	U		0.0000682	0.000250	1	01/10/2023 14:34	WG1985191
(S) Nitrobenzene-d5	*105*			*31.0-160*		*01/10/2023 14:34*	WG1985191
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*01/10/2023 14:34*	WG1985191
(S) p-Terphenyl-d14	*92.6*			*37.0-146*		*01/10/2023 14:34*	WG1985191

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Acetone	U		0.0113	0.0500	1	01/11/2023 15:25	WG1986939
Acrolein	U		0.00254	0.0500	1	01/11/2023 15:25	WG1986939
Acrylonitrile	U		0.000671	0.0100	1	01/11/2023 15:25	WG1986939
Benzene	U		0.0000941	0.00100	1	01/11/2023 15:25	WG1986939
Bromobenzene	U		0.000118	0.00100	1	01/11/2023 15:25	WG1986939
Bromodichloromethane	U		0.000136	0.00100	1	01/11/2023 15:25	WG1986939
Bromoform	U		0.000129	0.00100	1	01/11/2023 15:25	WG1986939
Bromomethane	U		0.000605	0.00500	1	01/11/2023 15:25	WG1986939
n-Butylbenzene	U		0.000157	0.00100	1	01/11/2023 15:25	WG1986939
sec-Butylbenzene	U		0.000125	0.00100	1	01/11/2023 15:25	WG1986939
tert-Butylbenzene	U		0.000127	0.00100	1	01/11/2023 15:25	WG1986939
Carbon tetrachloride	U		0.000128	0.00100	1	01/11/2023 15:25	WG1986939
Chlorobenzene	U		0.000116	0.00100	1	01/11/2023 15:25	WG1986939
Chlorodibromomethane	U		0.000140	0.00100	1	01/11/2023 15:25	WG1986939
Chloroethane	U		0.000192	0.00500	1	01/11/2023 15:25	WG1986939
Chloroform	U		0.000111	0.00500	1	01/11/2023 15:25	WG1986939
Chloromethane	U		0.000960	0.00250	1	01/11/2023 15:25	WG1986939
2-Chlorotoluene	U		0.000106	0.00100	1	01/11/2023 15:25	WG1986939
4-Chlorotoluene	U		0.000114	0.00100	1	01/11/2023 15:25	WG1986939
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500	1	01/11/2023 15:25	WG1986939
1,2-Dibromoethane	U		0.000126	0.00100	1	01/11/2023 15:25	WG1986939
Dibromomethane	U		0.000122	0.00100	1	01/11/2023 15:25	WG1986939
1,2-Dichlorobenzene	U		0.000107	0.00100	1	01/11/2023 15:25	WG1986939
1,3-Dichlorobenzene	U		0.000110	0.00100	1	01/11/2023 15:25	WG1986939
1,4-Dichlorobenzene	U		0.000120	0.00100	1	01/11/2023 15:25	WG1986939
Dichlorodifluoromethane	U		0.000374	0.00500	1	01/11/2023 15:25	WG1986939
1,1-Dichloroethane	U		0.000100	0.00100	1	01/11/2023 15:25	WG1986939
1,2-Dichloroethane	U		0.0000819	0.00100	1	01/11/2023 15:25	WG1986939
1,1-Dichloroethene	U		0.000188	0.00100	1	01/11/2023 15:25	WG1986939
cis-1,2-Dichloroethene	U		0.000126	0.00100	1	01/11/2023 15:25	WG1986939
trans-1,2-Dichloroethene	U		0.000149	0.00100	1	01/11/2023 15:25	WG1986939
1,2-Dichloropropane	U		0.000149	0.00100	1	01/11/2023 15:25	WG1986939
1,1-Dichloropropene	U		0.000142	0.00100	1	01/11/2023 15:25	WG1986939
1,3-Dichloropropane	U		0.000110	0.00100	1	01/11/2023 15:25	WG1986939
cis-1,3-Dichloropropene	U		0.000111	0.00100	1	01/11/2023 15:25	WG1986939
trans-1,3-Dichloropropene	U		0.000118	0.00100	1	01/11/2023 15:25	WG1986939
2,2-Dichloropropane	U		0.000161	0.00100	1	01/11/2023 15:25	WG1986939
Di-isopropyl ether	U		0.000105	0.00100	1	01/11/2023 15:25	WG1986939
Ethylbenzene	U		0.000137	0.00100	1	01/11/2023 15:25	WG1986939
Hexachloro-1,3-butadiene	U		0.000337	0.00100	1	01/11/2023 15:25	WG1986939
Isopropylbenzene	U		0.000105	0.00100	1	01/11/2023 15:25	WG1986939
p-Isopropyltoluene	U		0.000120	0.00100	1	01/11/2023 15:25	WG1986939
2-Butanone (MEK)	U		0.00119	0.0100	1	01/11/2023 15:25	WG1986939
Methylene Chloride	U		0.000430	0.00500	1	01/11/2023 15:25	WG1986939
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100	1	01/11/2023 15:25	WG1986939
Methyl tert-butyl ether	U		0.000101	0.00100	1	01/11/2023 15:25	WG1986939
Naphthalene	U		0.00100	0.00500	1	01/11/2023 15:25	WG1986939
n-Propylbenzene	U		0.0000993	0.00100	1	01/11/2023 15:25	WG1986939
Styrene	U		0.000118	0.00100	1	01/11/2023 15:25	WG1986939
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100	1	01/11/2023 15:25	WG1986939
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100	1	01/11/2023 15:25	WG1986939
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100	1	01/11/2023 15:25	WG1986939
Tetrachloroethene	U		0.000300	0.00100	1	01/11/2023 15:25	WG1986939
Toluene	U		0.000278	0.00100	1	01/11/2023 15:25	WG1986939
1,2,3-Trichlorobenzene	U		0.000230	0.00100	1	01/11/2023 15:25	WG1986939
1,2,4-Trichlorobenzene	U		0.000481	0.00100	1	01/11/2023 15:25	WG1986939

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1,1,1-Trichloroethane	U		0.000149	0.00100	1	01/11/2023 15:25	WG1986939
1,1,2-Trichloroethane	U		0.000158	0.00100	1	01/11/2023 15:25	WG1986939
Trichloroethene	U		0.000190	0.00100	1	01/11/2023 15:25	WG1986939
Trichlorofluoromethane	U		0.000160	0.00500	1	01/11/2023 15:25	WG1986939
1,2,3-Trichloropropane	U		0.000237	0.00250	1	01/11/2023 15:25	WG1986939
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	01/11/2023 15:25	WG1986939
1,2,3-Trimethylbenzene	U		0.000104	0.00100	1	01/11/2023 15:25	WG1986939
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	01/11/2023 15:25	WG1986939
Vinyl chloride	U		0.000234	0.00100	1	01/11/2023 15:25	WG1986939
Xylenes, Total	U		0.000174	0.00300	1	01/11/2023 15:25	WG1986939
(S) Toluene-d8	*108*			*80.0-120*		*01/11/2023 15:25*	WG1986939
(S) 4-Bromofluorobenzene	*95.1*			*77.0-126*		*01/11/2023 15:25*	WG1986939
(S) 1,2-Dichloroethane-d4	*83.9*			*70.0-130*		*01/11/2023 15:25*	WG1986939

Method Blank (MB)

(MB) R3879965-2 01/09/23 00:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0113	0.0500
Acrolein	U		0.00254	0.0500
Acrylonitrile	U		0.000671	0.0100
Benzene	U		0.0000941	0.00100
Bromobenzene	U		0.000118	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
2-Chlorotoluene	U		0.000106	0.00100
4-Chlorotoluene	U		0.000114	0.00100
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500
1,2-Dibromoethane	U		0.000126	0.00100
Dibromomethane	U		0.000122	0.00100
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
cis-1,2-Dichloroethene	U		0.000126	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
1,1-Dichloropropene	U		0.000142	0.00100
1,3-Dichloropropane	U		0.000110	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
2,2-Dichloropropane	U		0.000161	0.00100
Di-isopropyl ether	U		0.000105	0.00100
Ethylbenzene	U		0.000137	0.00100
Hexachloro-1,3-butadiene	U		0.000337	0.00100

Method Blank (MB)

(MB) R3879965-2 01/09/23 00:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000105	0.00100
p-Isopropyltoluene	U		0.000120	0.00100
2-Butanone (MEK)	U		0.00119	0.0100
Methylene Chloride	U		0.000430	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.0000993	0.00100
Styrene	U		0.000118	0.00100
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000481	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
1,2,3-Trichloropropane	U		0.000237	0.00250
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,2,3-Trimethylbenzene	U		0.000104	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Vinyl chloride	U		0.000234	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*111*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.2*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3879965-1 01/08/23 23:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.0250	0.0248	99.2	19.0-160	
Acrolein	0.0250	0.0231	92.4	10.0-160	
Acrylonitrile	0.0250	0.0240	96.0	55.0-149	
Benzene	0.00500	0.00499	99.8	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R3879965-1 01/08/23 23:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromobenzene	0.00500	0.00554	111	73.0-121	
Bromodichloromethane	0.00500	0.00507	101	75.0-120	
Bromoform	0.00500	0.00462	92.4	68.0-132	
Bromomethane	0.00500	0.00384	76.8	10.0-160	
n-Butylbenzene	0.00500	0.00516	103	73.0-125	
sec-Butylbenzene	0.00500	0.00592	118	75.0-125	
tert-Butylbenzene	0.00500	0.00562	112	76.0-124	
Carbon tetrachloride	0.00500	0.00502	100	68.0-126	
Chlorobenzene	0.00500	0.00527	105	80.0-121	
Chlorodibromomethane	0.00500	0.00486	97.2	77.0-125	
Chloroethane	0.00500	0.00399	79.8	47.0-150	
Chloroform	0.00500	0.00540	108	73.0-120	
Chloromethane	0.00500	0.00464	92.8	41.0-142	
2-Chlorotoluene	0.00500	0.00570	114	76.0-123	
4-Chlorotoluene	0.00500	0.00556	111	75.0-122	
1,2-Dibromo-3-Chloropropane	0.00500	0.00411	82.2	58.0-134	
1,2-Dibromoethane	0.00500	0.00508	102	80.0-122	
Dibromomethane	0.00500	0.00495	99.0	80.0-120	
1,2-Dichlorobenzene	0.00500	0.00542	108	79.0-121	
1,3-Dichlorobenzene	0.00500	0.00491	98.2	79.0-120	
1,4-Dichlorobenzene	0.00500	0.00557	111	79.0-120	
Dichlorodifluoromethane	0.00500	0.00475	95.0	51.0-149	
1,1-Dichloroethane	0.00500	0.00522	104	70.0-126	
1,2-Dichloroethane	0.00500	0.00531	106	70.0-128	
1,1-Dichloroethene	0.00500	0.00476	95.2	71.0-124	
cis-1,2-Dichloroethene	0.00500	0.00540	108	73.0-120	
trans-1,2-Dichloroethene	0.00500	0.00485	97.0	73.0-120	
1,2-Dichloropropane	0.00500	0.00476	95.2	77.0-125	
1,1-Dichloropropene	0.00500	0.00508	102	74.0-126	
1,3-Dichloropropane	0.00500	0.00531	106	80.0-120	
cis-1,3-Dichloropropene	0.00500	0.00467	93.4	80.0-123	
trans-1,3-Dichloropropene	0.00500	0.00490	98.0	78.0-124	
2,2-Dichloropropane	0.00500	0.00500	100	58.0-130	
Di-isopropyl ether	0.00500	0.00518	104	58.0-138	
Ethylbenzene	0.00500	0.00526	105	79.0-123	
Hexachloro-1,3-butadiene	0.00500	0.00620	124	54.0-138	
Isopropylbenzene	0.00500	0.00498	99.6	76.0-127	
p-Isopropyltoluene	0.00500	0.00537	107	76.0-125	
2-Butanone (MEK)	0.0250	0.0236	94.4	44.0-160	
Methylene Chloride	0.00500	0.00509	102	67.0-120	

Laboratory Control Sample (LCS)

(LCS) R3879965-1 01/08/23 23:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	0.0250	0.0259	104	68.0-142	
Methyl tert-butyl ether	0.00500	0.00521	104	68.0-125	
Naphthalene	0.00500	0.00408	81.6	54.0-135	
n-Propylbenzene	0.00500	0.00568	114	77.0-124	
Styrene	0.00500	0.00494	98.8	73.0-130	
1,1,1,2-Tetrachloroethane	0.00500	0.00472	94.4	75.0-125	
1,1,2,2-Tetrachloroethane	0.00500	0.00574	115	65.0-130	
1,1,2-Trichlorotrifluoroethane	0.00500	0.00520	104	69.0-132	
Tetrachloroethene	0.00500	0.00537	107	72.0-132	
Toluene	0.00500	0.00511	102	79.0-120	
1,2,3-Trichlorobenzene	0.00500	0.00501	100	50.0-138	
1,2,4-Trichlorobenzene	0.00500	0.00427	85.4	57.0-137	
1,1,1-Trichloroethane	0.00500	0.00523	105	73.0-124	
1,1,2-Trichloroethane	0.00500	0.00516	103	80.0-120	
Trichloroethene	0.00500	0.00487	97.4	78.0-124	
Trichlorofluoromethane	0.00500	0.00494	98.8	59.0-147	
1,2,3-Trichloropropane	0.00500	0.00539	108	73.0-130	
1,2,4-Trimethylbenzene	0.00500	0.00548	110	76.0-121	
1,2,3-Trimethylbenzene	0.00500	0.00546	109	77.0-120	
1,3,5-Trimethylbenzene	0.00500	0.00563	113	76.0-122	
Vinyl chloride	0.00500	0.00412	82.4	67.0-131	
Xylenes, Total	0.0150	0.0156	104	79.0-123	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*110*	*70.0-130*	

Method Blank (MB)

(MB) R3880285-4 01/11/23 09:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0113	0.0500
Acrolein	U		0.00254	0.0500
Acrylonitrile	U		0.000671	0.0100
Benzene	U		0.0000941	0.00100
Bromobenzene	U		0.000118	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
2-Chlorotoluene	U		0.000106	0.00100
4-Chlorotoluene	U		0.000114	0.00100
1,2-Dibromo-3-Chloropropane	U		0.000276	0.00500
1,2-Dibromoethane	U		0.000126	0.00100
Dibromomethane	U		0.000122	0.00100
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
cis-1,2-Dichloroethene	U		0.000126	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
1,1-Dichloropropene	U		0.000142	0.00100
1,3-Dichloropropane	U		0.000110	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
2,2-Dichloropropane	U		0.000161	0.00100
Di-isopropyl ether	U		0.000105	0.00100
Ethylbenzene	U		0.000137	0.00100
Hexachloro-1,3-butadiene	U		0.000337	0.00100

Method Blank (MB)

(MB) R3880285-4 01/11/23 09:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000105	0.00100
p-Isopropyltoluene	U		0.000120	0.00100
2-Butanone (MEK)	U		0.00119	0.0100
Methylene Chloride	U		0.000430	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000478	0.0100
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.0000993	0.00100
Styrene	U		0.000118	0.00100
1,1,1,2-Tetrachloroethane	U		0.000147	0.00100
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000180	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000481	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
1,2,3-Trichloropropane	U		0.000237	0.00250
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,2,3-Trimethylbenzene	U		0.000104	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Vinyl chloride	U		0.000234	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*84.6*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880285-1 01/11/23 08:04 • (LCSD) R3880285-2 01/11/23 08:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.0250	0.0174	0.0181	69.6	72.4	19.0-160			3.94	27
Acrolein	0.0250	0.0216	0.0206	86.4	82.4	10.0-160			4.74	26
Acrylonitrile	0.0250	0.0211	0.0215	84.4	86.0	55.0-149			1.88	20
Benzene	0.00500	0.00485	0.00482	97.0	96.4	70.0-123			0.620	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880285-1 01/11/23 08:04 • (LCSD) R3880285-2 01/11/23 08:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromobenzene	0.00500	0.00464	0.00472	92.8	94.4	73.0-121			1.71	20
Bromodichloromethane	0.00500	0.00416	0.00401	83.2	80.2	75.0-120			3.67	20
Bromoform	0.00500	0.00389	0.00392	77.8	78.4	68.0-132			0.768	20
Bromomethane	0.00500	0.00466	0.00434	93.2	86.8	10.0-160			7.11	25
n-Butylbenzene	0.00500	0.00478	0.00463	95.6	92.6	73.0-125			3.19	20
sec-Butylbenzene	0.00500	0.00505	0.00491	101	98.2	75.0-125			2.81	20
tert-Butylbenzene	0.00500	0.00465	0.00475	93.0	95.0	76.0-124			2.13	20
Carbon tetrachloride	0.00500	0.00412	0.00381	82.4	76.2	68.0-126			7.82	20
Chlorobenzene	0.00500	0.00506	0.00499	101	99.8	80.0-121			1.39	20
Chlorodibromomethane	0.00500	0.00455	0.00472	91.0	94.4	77.0-125			3.67	20
Chloroethane	0.00500	0.00490	0.00514	98.0	103	47.0-150			4.78	20
Chloroform	0.00500	0.00434	0.00429	86.8	85.8	73.0-120			1.16	20
Chloromethane	0.00500	0.00437	0.00464	87.4	92.8	41.0-142			5.99	20
2-Chlorotoluene	0.00500	0.00479	0.00482	95.8	96.4	76.0-123			0.624	20
4-Chlorotoluene	0.00500	0.00467	0.00466	93.4	93.2	75.0-122			0.214	20
1,2-Dibromo-3-Chloropropane	0.00500	0.00404	0.00420	80.8	84.0	58.0-134			3.88	20
1,2-Dibromoethane	0.00500	0.00517	0.00475	103	95.0	80.0-122			8.47	20
Dibromomethane	0.00500	0.00449	0.00438	89.8	87.6	80.0-120			2.48	20
1,2-Dichlorobenzene	0.00500	0.00500	0.00484	100	96.8	79.0-121			3.25	20
1,3-Dichlorobenzene	0.00500	0.00471	0.00491	94.2	98.2	79.0-120			4.16	20
1,4-Dichlorobenzene	0.00500	0.00478	0.00502	95.6	100	79.0-120			4.90	20
Dichlorodifluoromethane	0.00500	0.00394	0.00391	78.8	78.2	51.0-149			0.764	20
1,1-Dichloroethane	0.00500	0.00451	0.00434	90.2	86.8	70.0-126			3.84	20
1,2-Dichloroethane	0.00500	0.00413	0.00413	82.6	82.6	70.0-128			0.000	20
1,1-Dichloroethene	0.00500	0.00445	0.00375	89.0	75.0	71.0-124			17.1	20
cis-1,2-Dichloroethene	0.00500	0.00429	0.00429	85.8	85.8	73.0-120			0.000	20
trans-1,2-Dichloroethene	0.00500	0.00449	0.00427	89.8	85.4	73.0-120			5.02	20
1,2-Dichloropropane	0.00500	0.00512	0.00479	102	95.8	77.0-125			6.66	20
1,1-Dichloropropene	0.00500	0.00478	0.00465	95.6	93.0	74.0-126			2.76	20
1,3-Dichloropropane	0.00500	0.00535	0.00509	107	102	80.0-120			4.98	20
cis-1,3-Dichloropropene	0.00500	0.00483	0.00484	96.6	96.8	80.0-123			0.207	20
trans-1,3-Dichloropropene	0.00500	0.00501	0.00486	100	97.2	78.0-124			3.04	20
2,2-Dichloropropane	0.00500	0.00431	0.00393	86.2	78.6	58.0-130			9.22	20
Di-isopropyl ether	0.00500	0.00428	0.00408	85.6	81.6	58.0-138			4.78	20
Ethylbenzene	0.00500	0.00481	0.00487	96.2	97.4	79.0-123			1.24	20
Hexachloro-1,3-butadiene	0.00500	0.00456	0.00449	91.2	89.8	54.0-138			1.55	20
Isopropylbenzene	0.00500	0.00469	0.00454	93.8	90.8	76.0-127			3.25	20
p-Isopropyltoluene	0.00500	0.00489	0.00474	97.8	94.8	76.0-125			3.12	20
2-Butanone (MEK)	0.0250	0.0238	0.0241	95.2	96.4	44.0-160			1.25	20
Methylene Chloride	0.00500	0.00456	0.00464	91.2	92.8	67.0-120			1.74	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880285-1 01/11/23 08:04 • (LCSD) R3880285-2 01/11/23 08:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	0.0250	0.0242	0.0232	96.8	92.8	68.0-142			4.22	20
Methyl tert-butyl ether	0.00500	0.00436	0.00416	87.2	83.2	68.0-125			4.69	20
Naphthalene	0.00500	0.00448	0.00457	89.6	91.4	54.0-135			1.99	20
n-Propylbenzene	0.00500	0.00475	0.00470	95.0	94.0	77.0-124			1.06	20
Styrene	0.00500	0.00496	0.00475	99.2	95.0	73.0-130			4.33	20
1,1,1,2-Tetrachloroethane	0.00500	0.00432	0.00411	86.4	82.2	75.0-125			4.98	20
1,1,2,2-Tetrachloroethane	0.00500	0.00497	0.00481	99.4	96.2	65.0-130			3.27	20
1,1,2-Trichlorotrifluoroethane	0.00500	0.00462	0.00430	92.4	86.0	69.0-132			7.17	20
Tetrachloroethene	0.00500	0.00514	0.00474	103	94.8	72.0-132			8.10	20
Toluene	0.00500	0.00493	0.00471	98.6	94.2	79.0-120			4.56	20
1,2,3-Trichlorobenzene	0.00500	0.00455	0.00472	91.0	94.4	50.0-138			3.67	20
1,2,4-Trichlorobenzene	0.00500	0.00457	0.00491	91.4	98.2	57.0-137			7.17	20
1,1,1-Trichloroethane	0.00500	0.00428	0.00407	85.6	81.4	73.0-124			5.03	20
1,1,2-Trichloroethane	0.00500	0.00511	0.00484	102	96.8	80.0-120			5.43	20
Trichloroethene	0.00500	0.00498	0.00484	99.6	96.8	78.0-124			2.85	20
Trichlorofluoromethane	0.00500	0.00545	0.00493	109	98.6	59.0-147			10.0	20
1,2,3-Trichloropropane	0.00500	0.00475	0.00495	95.0	99.0	73.0-130			4.12	20
1,2,4-Trimethylbenzene	0.00500	0.00452	0.00459	90.4	91.8	76.0-121			1.54	20
1,2,3-Trimethylbenzene	0.00500	0.00460	0.00468	92.0	93.6	77.0-120			1.72	20
1,3,5-Trimethylbenzene	0.00500	0.00466	0.00478	93.2	95.6	76.0-122			2.54	20
Vinyl chloride	0.00500	0.00473	0.00451	94.6	90.2	67.0-131			4.76	20
Xylenes, Total	0.0150	0.0149	0.0144	99.3	96.0	79.0-123			3.41	20
(S) Toluene-d8				*108*	*106*	*80.0-120*				
(S) 4-Bromofluorobenzene				*96.3*	*93.2*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*89.0*	*90.8*	*70.0-130*				

Method Blank (MB)

(MB) R3879616-3 01/10/23 09:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
2-Chloronaphthalene	U		0.0000682	0.000250
(S) Nitrobenzene-d5	*90.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*66.5*			*48.0-148*
(S) p-Terphenyl-d14	*96.5*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3879616-1 01/10/23 08:54 • (LCSD) R3879616-2 01/10/23 09:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00178	0.00180	89.0	90.0	67.0-150			1.12	20
Acenaphthene	0.00200	0.00173	0.00177	86.5	88.5	65.0-138			2.29	20
Acenaphthylene	0.00200	0.00169	0.00172	84.5	86.0	66.0-140			1.76	20
Benzo(a)anthracene	0.00200	0.00188	0.00191	94.0	95.5	61.0-140			1.58	20
Benzo(a)pyrene	0.00200	0.00194	0.00199	97.0	99.5	60.0-143			2.54	20
Benzo(b)fluoranthene	0.00200	0.00186	0.00190	93.0	95.0	58.0-141			2.13	20
Benzo(g,h,i)perylene	0.00200	0.00185	0.00190	92.5	95.0	52.0-153			2.67	20
Benzo(k)fluoranthene	0.00200	0.00176	0.00184	88.0	92.0	58.0-148			4.44	20
Chrysene	0.00200	0.00190	0.00197	95.0	98.5	64.0-144			3.62	20
Dibenz(a,h)anthracene	0.00200	0.00166	0.00171	83.0	85.5	52.0-155			2.97	20
Fluoranthene	0.00200	0.00205	0.00212	103	106	69.0-153			3.36	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3879616-1 01/10/23 08:54 • (LCSD) R3879616-2 01/10/23 09:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.00200	0.00186	0.00188	93.0	94.0	64.0-136			1.07	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00187	0.00190	93.5	95.0	54.0-153			1.59	20
Naphthalene	0.00200	0.00151	0.00154	75.5	77.0	61.0-137			1.97	20
Phenanthrene	0.00200	0.00184	0.00191	92.0	95.5	62.0-137			3.73	20
Pyrene	0.00200	0.00200	0.00207	100	104	60.0-142			3.44	20
1-Methylnaphthalene	0.00200	0.00156	0.00160	78.0	80.0	66.0-142			2.53	20
2-Methylnaphthalene	0.00200	0.00155	0.00158	77.5	79.0	62.0-136			1.92	20
2-Chloronaphthalene	0.00200	0.00153	0.00158	76.5	79.0	64.0-140			3.22	20
(S) Nitrobenzene-d5				*92.5*	*94.5*	*31.0-160*				
(S) 2-Fluorobiphenyl				*67.0*	*71.0*	*48.0-148*				
(S) p-Terphenyl-d14				*98.5*	*100*	*37.0-146*				

Method Blank (MB)

(MB) R3880066-3 01/10/23 13:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
2-Chloronaphthalene	U		0.0000682	0.000250
(S) Nitrobenzene-d5	*102*			*31.0-160*
(S) 2-Fluorobiphenyl	*98.0*			*48.0-148*
(S) p-Terphenyl-d14	*96.0*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880066-1 01/10/23 13:14 • (LCSD) R3880066-2 01/10/23 13:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00198	0.00186	99.0	93.0	67.0-150			6.25	20
Acenaphthene	0.00200	0.00200	0.00192	100	96.0	65.0-138			4.08	20
Acenaphthylene	0.00200	0.00205	0.00194	102	97.0	66.0-140			5.51	20
Benzo(a)anthracene	0.00200	0.00203	0.00192	102	96.0	61.0-140			5.57	20
Benzo(a)pyrene	0.00200	0.00203	0.00192	102	96.0	60.0-143			5.57	20
Benzo(b)fluoranthene	0.00200	0.00194	0.00184	97.0	92.0	58.0-141			5.29	20
Benzo(g,h,i)perylene	0.00200	0.00176	0.00166	88.0	83.0	52.0-153			5.85	20
Benzo(k)fluoranthene	0.00200	0.00188	0.00181	94.0	90.5	58.0-148			3.79	20
Chrysene	0.00200	0.00202	0.00194	101	97.0	64.0-144			4.04	20
Dibenz(a,h)anthracene	0.00200	0.00170	0.00159	85.0	79.5	52.0-155			6.69	20
Fluoranthene	0.00200	0.00208	0.00196	104	98.0	69.0-153			5.94	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3880066-1 01/10/23 13:14 • (LCSD) R3880066-2 01/10/23 13:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.00200	0.00210	0.00199	105	99.5	64.0-136			5.38	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00187	0.00177	93.5	88.5	54.0-153			5.49	20
Naphthalene	0.00200	0.00204	0.00192	102	96.0	61.0-137			6.06	20
Phenanthrene	0.00200	0.00201	0.00193	100	96.5	62.0-137			4.06	20
Pyrene	0.00200	0.00208	0.00202	104	101	60.0-142			2.93	20
1-Methylnaphthalene	0.00200	0.00201	0.00194	100	97.0	66.0-142			3.54	20
2-Methylnaphthalene	0.00200	0.00211	0.00202	105	101	62.0-136			4.36	20
2-Chloronaphthalene	0.00200	0.00199	0.00190	99.5	95.0	64.0-140			4.63	20
(S) Nitrobenzene-d5				*106*	*99.5*	*31.0-160*				
(S) 2-Fluorobiphenyl				*98.5*	*94.0*	*48.0-148*				
(S) p-Terphenyl-d14				*94.0*	*90.5*	*37.0-146*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Trinity Consultants

16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Billing Information:
Accounts Payable
16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Pres Chk

Report to:
Mr. Doug Abeln

Email To: **dabeln@trinityconsultants.com**

Project Description:
Osharai Indiana

City/State Collected: Indiana

Please Circle: PT MT CT ET

Phone: **636-256-7200**

Client Project #
222601.0143

Lab Project #
SCHYON-DOUG

Collected by (print):
Doug Abeln

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1573637
F194

Acctnum: **SCHYON**
Template: **T220657**
Prelogin: **P966832**
PM: **034 - Craig Cothron**
PB:

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260 40mlAmb-HCl	V8260 40mlAmb-HCl-Blk							Remarks	Sample # (lab only)
MW-1	GRAB	GW		1/6/23	8:46	5	X	X									-01
MW-2		GW			10:09	5	X	X									-02
MW-3		GW			8:19	5	X	X									-03
MW-4		GW			7:53	5	X	X									-04
MW-5		GW			10:40	5	X	X									-05
MW-6		GW			11:00	5	X	X									-06
MW-7		GW			9:15	5	X	X									-07
MW-8		GW			9:40	5	X	X									-08
MW-9		GW			12:00	5	X	X									-09
MW-10		GW			11:30	5	X	X									-10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5829 6702 7255

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
	1/6/23	2:15		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.8 °C 0.9 Bottles Received: 7
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-7 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
Trinity Consultants

16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Billing Information:
Accounts Payable
16252 Westwoods Business Park Dr.
Ellisville, MO 63021

Pres Chk

Report to:
Mr. Doug Abeln

Email To: **dabeln@trinityconsultants.com**

Project Description:
Osharai Indiana

City/State Collected: Indiana

Please Circle: PT MT CT ET

Phone: **636-256-7200**

Client Project # 227001.043

Lab Project # **SCHYON-DOUG**

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260 40mlAmb-HCl	V8260 40mlAmb-HCl-Blk							Remarks	Sample # (lab only)
MW-11	GRAB	GW		1/6/23	12:30	5	X	X									-11
MW-12		GW			12:51	5	X	X									-12
DUP01		GW				5	X	X									-13
FB-01		GW			11:30	5	X	X									-14 -15
TRIP BLANK		GW				1			X								

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1573837

Table #

Acctnum: **SCHYON**
Template: **T220657**
Prelogin: **P966832**
PM: **034 - Craig Cothron**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCl / MeoH TBR
	1/6/23	2:15		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.9 °C Bottles Received: 7
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-7-23 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

APPENDIX G. COMMUNITY RELATIONS PLAN

COMMUNITY RELATIONS PLAN

Marport LLC (Formerly Osharai Indiana) Site
4323 Kennedy Avenue
East Chicago, Indiana

Prepared By:

Douglas L. Abeln R.G. – Managing Consultant

TRINITY CONSULTANTS
16252 Westwoods Business Park Dr.
Ellisville, MO 63021
636-256-7200

February 2024

Project 242601.0038

Trinity Consultants

TABLE OF CONTENTS

1. INTRODUCTION

On behalf of Marport LLC, Trinity Consultants (Trinity) has completed this Community Relations Plan (CRP) for the Marport LLC (former Osharai Indiana) site located at 4323 Kennedy Avenue in East Chicago, Indiana (the site). The project is being conducted with oversight from the Indiana Department of Environmental Management (IDEM) Voluntary Remediation Program (VRP) and has been assigned IDEM reference identification VRP #6211101. This CRP was developed following the framework of IDEM's Voluntary Remediation Program Community Relations Plan (CRP) Non-Rule Policy Document (WASTE-0049-NPD) and in compliance with Indiana Code (IC 13-25-5-7; IC 13-25-5-11).

1.1 Goals of Community Relations Plan

The Marport LLC (formerly Osharai Indiana) site was accepted into the VRP on January 13, 2022 and a Site location map is shown on Figure 1. The nature and extent investigation of impacts is complete, and an institutional control in the form of an Environmental Restrictive Covenant (ERC) will be placed on the property deed to reduce the potential for direct groundwater exposure risk. There are no disruptive activities planned and there is no suspected off-site contamination associated with the site. However, as noted within the IDEM CRP Guidance, a written CRP is required to be included in the Remediation Work Plan (RWP). The goal of the CRP is to notify adjacent property owners and occupants, registered neighborhood organizations, sensitive community institutions, and local governmental units that the Marport LLC site has been accepted into IDEM's Voluntary Remediation Program (VRP) and that the RWP is available for review at the repository listed below.

1.2 Overview of Environmental Matters

A discussion of the nature and extent of constituents of concern (COCs), potential receptors, and measures to mitigate risk is presented in RWP to which this CRP is attached.

1.3 Site Overview

Most of the former plant structure, at least the original portion to the north, was originally constructed by Harbison Walker Refractories Company and placed in operation around 1907. City directories indicated that Harbison Walker Refractories continued in operation through at least 1958. The facility manufactured firebricks, refractory materials, and specialty bricks for the steel industry. Based on information obtained from a previous Phase I ESA Report, the US Reduction Company purchased the Site in the 1970s and operated it for aluminum smelting. Marport Smelting Co. began secondary aluminum smelting operations at the Site in 1985. Another company, Portage Alloys, Inc. appears at the Marport Smelting Co. address in a 1990 industrial directory. Marport is believed to have ceased operations at the site in 1999, and the Site has not been in use since. Recently, the existing buildings on the Site were demolished and currently only the building footings and concrete slab floors and pads remain. It is currently used as a 10-day hazardous waste transfer facility maintained and operated by Tradebe Environmental Services (Tradebe).

1.4 Description of Site and Project

The Site is located in a mixed heavy industrial, commercial, and residential area. It encompasses nearly eight acres and borders a rail yard. It consists of concrete floor slabs, concrete pads and building foundations, which are remnants of the manufacturing buildings that were demolished. The release-related chemicals (RRCs) are polycyclic aromatic hydrocarbons (PAHs) and Volatile Organic Compounds (VOCs). The

source of the release was a prior owner's 12,000 gallon above ground storage used for petroleum storage. The tank was removed prior to discovery of the release during a Phase I Environmental Site Assessment in 2005, but impacted soil/historical fill remains on-site in the west area of the former plant building and adjacent to the former tank containment area. During quarterly groundwater monitoring, tetrachloroethene was detected during the first quarter (6.01 ug/L) and fourth quarter (6.32 ug/L) sampling events at concentrations that slightly exceeded the Indiana Residential Groundwater Published Level (RGWPL) for tetrachloroethene of 5 ug/L. Site investigations confirm contamination does not extend off-site. It is likely that the detections of soil and groundwater constituents are representative of impact from the historical use of coke ash fill material present throughout the Marport LLC (formerly Osharai Indiana) site and the East Chicago, Indiana area and are not indicative of a release from operations associated with the Former Oil Storage Tank.

1.4.1 Remedial Actions

No disruptive remedial action activities are slated for the site. The closure approach for the Site will be the implementation of an institutional control in the form of an ERC, which includes restrictions on specific Site activities to limit the potential current and human and environmental receptors from contact with past impacted groundwater.

1.4.2 Directly Adjacent Properties

There are no disruptive activities planned and there is no suspected off-site contamination associated with the Site. Marport LLC will publish a public notice as outlined in Section 3 of the CRP. Table 1 included below contains a list of the properties directly adjacent to the Site.

Property Name/Owner Name	**Mailing Address**	**Address/Parcel ID**	**Property Type**	**Direction from Site**
Freidman Industries Inc	4303 Kennedy Ave., East Chicago, IN 46312	4303 Kennedy Ave., East Chicago, IN 46312 45-03-28-201-005.000-024	Industrial	North
Praxair	4129 Kennedy Ave., East Chicago, IN 46312	4129 Kennedy Ave., East Chicago, IN 46312 45-03-28-100-005.000-024	Industrial	West
Lake County Trust CO TR	4228 Carrey St., East Chicago, IN 46312	4228 Carrey St., East Chicago, IN 46312 45-03-28-253-004.000-024	Industrial	East
Tradebe Treatment & Recycling	4343 Kennedy Ave., Chicago, IN	4343 Kennedy Ave., East Chicago, IN 46312 45-03-25-251-001.000-024	Industrial	South

Marport LLC will send written notice to the adjacent property owners and property occupants, neighborhood organizations, and sensitive community institutions to inform them of Marport LLCs RWP and CRP. Additionally, a written notice will be sent to all entities listed in Appendix B. Appendix B contains the IDEM mailing list for the Tradebe Treatment & Recycling Center located at 4323 Kennedy Avenue, in East Chicago, Indiana.

2. AREA OF COMMUNITY CONCERN

This section summarizes known or registered neighborhood organizations serving the site/area of concern. There are two known neighborhood organizations serving the project area. The Site is located in an area largely used for industrial, commercial and residential purposes as shown on Figure 2. Figure 3 contains an area map identifying a 2-mile radius around the Site.

Foundation of East Chicago
100 W. Chicago, Ave.
East Chicago, IN 46312
(219) 392-4225
http://www.foundationsec.org

Communities in Sch-east Chcg
100 W. Chicago Ave., Ste G
East Chicago, IN 46312
(219) 378-9114
http://www.cislakecounty.org

2.1 Local Government Units

City of East Chicago, Indiana
4525 Indianapolis Blvd.
East Chicago, IN 46312
(219) 391-8300
https://www.eastchicago.com

Lake County Indiana
2293 N. Main Street
Crown Point, IN 46307
(219) 755-3000
http://www.lakecounty.IN.gov

2.2 Potentially Sensitive Institutions

Property Type	Name	Address
School	East Chicago Central High School	1100 W. Columbus, Dr., East Chicago, IN 46312
School	East Chicago Lighthouse Charter School	3916 Pulaski St., East Chicago, IN 46312
School	East Chicago Urban Enterprise Academy	1402 E. Chicago Ave., East Chicago, IN 46312
School	Bishop Noll Institute	1519 Hoffman St., Hammond, IN 46327
School	William McKinley Elementary School	4825 Magoun Ave., East Chicago, IN 46312
School	Abraham Lincoln Elementary School	4221 Towle Ave., Hammond, IN 48327
School	Harrison Elementary School	4411 Magoun Ave., East Chicago, IN 46312

School	Washington Irving Elementary School	4727 Pine Ave., Hammond, IN 46327
School	Carrie Gosch Elementary School	4001 Indianapolis Blvd., East Chicago, IN 46312
School	Washington Elementary School	2400 Cardinal Dr., East Chicago, IN 46312
School	Whiting High School	1751 Oliver St., Whiting, IN 46394
School	Eggers Middle School	5825 Blaine Ave., Hammond, IN 46320
School	St. Stanislaus School	4930 Indianapolis Blvd., East Chicago, IN 46312
School	St. Casimir School	4329 Cameron Ave., Hammond, IN 46327
School	City Baptist Schools	4925 Sohl Ave., Hammond, IN 46327
School	Thorton Fractional North High School	755 Pulaski Rd., Calumet City, IL 60409
School	Whiting Middle School	1800 New York Ave., Whiting, IN 46394
Parks Administration	East Chicago Parks and Recreation Department	1615 E. 142nd St., East Chicago, IN 46312
Hospital	St. Catherine Hospital	4321 Fir St., East Chicago, IN 46312
Health Care Facility	Immanuel Family Health Center	915 W. Chicago Ave., East Chicago, IN 46312
Health Care Facility	Hammond-Whiting Care Center	1000 114th St., Whiting, IN 46394
Health Care Facility	Ophelia Steen Family & Health Services Center	5927 Columbia Ave., Hammond, IN 46320
Hospital	Regency Hospital-Northwest Indiana	4321 Fir St., East Chicago, IN 46312
Child Care	Robertson Child Care Development	4860 Olcott Ave., East Chicago, IN 46312
Child Care Facility	Children Creative Vision Child	4001 Deodar St., East Chicago, IN 46312
Child Care Facility	Leon Lynch Learning Center	1410 Broadway St., East Chicago, IN 46312
Senior Care Facility	St. Joseph's Carmelite Home	4848 Grasselli St., East Chicago, IN 46312
Senior Care Facility	Regal Adult Day Services	502 W 142nd St., East Chicago, IN 46312
Senior Care Facility	Hammond-Whiting Care Center	1000 114th St., Whiting, IN 46394
Senior Care Facility	Lake County Nursing and Rehabilitation Center	5025 McCook Ave., East Chicago, IN 46312
Senior Care Facility	Albertine Sisters	1501 Hoffman St., Hammond, IN 46327

3. ACTIVITIES, METHODS, AND CHANNELS OF COMMUNICATION

Upon approval of the CRP, a copy of the February 2024 RWP and associated CRP will be made available for review in the Robert A. Pastrick Branch East Chicago Public Library, located at 1008 W. Chicago Avenue, East Chicago, Indiana 46312. A public notice of the availability of the RWP and its location will be placed in the classified section of The Times of Northwest Indiana newspaper. If public inquiry requires additional information, Marport LLC will support additional community relations activities accordingly. COC impacts are limited to on-site groundwater. Considering there are no off-site impacts of COCs, Marport LLC will send written notice to the adjacent property owners and property occupants, neighborhood organizations, and sensitive community institutions to inform them of Marport LLCs RWP and CRP. A sample written notice is included in this CRP as Appendix A.

FIGURES

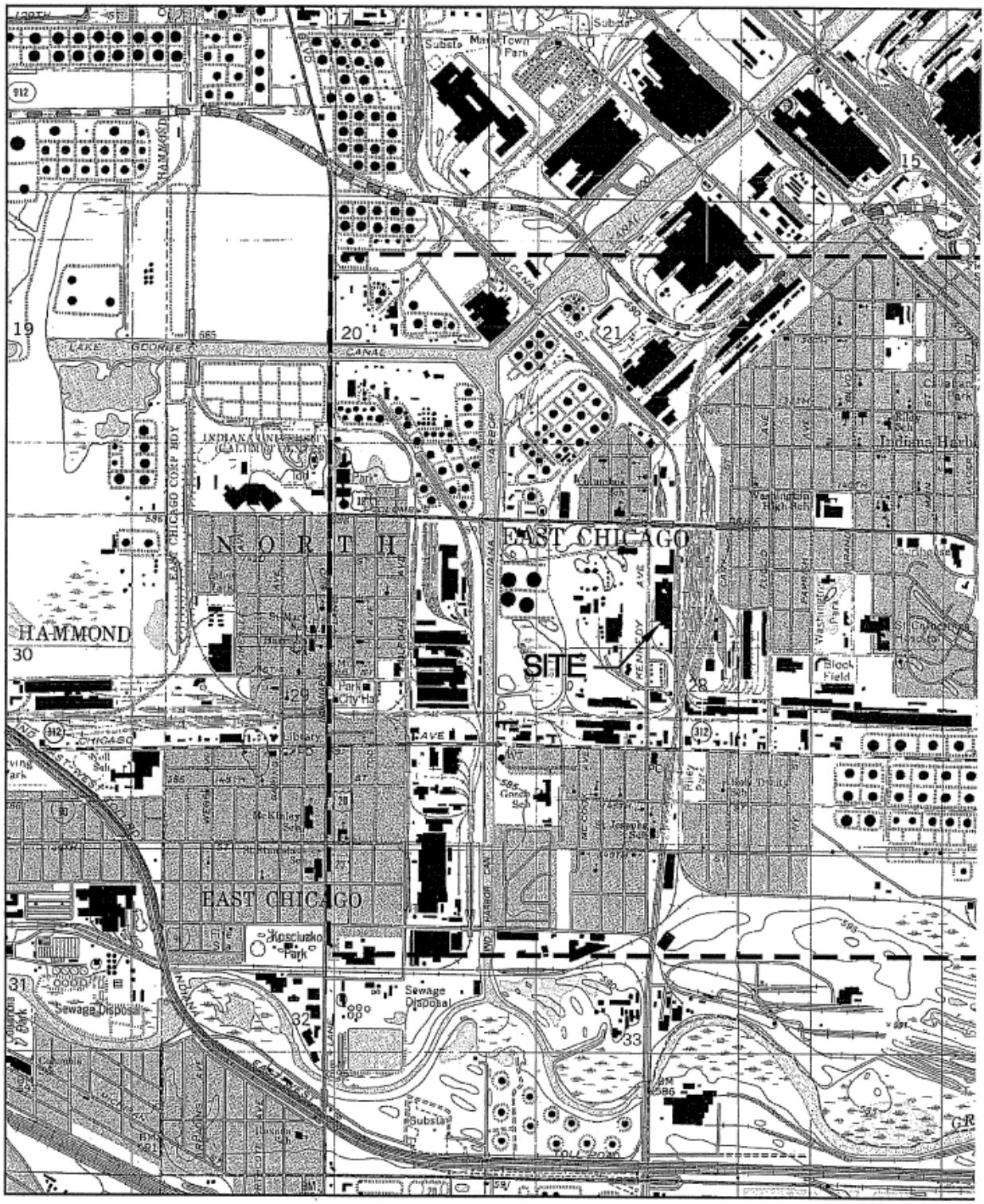


FIGURE 1
SITE LOCATION MAP
MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

FIGURE 2
SURROUNDING LAND USE
MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

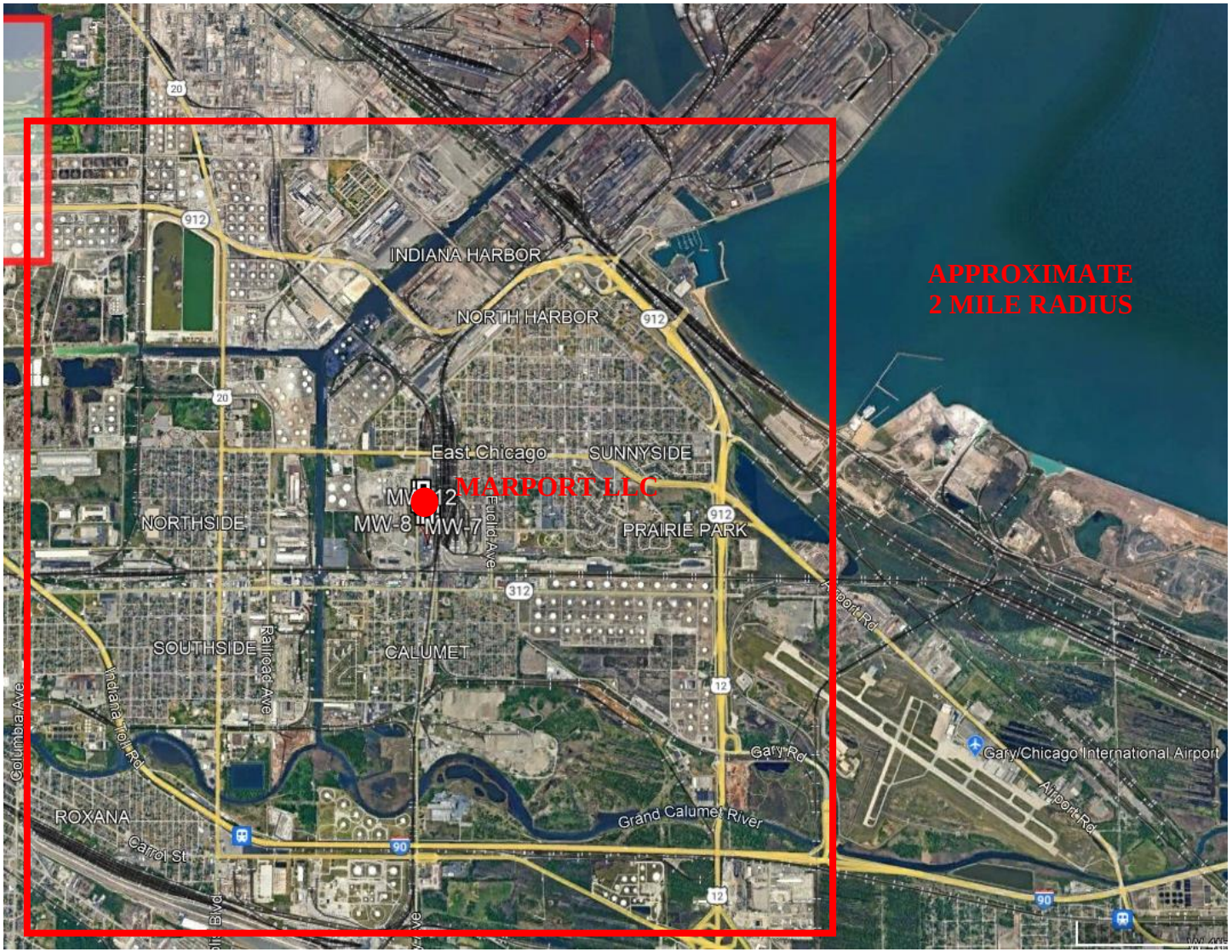


FIGURE 3
AREA MAP – 2-MILE RADIUS
MARPORT LLC (FORMERLY OSHARAI INDIANA) SITE

Trinity Consultants

APPENDIX A. SAMPLE WRITTEN NOTICE TO PROPERTY OWNERS

WRITTEN NOTICE

This notice is being provided to inform you of the presence of a site in your neighborhood that has been accepted into IDEM's Voluntary Remediation Program. This notice is a requirement of a Community Relations Plan which has been developed by Marport LLC and is a component of the Remediation Work Plan that is available for review at the repository listed below. The Community Relations Plan includes provisions for notifying all neighboring property owners and occupants, neighborhood organizations and other local entities. In addition, the Community Relations Plan may require the applicant to post an informational sign at the subject property. For additional information about the Community Relations Plan and the Remediation Work Plan please review the documents in the repository or contact the IDEM Project Manager at (317) 234-0973."

This notice is a requirement of a Community Relations Plan, which has been developed by Trinity Consultants, on behalf of Marport LLC, and is a component of the Remediation Work Plan that is available for review online within IDEM's Virtual File Cabinet at the address located below.

https://www.in.gov/idem/legal/public-records/virtual-file-cabinet/

Additionally, a paper copy of the Remediation Work Plan will be available at the Robert A. Pastrick Branch East Chicago Public Library as listed below. The Community Relations Plan includes provisions for notifying all neighboring property owners and occupants and other local entities.

Work to be performed at the site includes recording an environmental restrictive covenant (ERC) on the property deed of the Marport LLC property. The public comment period is 30 days from the date of publication of this notice. To comment on the VRP Project documents at the Robert A. Pastrick Branch East Chicago Library in East Chicago, Indiana, number the comments: refer to the document and page number you are commenting on. Address your comments to the Indiana Department of Environmental Management, Voluntary Remediation Program, 100 N. Senate Avenue, P.O. box 6015, Indianapolis, Indiana 46206-6015.

For additional information about the Community Relations Plan and the Remediation Work Plan, please review the documents in the Robert A. Pastrick Brand East Chicago Library in East Chicago, Indiana (219) 367-6715 or contact the IDEM Project Manager, Claire Fedin, at (317) 234-9731.

APPENDIX B. IDEM MAILING LISTS

Base List: **UPDATED** 8/2023--**Please note –** notifications may now be e-mailed, rather than delivered via postal mail, where an e-mail address is provided. Please call G. Oakes at 317/233-1052 or e-mail goakes@idem.IN.gov regarding any address changes or returns

COLLEEN AGUIRRE
9043 HESS DR
HIGHLAND, IN 46322-2132

MS TITA LAGRIMAS
TRADEBE TREATMENT & RECYCLING LLC
4343 KENNEDY AVENUE
EAST CHICAGO, IN 46312
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DIR ENVIRO & ENERGY
INDIANA MFG ASSOCIATION
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aberger@indianamfg.com

STEVE DANENMAN
HERITAGE ENVIRONMENTAL SERVICES, LLC
7901 WEST MORRIS ST
INDIANAPOLIS, IN 46231
Steve.Danenman@heritage-enviro.com

CHAD SLIDER
DEPT OF NATURAL RESOURCES ROOM 274
ASSISTANT DIRECTOR OF ENVIRO REVIEW
HISTORIC PRESERVATION & ARCHAEOLOGY
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Sandra Minniear
Heritage Environmental Services
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Indianapolis, IN 46231
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MICHIGAN CITY IN 46360

MICHAEL FOSTER
ELI LILLY & COMPANY
LILLY CORPORATE CENTER
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Mr. Norberto Gonzalez
Land and Chemicals Branch, LL-17J
Land, Chemicals, and Redevelopment Division
U.S. EPA Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
gonzalez.norberto@epa.gov

Tradebe 5/2023

Please note – notifications may now be e-mailed, rather than delivered via postal mail, where an e-mail address is provided.

Please call G. Oakes at 317/233-1052 or e-mail goakes@idem.IN.gov regarding any address changes or returns you receive

EAST CHICAGO MAYOR
4527 INDIANAPOLIS BLVD
EAST CHICAGO IN 46312
yorta@eastchicago.com or
sfavela@eastchicago.com

DEPUTY COORDINATOR
LAKE CO FIRE CHIEFS ASSOCIATION
2900 W 93RD AVE
CROWN POINT IN 46307
lakefirechiefs@sbcglobal.net

Rosalba Cisneros
rcisneros@eastchicago.com

66-20 1368 goakes
EAST CHICAGO HEALTH DEPT
100 W CHICAGO AVENUE
EAST CHICAGO IN 46312-3299
Tailes@eastchicago.com

USWA DISTRICT 7 RM 207
1301 TEXAS ST
GARY, IN 46402
barajas@usw.org

LAKE COUNTY HEALTH DEPT
2293 N MAIN STREET
CROWN POINT, IN 46307-1896
doffinx@lakecountyin.org

Tyler Easley
ECCC-CAG
easleyta@lawclinic.uchicago.edu

Lori Locklear
lalocklear@aol.com

LAKE COUNTY COMMISSIONERS
LAKE COUNTY GOVERNMENT CNT
2293 N MAIN ST, BLDG A
CROWN POINT, IN 46307
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66-20 1368 goakes
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SCHERERVILLE IN 46375

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