AECOM

Remedial Action Plan

Former Production Area VOC Source Area
Former Ciba-Geigy Facility   EPA ID No. RID001194323

BASF Corporation

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1. Introduction

AECOM has prepared this Remedial Action Plan (RAP) on behalf of BASF Corporation (BASF) for the former Ciba-Geigy facility, located at 180 and 200 Mill Street in Cranston, Rhode Island (the Site). A Site locus map is provided as **Figure 1**. This RAP evaluates remedial alternatives and presents a plan to address source material in the former production area (FPA) at the Site. Source material is defined as areas of dense non-aqueous phase liquids (DNAPL) that represent a source of volatile organic compound (VOC) impacts to groundwater at the Site. This RAP also addresses polychlorinated biphenyls (PCBs) in the FPA at concentrations greater than the cleanup levels specified in the United States Environmental Protection Agency's (USEPA's) June 2018 approval of BASF's risk-based disposal application described in the Corrective Measures Implementation Work Plan (2018) and related correspondence.

This RAP provides a brief history of the Site, discusses recent work and relevant environmental data, summarizes the findings of a focused evaluation of remedial alternatives, and presents a remedial plan to address VOC and PCB impacts present in the southern corner of the FPA of the Site, where this source material is inferred to be present. In addition, the RAP describes a post-remediation groundwater monitoring program to evaluate groundwater quality following remediation of source material located immediately adjacent to the river.

1.1 Site Background and History

The Site was a chemical manufacturing facility operated by Alrose Chemical Company beginning in 1939. The Site consists of the FPA, the Office/Warehouse/Laboratory area (OWLA), the former wastewater treatment area (FWWTA), and the adjacent portion of the Pawtuxet River (**Figure 2**). The layout of the FPA, and the current Site structures/features are depicted on **Figure 3**.

The Geigy Chemical Corporation of New York began operating at the facility in 1954 and later merged with the Ciba Corporation in 1970 and became known as Ciba-Geigy (Ciba). The facility was used for batch manufacturing of organic chemicals, such as plastics additives, optical brighteners, pharmaceuticals, and textile auxiliaries. Ciba ceased all chemical manufacturing operations in May 1986 when the facility was closed. Following closure, the FPA was demolished to grade, where building foundations and subsurface structures were left in place. The OWLA buildings were left in place in the northern portion of the Site.

1.2 Site Description and Environmental Setting

The Site comprises an elongated parcel of land that is approximately 5.5 acres, located at 180 and 200 Mill Street in Cranston, Rhode Island. The Site is bounded by residential properties on Mill Street and Sunset Terrace to the north, Mill Street, the Safety Kleen property, and another BASF property to the west, the Pawtuxet River to the southeast, and residences on Robert Circle to the east and northeast.

The FPA gently slopes downward from Mill Street toward the Pawtuxet River. Along the southeastern edge of the FPA, an approximately 30- to 50-foot strip of the Site is located in the flood plain of the Pawtuxet River at an elevation two to three feet below the rest of the Site. That portion of the Site is separated from the Pawtuxet River by a steel bulkhead retaining wall. At its nearest point, the riverbed is approximately eight feet lower in elevation than the ground surface at the Site.

1.3 Historical Site Investigation and Remediation

Ciba and USEPA signed a consent agreement in 1989 to enter the Site into the Resource Conservation and Recovery Act (RCRA) Corrective Action program. Ciba performed initial investigation activities and interim remedial measures (IRMs), including capping of contaminated sediment in the Pawtuxet River, and submitted a Site Investigation Report (SIR) in 1999 and a supplemental SIR in 2009.

In 2009, BASF acquired the Ciba Corporation, which had been conducting the remediation at the Site. BASF conducted additional characterization of groundwater and soil, derived an updated conceptual site model, and evaluated remediation alternatives for the Site. This work is documented in the 2012 Supplemental Remedial Investigation (SRI) Report, 2016 SRI Revision, and 2016 final Corrective Measures Study for the Site. During performance of site investigation and remedial evaluation, several IRMs were completed to control potential risks and remove source material. These IRMs included: excavation and off-Site disposal of PCB-impacted soil in several areas (see **Figure 4**); soil vapor extraction to address a historic toluene pipeline spill; and installation, operation, and maintenance of a groundwater extraction and treatment system.

In May 2016, USEPA issued a Statement of Basis (SOB) identifying the remedial approach for the Site. The 2016 SOB identified the following corrective measures to remediate impacts remaining in the FPA:

- Excavation and off-site disposal of soil impacted with PCBs and VOCs, followed by placement of a clean soil cap over the area;
- In-situ treatment and natural monitored natural attenuation of residual groundwater impacts remaining following excavation of source material. The in-situ treatment specified by the SOB was a permeable in-situ chemical oxidation (ISCO) barrier in the vicinity of the southern portion of the Site bulkhead, where the VOC groundwater plume extends to the river;
- The imposition of an Environmental Land Usage Restriction (ELUR) on the FPA, to be approved by the Rhode Island Department of Environmental Management (RIDEM), requiring open space reuse only and long-term cap maintenance and monitoring; and
- Periodic monitoring of the existing sediment cap in the Pawtuxet River adjacent to the FPA to ensure that it is functioning as intended.

Following issuance of the SOB, BASF performed the following remediation activities:

- BASF performed soil excavation, disposal, and capping work (AEI, 2020). This work entailed the following elements:
    - Supplemental delineation of PCB impacts to support USEPA approval of a risk-based disposal application / Corrective Measures Implementation Workplan (AEI, 2018);
    - Excavation and off-Site disposal of over 5,000 tons of impacted soil in 2018;
    - Post-excavation sampling to verify that cleanup was completed to the USEPA-approved levels of an average concentration (as determined by the 95% upper confidence limit of the mean) of 10 milligrams per kilogram (mg/kg) PCBs with a maximum concentration of 25 mg/kg; and
    - Backfilling and restoration of the Site in 2019.
- BASF performed in-situ groundwater remediation implementation, maintenance, and monitoring activities (CEC, 2020), including:
    - Delineation of VOC impacts in the southern corner of the FPA, including soil sampling, a membrane interface probe (MIP) study, monitoring well installation, and groundwater sampling;
    - Bench-scale testing of ISCO technologies and pilot-scale testing of alkaline activated potassium persulfate (AAKP), the chosen ISCO technology; and
    - Installation of 16 wells equipped with a series of AAKP-filled filter socks to create a permeable reactive barrier (PRB) by introducing oxidant into the aquifer in an approximately 40-foot-long stretch along the bulkhead near the southern corner of the Site in 2019 and periodic oxidant replacement since that time.
- Recording a RIDEM-approved ELUR prohibiting residential use and groundwater use at the property and requiring maintenance and inspection of the clean soil cap in January 2022.

Based on data obtained during the implementation of the in-situ groundwater remedy in the southern corner of the Site, it was observed that while the dissolved-phase contaminant distribution aligned with previous characterizations, the treatment zone contained a confining layer beneath the water table in which VOC mass had accumulated as DNAPL exceeded the treatment capacity of the chosen remedy. Consequently, the installation report (CEC, 2020) recommended further characterization to evaluate the source conditions and transport pathways, followed by necessary modifications to achieve the treatment objectives. In 2022, BASF performed a supplemental groundwater investigation in the southern corner of the site near the PRB installation to further evaluate groundwater discharge to the river, potential DNAPL, and deeper PCB impacts (Fuss & O'Neill, 2023). Based on the results of that assessment, it was determined that additional remedial measures would be necessary to address soil impacts in the southern corner of the FPA.

BASF therefore reviewed historic data, data from the remedial design and implementation work, and data from recent assessment activities to develop this RAP, which proposes to address VOC source material and PCB impacts located near the river bulkhead toward the southern corner of the FPA in the vicinity of the ISCO PRB (see **Figure 3**). This RAP summarizes the data used to develop a plan for supplemental source material removal actions to further remediate the Site, describes the planned remedial activities, and outlines a post-remediation monitoring program by which to evaluate whether additional active remediation is necessary in the upland area to meet cleanup objectives at the Site. A post-remediation groundwater monitoring program will be implemented to characterize groundwater impacts following the completion of soil remediation.

2. Environmental Data Evaluation

Environmental data associated with the remediation area for this RAP are described in the following sections. The area for which additional remediation is proposed herein is located in the southern corner of the FPA. This area is the primary area where COCs in Site groundwater, including chlorobenzene, 1,2-dichlorobenzene, toluene, 2-chlorotoluene, and xylenes, extend to the riverfront. The distribution of these COCs and of PCBs is discussed in the following sections, along with a brief overview of the Site conceptual model.

2.1 Geology and Hydrogeology

The FPA is underlain by urban fill (2 to 8 feet thick), including sand, silt, and gravel, as well as concrete and metal debris. Below the fill is a silty sand unit (10 to 15 feet thick) of alluvial origin. In the southwest quadrant of the FPA, a fairly homogeneous, low permeability, gray alluvial silt is present (2 to 10 feet in thickness beginning approximately 10 to 15 feet below the ground surface [feet bgs]). A unit of relatively homogeneous, 20 to 30-foot-thick fine sand and silty sand is present below that. At the base of the overburden aquifer, a 5 to 10-foot thick glacial till unit directly overlies bedrock in the FPA. The top of competent bedrock is present at a depth of approximately 50 to 70 feet bgs. A cross-sectional representation of Site stratigraphy is included as **Figure 5**.

The water table is approximately 7 to 10 feet bgs across the FPA, and groundwater flows toward the Pawtuxet River. The natural discharge point for Site-related groundwater is the Pawtuxet River, which is a gaining water body adjacent to the Site. The groundwater flow is affected by the sheet pile bulkhead wall that extends to a depth of 25 feet bgs, and groundwater is deflected downward under the wall as it migrates toward the river.

2.2 Groundwater Impacts

Groundwater impacts are limited to the southern portion of the FPA and are associated with past plant operations that occurred primarily in Building 16, (see **Figure 3** and **Figure 4**) where the VOCs that form the primary COCs were used in production and where a former jet sump leak occurred on the river side of the building. Observed groundwater impacts are primarily composed of 1,2-dichlorobenzene, chlorobenzene, 2-chlorotoluene, toluene, and total xylenes. PCB concentrations greater than the USEPA maximum contaminant level (MCL) have also been observed in groundwater in the Building 16 area. A summary of groundwater data considered in the development of this RAP is provided in **Appendix A**.

Data describing recent distribution of VOCs in groundwater are taken from the SRI (AECOM, 2016), the high-resolution mass flux profile study (profile study) performed in support of PRB design (CEC, 2020), and the 2022 supplemental groundwater investigation (Fuss & O’Neill, 2023). The SRI identified VOC concentrations above applicable standards in the southeastern portion of the FPA, from Building 19 and Building 21 to the Pawtuxet River. VOC concentrations of note include chlorobenzene, 1,2-dichlorobenzene, 2-chlorotoluene, toluene, and total xylenes. Concentrations exceeded 1% of the solubility values for chlorobenzene at five locations (GW-7, GW-8, P-35S, MW-101D, and MW-102D; see **Appendix A-1**) and for toluene at one location (MW-102D), suggesting the possibility of non-aqueous phase liquid (NAPL) upgradient or proximate to the sampling locations prior to the 2018 performance of soil remediation.

The profile study included the performance of groundwater VOC analysis at discrete intervals in MIP borings within the plume area. Chlorobenzene concentrations were greatest in the 16 to 18 feet bgs interval within the finer-grained silt unit. This is generally the case for 1,2-dichlorobenzene, as well. High concentrations of chlorobenzene and 1,2-dichlorobenzene were detected in groundwater at wells XMIP-3, XMIP-4, XMIP-19, and XMIP-20. Figures and tables summarizing groundwater and MIP data from the CEC report that were used in this evaluation are provided in **Appendix A-2**.

The 2022 supplemental groundwater investigation identified impacts in the piezometers (PZ-01DR, PZ-01SR, PZ-03SR, PZ-04S, PZ-04D, PZ-05S) for both chlorobenzene and 1,2-dichlorobenzene above media screening levels (MSL). Analysis of groundwater for PCBs showed PCB congeners exceeding the Toxic Substances Control Act (TSCA) 0.5 micrograms per liter (µg/L) unrestricted use standard upgradient and downgradient of the bulkhead in wells FMW-01, FMW-02, PZ-01D2, and PZ-05D. However, these samples were collected proximate to soil that is contaminated with PCBs. Figures and tables summarizing groundwater data from the supplemental groundwater investigation report (Fuss & O'Neill, 2023) that were used in this evaluation are provided in **Appendix A-3**.

2.3 Soil Impacts

Data describing the current distribution of VOCs in soil are taken from the SRI (AECOM, 2016), the high-resolution mass flux profile study performed in support of the PRB design (CEC, 2020), and the Fuss & O'Neill (2023) focused investigation. The SRI identified chlorobenzene and dichlorobenzene impacts in the vicinity of Building 16 with the highest concentrations limited to the eastern end of the building near the area of the jet sump release (see **Appendix B-1**). While the data from the SRI indicate that chlorobenzene concentrations previously extended further north and west than 1,2-dichlorobenzene, concentrations were much lower than those that might be considered indicative of a DNAPL source material, and many impacts have been removed by soil excavation. The highest concentrations of 1,2-dichlorobenzene detected in SRI soil borings were generally found at depths between 8 and 14 feet bgs with moderate concentrations detected between 19 and 24 feet bgs.

The profile study found that DNAPL consisting primarily of 1,2-dichlorobenzene was found at XMIP-3 in the 15 to 18 feet bgs range. Additional DNAPL staining was observed XMIP-12 in the 9 to 12 feet bgs range. Soil data indicated that the impacts were primarily chlorobenzene at this location, although soil concentrations were not indicative of DNAPL (see Section 2.4) at this location. Visual evidence (i.e., black color and heavy sheen) in boring logs for wells STW-2A, STW-2B, STW-3B, STW-6B, and STW-7B indicate the presence of DNAPL at a depth of approximately 14 to 17 feet bgs in a coarse-grained sandy lens within the silt unit. No analytical sampling was conducted in these borings. The PCB concentrations detected in soil borings FSB-01, FSB-02, FSB-03, and FMW-01 were above the approved TSCA standards. Figures and tables summarizing soil data from the CEC report that were used in this evaluation are provided in **Appendix B-2**.

Fuss & O'Neill identified elevated VOC concentrations at depths of 8 to 14 feet bgs within and above the sand-silt/clay interface in the vicinity of the concrete deadman associated with the bulkhead wall. Elevated PCB concentrations were also identified near the limits of the previous PCB excavation especially in areas with subsurface structures that obstructed excavation (building foundations, tie-back system for bulkhead, etc.). Tables summarizing soil data from the Fuss & O'Neill report that were used in this evaluation are provided in **Appendix B-3**.

2.4 DNAPL Evaluation

The soil excavation program performed in 2018, while designed to address PCBs, also resulted in the removal of vadose zone VOC impacts. The remedy identified in the SOB included natural attenuation of residual groundwater impacts from upgradient sources and in-situ treatment of groundwater impacts that extend to the river in the southern portion of the Site. These near-river groundwater impacts are present in a limited area (the study area), within which DNAPL has been observed and can be inferred from analytical data at some sampling points, as noted by USEPA in their August 2023 comments on the Fuss & O'Neill (2023) report. This DNAPL represents a source of impacts that exceeds the treatment capacity of the in-situ groundwater remediation effort and thereby is preventing attenuation of groundwater impacts in this area. The DNAPL evaluation was performed in and upgradient of areas where concentrations of chlorobenzenes have been detected that exceed media protection standards (MPS) adjacent to the river.

To determine the extent of this residual source material, AECOM performed a DNAPL evaluation, using the approach described in Kueper and Davies (2009), which incorporates multiple lines of evidence to evaluate whether DNAPL is present in the subsurface. To perform the DNAPL evaluation, AECOM reviewed data for soil borings, monitoring wells, MIP probes individually to assess the likelihood of DNAPL being present at each location. The data used in the evaluation are provided in **Appendix A**. The following lines of evidence were considered in the DNAPL evaluation (the lettering is taken from Kueper and Davies, 2009):

A. Visual observation of DNAPL, either in a well or in a soil excavation. Such observation is considered conclusive evidence of DNAPL.

B. Chemical concentrations in soil above threshold DNAPL saturation – Soil concentrations indicative of DNAPL at saturations above typical residual saturation levels (5% of pore space) for mass beyond that calculated in C below. Evidence of concentrations above saturation limits is considered conclusive evidence of DNAPL.

C. Chemical concentrations in soil above partitioning threshold – Soil concentrations indicative of contaminant mass that exceeds the maximum theoretical concentration that is possible at fully saturated equilibrium conditions sorbed to soil, dissolved in groundwater, and present in soil vapor. Because the parameters used in this calculation (e.g., local soil organic carbon content) are subject to some uncertainty, evidence of concentrations in excess of the theoretical maximum is treated as evidence of likely DNAPL that can act as a source of groundwater contamination and requires remediation.

D. Site use and history – particularly areas with known or potential releases of source material in a non-aqueous form. The entire study area is considered a potential release area based on the former use of Building 16. This line of evidence was part of the basis for the area evaluated but is not otherwise used for this evaluation, as it applies to the area as a whole and does not provide a basis for distinguishing between individual locations.

G1. Magnitude of groundwater concentrations – Concentrations in excess of 1% of solubility or 10% of solubility were used to infer the presence of nearby DNAPL. However, because there is known DNAPL in the area, concentrations are expected to exceed 1% at locations that are not in the immediate vicinity DNAPL. Therefore, the 10% metric was used to infer the possible presence of DNAPL.

G2. Persistent plume – Concentrations of DNAPL constituents that do not attenuate over time. This line of evidence was the primary reason for performing the DNAPL in the area evaluated but is not otherwise used for this evaluation, as it applies to the area as a whole and does not provide a basis for distinguishing between individual locations.

G4. Groundwater concentration trends with depth – Also considered for MIP instrument response that increased with depth below the water table. While this was considered, recent data, including MIP response, are obfuscated by removal of shallower contamination during prior excavation programs.

H1. Other – Photoionization detector (PID) response in soil screening samples greater than 100 parts per million by volume (ppmv) was used as evidence of possible DNAPL.

H2. Other – Results of MIP halogen-specific detector (XSD) response, which identifies concentrations of chlorinated solvents like chlorobenzenes in groundwater and soil.

Other lines of evidence considered by Keuper and Davies (2009) (e.g., vapor concentrations, hydrophobic dye testing results) were considered not applicable to this evaluation.

The derivation of theoretical maximum concentrations based on equilibrium portioning for lines of evidence B and C are provided in **Table 1**. These calculations were performed for both chlorobenzene and 1,2-dichlorobenzene. Chlorobenzene and 1,2-dichlorobenzene were determined to be the predominant VOCs in the study area. 1,2-Dichlorobenzene was generally the predominant VOC detected in the samples with the highest total VOC concentrations in the study area. These samples were collected near the bulkhead in the vicinity of the former jet sump release, whereas chlorobenzene was the predominant VOC detected in samples in the portions of the study area further north and inland of the jet sump release area, where total VOC concentrations detected are somewhat lower. Because DNAPL analytical data is not available, effective solubilities were estimated based on soil sample results in the study area. Analytical data for samples from soil borings XMIP-3 and XMIP-12 were used to calculate mole fractions of these two compounds for use in estimating effective solubility values for use in evaluating lines of evidence B, C, and G1. These data and the calculation of mole fractions are provided in **Table 2**.

Based on this review of data, AECOM assigned the evidence of DNAPL at each location as one of the following:

- Convincing evidence of DNAPL;
- Evidence of likely DNAPL;
- Evidence of possible DNAPL; or
- No significant evidence of DNAPL.

The results of this evaluation are presented in **Table 3** and are depicted on **Figure 6**. The area of inferred likely DNAPL spans an approximately 50-foot by 50-foot area along the southern end of the riverfront, near former Building 16. MIP data suggest that possible DNAPL extends an additional 30 feet further north beyond the area depicted on **Figure 6**. Additional assessment by a soil boring program is recommended to further evaluate whether chlorobenzene or dichlorobenzene concentrations in soil suggest likely DNAPL in this area.

3. Evaluation of Remedial Action Alternatives

A focused evaluation of remedial action alternatives was performed to determine how best to address residual source material in the inferred likely DNAPL area. The area of inferred likely DNAPL was identified as the remediation target area for this RAP. This area was determined to be an approximately 50-foot by 50-foot area to a maximum depth of 23 feet bgs and average depth of approximately 20 feet bgs comprising a clean fill cap, clean backfill materials, PCB contaminated soils, and DNAPL VOC source material. The total volume of the remediation target area is estimated at approximately 1,875 in place cubic yards based on the area and depth approximations and is included in the alternatives discussed under this section.

3.1 Remedial Action Objective

The objective of the remedial actions evaluated below is to remove or treat (i.e., solidify and stabilize) source material that includes soil and DNAPL containing VOCs that exceeds the treatment capacity of the in-situ groundwater remediation effort and is thereby preventing attenuation of groundwater impacts in this area.

3.2 Identification of Alternatives

Prior remedial evaluation work had demonstrated that in-situ technologies were unlikely to work. Air sparging and SVE were pilot tested during the CMS process and found to be ineffective, due to the presence of low permeability strata below the water table. Similarly, in-situ chemical oxidation (ISCO) by direct injection was determined during pre-design activities to not be practicable for targeting residual source material in the silt unit. In-situ treatments like persulfate injected PRB were previously used on Site and did not show specific evidence of treating the DNAPL source material.

The remedial action alternatives chosen for evaluation include both excavation and in-situ solidification and stabilization technologies to treat the DNAPL VOC source material to prevent leaching into groundwater. The alternatives evaluated included three general approaches:

1. Excavation in the dry
2. Excavation in the wet
3. Solidification

Under each of these three generalized approaches, a series of alternatives were developed. These alternatives are detailed below.

3.2.1 Approach 1: Excavation in the Dry

This approach involves removing soil in the remediation target area when the excavation is dewatered, thereby making the excavation dry. Two alternative methods to perform excavation in the dry are described below.

3.2.1.1 Alternative 1A: Excavation with sheet piling driven into the till layer

Alternative 1A includes excavation and off-Site disposal of PCB- and DNAPL-impacted material within the remediation target area using interlocking steel sheet piles to support the excavation side slopes and to cut-off groundwater infiltration to the excavation. Excavated soil would be transported off-site for disposal to a licensed disposal facility based on waste characterization sampling.

Prior to excavation, soil would be sampled in-situ to pre-characterize the waste in accordance with TSCA regulations. Clean fill in the remediation target area would first be excavated, stockpiled on-Site, and later used to backfill the excavation. For purposes of this evaluation, it was assumed that the clean fill excavation would be completed to an average depth of 5 feet bgs.

Following excavation of the clean fill, sheet piles would be driven around the excavation perimeter and seated into the till layer, which is assumed to be 60 feet bgs in the remediation target area (based on the depth observed at MW-31D). The sheet piles would be used to shore the excavation and limit groundwater infiltration during excavation dewatering and are assumed to be 65 feet long to shore into the till layer. It is assumed that dewatering wells would be placed every 5 feet along the perimeter of the excavation and require a flow rate of 100 gallons per minute (gpm) to remove standing water in the excavation and keep the excavation dry. Soil management would be conducted during excavation activities including waste segregation and stockpile management. Erosion control measures would be required until the site is stabilized. Air monitoring, dust control, and possibly odor control measures would be required during the course of the excavation activities. Soils would be disposed off-Site at an appropriate licensed disposal facility as determined by the pre-characterization sampling and additional waste characterization sampling, as required.

Following excavation and disposal, Site restoration would occur, including backfilling and grading to existing grade with clean soil from an off-Site source or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the flood plain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of the source removal on groundwater quality.

3.2.1.2 Alternative 1B: Excavation with sheet piling driven above the till layer

Alternative 1B includes excavation and off-Site disposal of PCB- and DNAPL-impacted material within the remediation target area using interlocking steel sheet piles to support the excavation side slopes and to reduce groundwater infiltration to the excavation. Excavated soil would be transported off-site for disposal to a licensed disposal facility based on waste characterization sampling.

Prior to excavation, soil would be sampled in-situ utilizing TSCA sample guidance to pre-characterize the waste. Clean fill in the remediation target area would first be excavated, stockpiled on-Site, and then used to backfill the excavation. For purposes of this evaluation, it was assumed that the clean fill excavation would be completed to an average depth of 5 feet bgs.

Following completion of clean fill excavation, 50-foot-long interlocking sheet piles would be advanced around the excavation perimeter to sufficient depth to support the excavation and limit groundwater infiltration below the excavation. These sheet piles will be driven from the bottom of the clean fill excavation to approximately 55 feet bgs. Because the shoring would be driven below the excavation, but not into less permeable substrate, the dewatering flow rate would be higher than in Alternative 1A. It is assumed that dewatering wells would be placed every 5 feet along the perimeter of the excavation and require a flow rate of 500 gpm to keep the excavation dry.

Soil management would be conducted during excavation activities including waste segregation and stockpile management. Erosion control measures would be required until the site is stabilized. Air monitoring, dust control, and possibly odor control measures would be required during excavation activities. Soils would be disposed off-Site at an appropriate licensed disposal facility as determined by the pre-characterization sampling and additional waste characterization sampling, as required.

Following excavation and disposal, Site restoration would occur, including backfilling and grading to existing grade with off-Site clean soil or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the flood plain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of the source removal on groundwater quality.

3.2.2 Approach 2: Excavation in the Wet

This approach involves excavating DNAPL-impacted soils when saturated, thereby “in the wet.” No dewatering of the excavation is considered. Two alternatives for conducting these excavations are described below.

3.2.2.1 Alternative 2A: Excavation with trench boxes or slide rail system

Alternative 2A includes excavation and off-Site disposal of PCB and DNAPL-impacted material within the remediation target area. Excavated soil would be transported off-site for disposal to a licensed disposal facility based on waste characterization sampling.

Prior to excavation, soil would be sampled in-situ utilizing TSCA sample guidance to pre-characterize the waste. Clean fill in the remediation target area would first be excavated, stockpiled on-Site, and then used to backfill the excavation. For purposes of this evaluation, it was assumed that the clean fill excavation would be completed to an average depth of 5 feet bgs.

Following completion of clean fill excavation, the PCB and DNAPL-impacted material excavation would commence using trench boxes or slide rails to excavate the remediation target area in trenches within the boxes or rails. No dewatering would be considered because the anticipated groundwater infiltration rate for this type of shoring would exceed the capacity of a dewatering treatment system that could be reasonably mobilized to the Site. Self-compacting ¾ inch stone would be used as a backfill material within the saturated excavation area.

Soil management would be conducted during excavation activities including waste segregation, stockpile management, and decant water management. The excavated material would require addition of a drying agent by a minimum 8% by volume. The excavated material would require placement in a drying bed or similar where decant water would be collected post-excavation. The decant water would be disposed of at a licensed off-Site facility or treated on-Site. Erosion control measures would be required until the Site is stabilized. Air monitoring, dust control, and possibly odor control measures would be required during the course of excavation activities and during excavated material stockpile/drying activities. Soils would be disposed off-Site at an appropriate licensed disposal facility as determined by the pre-characterization sampling and additional waste characterization sampling, as required.

Following excavation and disposal, Site restoration would occur, including backfilling and grading to existing grade with off-Site clean soil or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the flood plain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of the source removal on groundwater quality.

3.2.2.2 Alternative 2B: Excavation via large-diameter auger

Alternative 2B includes excavation and off-Site disposal of PCB and DNAPL-impacted material within the remediation target area. Excavated soil would be transported off-site for disposal to a licensed disposal facility based on waste characterization sampling.

Prior to excavation, soil would be sampled in-situ utilizing TSCA sample guidance to pre-characterize the waste. Clean fill in the treatment area would first be excavated, stockpiled on-Site, and then used to backfill the excavation. For purposes of this evaluation, it was assumed that the clean fill excavation would be completed to an average depth of 5 feet bgs.

Following completion of clean fill excavation, the PCB and DNAPL-impacted material would be excavated using large-diameter augers (e.g., 4 to 5-foot diameter) within the remediation target area. No dewatering would be considered under this alternative as it is unnecessary with this technology. The saturated excavation area would be backfilled with either clean fill or a slurry mixture.

Soil management would be conducted during excavation activities including stockpile management and decant water management. The excavated material would require addition of a drying agent by a minimum 8% by volume. The excavated material would require placement in a drying bed or similar where decant water would be collected post-excavation. The decant water would be disposed of at a licensed off-Site facility or treated on-Site. Erosion control measures would be required until the site is stabilized. Air monitoring, dust control, and possibly odor control measures would be required during the excavation activities and during excavated material stockpile/drying activities. Soils would be disposed off-Site at an appropriate licensed disposal facility as determined by the pre-characterization sampling and additional waste characterization sampling, as required.

Following excavation and disposal, Site restoration would occur, including backfilling and grading to existing grade with off-Site clean soil or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the floodplain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of the source removal on groundwater quality.

3.2.3 Approach 3: Solidification

This approach uses in-situ solidification and stabilization (ISS) for all or a portion of the soil in the remediation target area. Two alternatives for remediating the DNAPL-impacted soils with ISS is presented below.

3.2.3.1 Alternative 3A: In-situ solidification and stabilization

Alternative 3A includes excavation of PCB-impacted soil and in-situ solidification and stabilization (ISS) of DNAPL-impacted material within the remediation target area.

Prior to ISS, soil would be sampled pre-characterize the waste sufficient to obtain USEPA approval to perform ISS on some or all of the soil. ISS is not an established remedy for PCBs. However, it could be approved under a risk-based approval if the highest, most accessible concentrations were first removed. For comparison purposes, the PCB excavation is assumed to be comparable to the other alternatives. Delineation would be performed to identify what additional soil removal would be required to allow ISS to serve as the remainder of the remedy. A bench scale study would also be conducted prior to implementation of Alternative 3A to evaluate appropriate materials and determine if ISS would meet contaminant leachability goals (i.e., prevent VOCs and PCBs from leaching at concentrations above MPS), and to optimize the pozzolanic ISS admixture formulation.

Clean fill in the remediation target area would first be excavated, stockpiled on-Site, and later used to backfill the excavation. Following completion of clean fill excavation, targeted removal of soil impacted with the highest concentrations of PCBs would be removed and then large-diameter augers (e.g., 4 to 5-foot diameter) would be used to solidify and stabilize the saturated subsurface using grout or a similar material in the remediation target area. It is assumed that paddle auger mixing would be used for the solidification mixture to the depth of impacts (averaged 20 feet bgs across the remediation target area with a maximum depth of 23 feet bgs). For costing purposes, it is assumed that 500 tons of soil would be disposed as TSCA-regulated PCB remediation waste (>50 ppm).

Erosion control measures would be required until the Site is stabilized. A silt curtain would be placed in the river to control potential grout seepage.

Following ISS, Site restoration would occur, including backfilling and grading to existing grade with off-Site clean soil or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the floodplain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of ISS on groundwater quality. Because the source area would be solidified, this monitoring program would focus on deep groundwater and groundwater beneath the Pawtuxet River.

3.2.3.2 Alternative 3B: In-situ solidification and stabilization along the perimeter and excavation

Alternative 3B includes excavation and off-Site disposal of PCB and DNAPL-impacted material within the remediation target area. Excavated soil would be transported off-site for disposal to a licensed disposal facility based on waste characterization sampling.

Prior to excavation, soil would be sampled in-situ utilizing TSCA sample guidance to pre-characterize the waste. A bench scale study would be conducted prior to implementation of Alternative 3B to evaluate appropriate materials and determine if ISS would meet contaminant leachability goals (i.e., prevent VOCs and PCBs from leaching), and to optimize the pozzolanic ISS admixture formulation.

Clean fill in the remediation target area would first be excavated, stockpiled on-Site, and then used to backfill the excavation. For purposes of this evaluation, it was assumed that the clean fill excavation would be completed to an average depth of 5 feet bgs.

Following completion of clean fill removal, excavation of the DNAPL and PCB-impacted materials would commence. This alternative combines ISS and excavation, employing ISS along the remediation target area perimeter to provide hydraulic containment and excavation support and then excavating within that area to remove PCB and DNAPL-impacted soil. A large-diameter auger (e.g., 4 to 5-foot diameter) would be used to solidify and stabilize the subsurface using grout or a similar material along the perimeter of the remediation target area. The perimeter ISS would be used to stabilize the excavation and mitigate infiltration into the excavation. It is assumed that paddle auger mixing will be used for the solidification mixture to the till layer (approximately 60 feet bgs). PCB and DNAPL-impacted saturated subsurface soils would be excavated and disposed of off-Site once the ISS perimeter was completed. It is assumed that dewatering wells would be placed every 5 feet along the perimeter of the excavation and require a flow rate of 100 gpm to keep the excavation dry.

Soil management would be conducted during excavation activities including waste segregation and stockpile management. Erosion control measures would be required until the Site is stabilized. A silt curtain would be placed in the river to control potential grout seepage. Air monitoring, dust control, and possibly odor control measures would be required during the course of excavation activities. Soils would be disposed off-Site at an appropriate licensed disposal facility as determined by the pre-characterization sampling and additional waste characterization sampling, as required.

Following ISS, excavation, and disposal, Site restoration would occur, including backfilling and grading to existing grade with off-Site clean soil or excavated clean fill and re-vegetation to control erosion. The two-foot clean fill cap would be re-established in areas outside of the floodplain and the ground surface returned to existing conditions (see **Appendix C**).

Following remediation, a groundwater monitoring program would be implemented to assess the effect of the source removal and ISS on groundwater quality. Because the downgradient edge of the source area would be solidified, this monitoring program would focus on deep groundwater and groundwater beneath the Pawtuxet River.

3.3 Alternatives Evaluation

3.3.1 Initial Screening

An initial screening of remedial alternatives developed in Sections 3.3 through 3.5 was performed to eliminate alternatives that do not appear likely to be effective or as cost-effective. The screening process identified alternatives that are carried through to a more detailed evaluation. This initial screening process included an assessment of the advantages and disadvantages of each alternative on the basis of their anticipated effectiveness. Anticipated effectiveness for the initial screening was defined as the ability of the technology to perform the desired work. **Table 4** outlines the effectiveness itself (as proven, not proven, or with other caveats) and advantages and disadvantages to perform each alternative. At this stage of the evaluation, costs were initially assessed using engineering judgement, considering capital costs for equipment and construction. More detailed cost estimates were developed as part of the detailed evaluation.

The screening of the alternatives is summarized in **Table 4**. Alternatives 1B, 2A, and 3A were retained for detailed evaluation. Alternatives 1A, 1C, 2B, and 3B were screened out during this initial analysis. The rationale for inclusion or screening of each alternative is provided below.

- **Alternative 1A** (Excavation with sheet driven piling into the till layer) was screened out due to its higher cost than Alternative 1B with no associated increase in effectiveness. Alternative 1A is comparable to Alternative 1B in terms of effectiveness and implementability. Both would effectively provide excavation support and limit water infiltration into the excavation. Both can be implemented. Alternative 1B has more uncertainty regarding dewatering flow rates. However, Alternative 1A is expected to be more costly due to specialized equipment requirements for driving deeper shoring into till and challenges with using longer sheeting at the site. Based on the anticipated increased cost and similar effectiveness, Alternative 1A was screened out and Alternative 1B was retained. Because Alternative 1A and 1B are similarly effective and employ the same technologies (i.e., shoring and dewatering), it is possible that future pre-design investigation data may cause a re-evaluation of the relative merits of these two approaches. For example, aquifer permeability data may indicate that the estimated dewatering flow rate required in Alternative 1B is greater than estimated herein, making Alternative 1B more challenging, or the average depth to till could be found to be shallower across the remediation target area, improving the implementability of Alternative 1A. However, for purposes of this evaluation, only Alternative 1B was retained.

- **Alternative 2B** (Excavation via large diameter augers) was screened out because of effectiveness concerns. Digging in the wet means that visual and olfactory cues cannot be used to verify that all DNAPL was excavated. Additionally, it is possible that DNAPL could be disturbed and drain during augering and remain at the base of the excavation. Alternative 2B was determined to be the more expensive technology of the two wet excavations due to increased equipment costs and volume of soils shipped due to required auger overlap.
- **Alternative 3B** (ISS of the boundaries of the remediation target area with excavation of the center of the area) was screened out as unlikely to be cost-effective because it combines two technologies that require extensive mobilization efforts without providing any material benefit. ISS is a more expensive form of shoring than sheet piling and would not significantly reduce disposal or water treatment costs if used only for that application.

3.3.2 Detailed Evaluation

A detailed evaluation of remaining alternatives (Alternative 1B, 2A, and 3B) was conducted to evaluate each of the alternatives. The following six criteria were evaluated during the RAP.

- Effectiveness;
- Reduction of toxicity, mobility, or volume;
- Implementability;
- Community acceptance; and
- Cost.

A detailed discussion of each of these alternatives is presented in **Table 5**. A discussion comparing each of the alternatives is presented below:

3.3.2.1 Effectiveness

Each alternative was evaluated with respect to short-term and long-term effectiveness. Short-term effectiveness was evaluated with respect to risks to the community and workers. Long-term effectiveness was evaluated with respect to risks associated with the technology itself or any residual risks from conducting the alternative. The ability to meet regulatory requirements (MPS and PCB cleanup criteria) are also an important factor in the effectiveness of each alternative.

Alternatives 1B and 2A, both of which employ excavation, are proven technologies. However, Alternative 2A (excavation in the wet) has greater potential to allow source material to remain in place because the water in the excavation prevents direct observation and subsequent removal of impacted soil at the margins of the excavation. Alternative 3A employs ISS to prevent leaching of chlorobenzenes to groundwater. However, ISS is an unproven technology for chlorobenzenes. Only one peer-reviewed study was found evaluating ISS and chlorobenzene stabilization; this research concluded that chlorobenzene-impacted soil leached at higher than expected rates when stabilized (Berggren, Khuri, & Grubb, 2023). While bench testing would be performed to optimize the implementation of ISS, there is less certainty regarding ISS effectiveness than excavation.

The ability to meet regulatory requirements is also a major component to the effectiveness of these alternatives. Alternative 1B (excavation in the dry) would meet regulatory requirements by excavating source material in the remediation target area. While Alternative 2A (excavation in the wet) also excavates source material in the remediation target area, it is somewhat less likely to meet regulatory requirements, because excavating in the wet may leave source material in the excavation. Alternative 3A also may not meet regulatory requirements if chlorobenzenes leach from the stabilized soil.

3.3.2.2 Reduction of toxicity, mobility, or volume

The relative reduction in toxicity, mobility, or volume of the source material for each alternative was evaluated with respect to the degree to which a method controlled exposure, prevented constituent migration, or resulted in the destruction of the COCs.

Alternatives 1B and 2A would reduce the toxicity, mobility, and volume by removal of the source material. Alternative 2A (excavation in the wet) has the potential to leave more residual source material than Alternative 1B (excavation in the dry), and therefore is less preferred. Alternative 3A uses ISS which inherently reduces mobility and therefore toxicity, but not volume on Site.

3.3.2.3 Implementability

The implementability of each alternative was evaluated with respect to how implementable the alternative is for the Site given the presence of the river and bulkhead, dewatering requirements, monitoring requirements, etc. Additionally, the primary uncertainties with implementing each alternative were reviewed.

The alternatives are implementable. Each would be implementable at the waterfront with the bulkhead by supplementing or replacing the bulkhead with a permanent structure (additional sheet pile in Alternative 1B and stabilized soil in Alternative 3A) or by excavating around the bulkhead and subsurface infrastructure (trench box/slide rail in Alternative 2A). Alternative 3A would require extensive laboratory testing, possibly field pilot testing, and potentially additional monitoring to demonstrate its effectiveness as a remedial technology for this Site.

Uncertainty exists in each alternative’s implementability. Alternative 1B requires further analysis to determine the dewatering flow rate and system design and Alternative 3A will require bench testing and possibly pilot testing to verify effectiveness and develop design parameters. The uncertainties regarding implementation of Alternative 1B can be managed using established engineering techniques, whereas greater uncertainty exists regarding implementation of Alternatives 2A and 3A.

3.3.2.4 Community Acceptance

Each of the alternatives were evaluated in terms of the factors that could influence community acceptance, including the potential for disturbance to the neighborhood adjacent to the Site (e.g., due to trucking, noise, or visible disturbance to the Site), the likelihood of follow-up activities being required, and potential for impact to the river. Alternatives 1B and 2A will increase truck traffic for soil removal activities. Alternative 3A would not increase truck traffic but has greater potential to impact the river due to the use of grout in the ISS process in the floodplain. Best management practices would be utilized to control potential impacts to the river through erosion controls and booms or silt curtains and to the community through the use of noise and air quality monitoring and dust or odor controls.

3.3.2.5 Cost

Cost estimates were developed for each alternative and are provided in Appendix D. Alternative 2A was the least expensive followed by Alternatives 3A and 1B at approximately $4.3, $4.4, and $4.9 million, respectively.

3.3.3 Findings of the Alternatives Evaluation

Based on the above analysis, Alternative 1B (excavation in the dry) was chosen as the preferred remedial option. Although there is some uncertainty regarding dewatering requirements and other alternatives were less expensive, Alternative 1B was selected because it is the most effective, implementable, and reliable means to remove VOC source material.

4. Remediation Technical Approach

The focused remedial evaluation of alternatives determined that excavation with sheet pilling (Alternative 1B) is the preferable remedial option. This section describes the implementation of that remediation approach at the Site.

4.1 Summary of Remediation Approach

Figure 7 depicts the plan view of the remedial approach (excavation with sheet piling to approximately 55 feet bgs), and **Figure 8** depicts the cross sections.

The remedial approach will be conducted in the following sequence of events:

- A pre-design investigation (PDI) will be performed to better delineate the extent of source material to be excavated and to obtain design parameters for shoring installation and dewatering.
- Removal of clean fill: Known clean fill will be removed and stockpiled in a designated area. This includes topsoil and clean fill cap. Based on AEI's CMI Completion Report (2019), clean fill within the area is assumed to extend an average 5 feet bgs for the purposes of this RAP; (Actual depth is demarcated by geotextile fabric.)
- Shoring: Fifty-foot sheet piles will be driven around the excavation area starting at approximately 5 feet bgs, resulting in a total installed depth of approximately 55 ft bgs);
- Dewatering: Groundwater dewatering wells will be spaced approximately 5 feet apart around the perimeter of the treatment zone. The required drawdown is assumed to be 500 gpm for the purposes of this RAP; however, further groundwater testing is required for a more accurate treatment design, especially in the area bordering the river;
- Excavation of PCB-impacted soil: PCB-impacted soil containing 50 mg/kg or greater will be excavated, and verification sampling will be conducted, as needed, in accordance with the conditions of an USEPA-approval prior to excavating the remaining material for management as containing less than 50 mg/kg. PCB-impacted soil is within the saturated zone of the excavation area and is comingled with VOC DNAPL-impacted soils. Based on recent investigation (CEC, 2020; F&O, 2023), PCB-impacted soil exceeding 50 mg/kg is located in saturated soils around the deadman (XMIP-3, STW-5B, FSB-01, FSB-02, FSB-03, FMW-01);
- Excavation of VOC DNAPL-impacted soils: VOC DNAPL-impacted soil will be excavated within the excavation area depicted on **Figure 7**;
- Disposal: Excavated materials will be transported to appropriate licensed disposal facilities;
- Backfill and Site restoration: Clean fill will be backfilled and compacted in the area of excavation. The clean fill removed from the Site will be replaced as the clean fill cap. The shoring along the river will be left in place, but the remainder will be removed from the ground. The excavation area will be restored including loam and seed with a seed mix consistent with the existing soil cover design (see **Appendix C**), and
- Performance monitoring: Post-remediation groundwater monitoring will be performed to evaluate whether residual groundwater impacts exceed MPS.

4.2 Pre-Design Investigation

A PDI will be conducted to refine the delineation of the probable DNAPL treatment area and to develop design parameters before finalizing the design. The following tasks will be completed during the PDI:

- Delineate probable DNAPL source material by performing soil sampling in the area north of the excavation area, where possible DNAPL was inferred from MIP data;
- Delineate PCB concentrations greater than 50 mg/kg within the excavation area;

- Obtain geotechnical data for design of shoring, as needed;
- Obtain soil quality data to support preliminary waste characterization;
- Perform aquifer permeability testing of the deep overburden for use in dewatering calculations; and
- Collect groundwater samples for testing of water treatment parameters.

Delineation data will be provided to USEPA in a supplemental Corrective Measures Implementation (CMI) Work Plan, which will serve as the application for a TSCA risk approval. The remainder of the findings of the PDI will be incorporated into the detailed design and reported in a CMI Completion Report.

4.3 Permitting and Approvals

BASF is requesting USEPA/RIDEM review and approval of this RAP to perform remediation on VOC DNAPL source material as described herein.

BASF will submit a notification to USEPA for approval of PCB remediation waste disposal activities in accordance with 40 CFR 761.61(c). This notification will be based on the results of post-remediation verification sampling from the 2018 PCB remediation effort and the results of the PDI described in Section 4.2. It is anticipated that the notification will request approvals consistent with the prior USEPA approval, and the data obtained during the PDI will be used to supplement the verification sampling dataset from the prior work to support the segregation of PCB impacted soil. The planned VOC excavation extends sufficiently far beyond the area where PCB concentrations that exceed the previously approved cleanup levels were found that delineation of PCB impacts above cleanup standards (i.e., 25 mg/kg with 95% upper confidence limit for a mean concentration of 10 mg/kg) will not be required.

All relevant state and local permits and approvals will be obtained as part of this work. BASF will submit a wetland permit application to RIDEM for approval of remediation work conducted within the floodplain in accordance with 250-RICR-150-15-3. BASF will also submit a public notification with environmental justice enhancement to RIDEM Office of Land Revitalization and Sustainable Materials Management for review when USEPA provides technical concurrence with the recommendation in this RAP. BASF will work with RIDEM Office of Customer and Technical Assurance staff to coordinate the above approvals and general permits that are expected to be required, such as the Stormwater General Permit for Construction and Soil Erosion and Sediment Control (SESC) plan and Rhode Island Pollutant Discharge Elimination Permit (RIPDES) for discharge of treated dewatering water. Toward the conclusion of permitting activities, BASF will submit a request to RIDEM to release the ELUR for performance of the remediation.

4.4 Remedial Implementation

4.4.1 Site Preparation

The following activities will be performed prior to commencement of remedial activities.

4.4.1.1 Sedimentation and Erosion Controls

Prior to the performance of any clearing or earthwork activities, an erosion and sedimentation control system (straw bales or wattles and/or silt fence) will be installed around the proposed limits of disturbance and in accordance with the wetlands permit requirements. Site erosion and sedimentation controls will be installed and maintained in accordance with the SESC plan. The location of the proposed SESC measures and details for construction will be shown on the construction drawings. To maintain the effectiveness of the soil erosion and sediment control measures throughout remedial construction activities, these features will be inspected regularly. If sediment deposits reach one-half the height of the barrier, sediments will be removed from the barrier and managed by removal for on-Site management or off-Site disposal, as applicable based on the source of the accumulated sediments.

4.4.1.2 Work Zones and Staging Areas

The work zones and staging will be performed on the FPA parcel behind a security fence to protect the public and prevent disruption of the remediation activities. Temporary facilities installed during the work may include work trailers, decontamination facilities, portable sanitary facilities, and temporary storage units.

The excavation area will be demarcated by a pre-construction survey, and a subsurface geophysical survey will be performed to identify the locations of subsurface structures, former utilities, and bulkhead tiebacks within the excavation area. The location of these features will inform the excavation implementation sequencing, as described in Section 4.4.2.1.

Prior to performing remedial excavation, the general work area will be divided into three work zones to reduce the potential spread of contaminated materials into clean areas. These three zones will be clearly delineated and will include:

- Hot Zone – Areas with material to be excavated or managed that contains impacted materials at concentrations above the established cleanup levels will be identified as the hot zone. Access to the hot zone will be controlled. Only authorized personnel will be allowed to enter a hot zone;
- Decontamination Zone – A secure area will be established for decontamination of equipment and personnel and for access control in an area adjacent to the hot zone; and
- Clean Zone – An area will be designated for clean operations. Personnel, vehicles, supplies, and supply trailers will be located in this zone. All clean activities may be carried out in this area.

Each of these areas will be located within the fenced Site boundaries. Access to the Site will be strictly controlled both during performance of the remediation and during non-work hours.

Multiple waste streams will be generated during remediation activities at the Site. Temporary stockpiling of materials on Site may be required at times until a critical volume of material is generated to improve the efficiency of transportation and disposal. Stockpile areas will be lined and constructed in such a way to prevent spreading of waste material and erosion by rainwater. Stockpiles will be covered daily and when not in use. The location of stockpile staging areas will be outside of the 200-foot wetland boundary.

PCB remediation waste will be stored in accordance with 40 CFR 761.65(c)(1)(3) or 761.65(c)(9). Storage areas and containers will be marked in accordance with 40 CFR 761.45(a). Segregation of PCB remediation waste will be performed in accordance with the terms of USEPA's approval of the PCB remediation waste disposal notification described in Section 4.3.

The source of VOC impacts in the excavation area is understood to be residual DNAPL contained in the soil. As described in Section 2.4, the DNAPL is not expected to be present as a free-flowing fluid in the subsurface, but rather is trapped by capillary pressure in the soil matrix. However, because excavation has the potential to remove the capillary pressure holding residual DNAPL in place, VOC-impacted waste will be stored in fully enclosed containers, such as roll offs.

Secure stockpiles will also be established for clean excavated material and clean backfill imported to the Site. Such material will be contained by erosion controls but will typically not be covered.

Prior to being transported off-Site, wastes will be characterized and profiled for disposal. Soil may be sampled in-situ for waste disposal parameters to speed the management of excavated soil, or composite soil stockpile samples will be collected for waste characterization. The disposal facility will confirm acceptance of the waste prior to transport. Regulated waste will be disposed of at a facility permitted to accept such wastes.

When wastes are transported off-Site, waste removal will be documented by manifest or bill of lading. BASF will be the generator of the waste, and a BASF representative will sign waste profile forms and manifests. The waste disposal contractor will prepare disposal manifests or bills of lading and documentation. The disposal documentation will be included in the CMI completion report.

4.4.1.3 Shoring

The selected remediation contractor will design shoring to support the excavation. The shoring will consist of sheet pile with sealed or welded interlocks that extend to sufficient depth to limit groundwater infiltration into the excavation below the capacity of the excavation dewatering treatment system. It is anticipated that shoring will be installed after the clean fill excavation is completed and be driven from a depth of approximately 5 feet bgs. Shoring installation along the riverfront will be performed in a sequenced fashion, where the tiebacks that secure the existing bulkhead to the concrete deadman will be replaced by tiebacks between the bulkhead and the excavation shoring. The shoring placed adjacent to the riverfront will be designed such that it can be a permanent structure that supplements the existing bulkhead, subject to appropriate approvals during the permitting process. The other shoring will be temporary and will be removed at the end of the work.

4.4.1.4 Dewatering and Water Treatment System

A dewatering system will be designed by calculating a dewatering rate using Site-specific hydraulic conductivity and hydraulic head data. Well points will be placed around the perimeter of the excavation based on the dewatering design such that the excavated area is dry. It is currently assumed that 1-inch well points spaced approximately every 5 feet with denser well point spacing along the riverfront and an approximate flow rate of 500 gpm will be sufficient to dewater the excavation during the performance of the remediation. A pump and well system would be designed by a dewatering contractor based on the aquifer data.

Extracted groundwater would be treated on Site before discharging to a permitted discharge point that will be determined during the design and permitting process. Surface water, groundwater, or sewer may act as discharge points. A process-flow diagram for a typical treatment system is presented in **Figure 9**.

Water would first be pulled from the dewatering well points into weir tanks for phase separation of solids. The water would then run through filters to further remove any fine particles before entering liquid granular activated carbon vessels (LGAC) that would treat organic contaminants in the water. Water would then be discharged to the appropriate and permitted discharge point with polishing treatment, as needed dependent on testing.

4.4.2 Remedial Implementation

4.4.2.1 Excavation Sequencing

The excavation will contain the following steps:

1. Removal of clean material down to marker fabric
2. Removal and verification of PCB-impacted soil
3. VOC excavation
4. Backfilling

4.4.2.2 Excavation

There are three phases to the excavation: removal of clean materials, removal of PCB-impacted soil, and VOC excavation. Removal of clean soils to the demarcation fabric will primarily occur above the water table. Clean soils will be placed in a separate staging area to allow reuse following completion of the excavation.

Following removal of the clean soil cover, the remaining clean unsaturated zone soil will be excavated to approximately 1 foot above the water table to create a bench for the deeper shored VOC soil excavation. The side slope along the excavation perimeter will be approximately 1.5 horizontal to 1 vertical. The excavated clean soil will be stockpiled on-Site and used as backfill when the excavation is complete. Excavation of the unsaturated zone soils is expected to extend to approximately 7 to 10 feet bgs across the treatment area.

After the bench at the water table is excavated, the shoring and dewatering wells will be installed, dewatering within the excavation area will commence, and soil inside the shoring limits will be excavated. This excavation will include both PCB and DNAPL-impacted soils. Excavation will remove likely DNAPL-impacted soils, as illustrated on the preliminary design drawings provided on **Figure 7**. The excavation will end at varying depths depending on likely DNAPL-impacted soil depths (also indicated on **Figure 7**. On average, soils will be excavated to 20 feet bgs with the maximum excavation to 23 feet bgs. **Figure 8** depicts a typical cross section of the excavation with these depths.

After the excavation is completed and before backfilling begins, the addition of amendments to the excavation will be considered. The amendment would be the same oxidant used in the ISCO PRB, AAKP. The AAKP is a slow-release oxidant that would help treat any residual source material and groundwater contamination at the margins of the excavation area. The dosing of AAKP would be determined during design, based on the soil oxidant demand testing performed for the ISCO PRB, and is proposed to be implemented as an adaptive management technique. Locations for addition of persulfate would be based on field screening observations during excavation, where elevated VOC impacts not indicative of residual source material are observed. (Residual source material would be excavated.) Potassium persulfate would be premixed with clean sand backfill and mixed into or placed on the bottom of the excavation before the excavation is backfilled. A layer of quicklime mixed with clean sand backfill would be placed atop or below the persulfate, and natural groundwater recharge would be allowed to distribute the oxidant into the subsurface over time. Similar application would be possible along the sides of the excavation, where AAKP is applied at specific depths of elevated VOC impacts. Details of the field screening methods, AAKP dosage, and application techniques will be further defined during remedial design.

It is anticipated that the PCB-impacted soil area will require verification soil samples post-removal. However, given the hazards of collecting samples from deep excavations with DNAPL-impacted soil, it is anticipated that a request to excavate to fixed excavation limits, based on pre-design sample results, may be submitted to USEPA for approval.

Concrete and debris will be demolished and removed if it is encountered during excavations; other concrete is to be left in-place. Any concrete within the PCB-impacted soil area is assumed to be impacted by PCBs at the same concentrations as underlying soil and shall be managed appropriately.

4.4.2.3 Verification Sampling

Following removal of soil containing PCBs at concentration in excess of USEPA-approved cleanup levels, verification sampling will be performed at the approved sampling frequency, as needed. A request to pre-verify the excavation limits may be submitted to the USEPA to limit or eliminate the need to perform sampling in an active deep excavation. Following verification of removal of PCBs to the approved cleanup levels, VOC excavation will proceed to the designated excavation limits without additional verification sampling. However, visible, olfactory, or field screening evidence of DNAPL at the limits of the excavation will be removed.

4.4.2.4 Backfilling

Following excavation, backfilling of the excavated areas will commence. Clean fill or other appropriate materials (e.g., crushed stone or similar pre-compacted material) will be used for backfill. Clean common backfill material and appropriate surface fill materials (processed gravel or other approved material) will be imported from an off-Site source. Imported common fill will be tested prior to being transported to the Site. Testing will comprise of the full suite of RIDEM soil constituents at a rate of one composite sample for every 1,000 cubic yards of soil imported. Imported stone will be from a certified clean source. All data and certifications will be reviewed and approved prior to delivery of imported materials to the Site. The backfill will be compacted as appropriate.

The clean soil covers shall be re-installed on Site to meet the coverage requirements under the Soil Management Plan in the ELUR. In part, this will entail replacing the geomembrane liner/ demarcation layer and soil cover with soil PCB concentrations remaining at greater than or equal to 10 mg/kg and a clean soil cover over areas with soil PCB concentrations remaining at greater than or equal to 1 mg/kg. The previous clean soil cap may be used if properly segregated. Topsoil shall be placed on the cap and seeded with wildflower seed blend.

4.4.2.5 Dust and Odor Control and Air Monitoring

Dust control and air monitoring is an important component of the remediation activities. The National Ambient Air Quality Standard (NAAQS) for Respirable Particulates (defined as PM_{10}) established by the USEPA is a maximum concentration of 150 micrograms per cubic meter ($\mu g/m^3$). Based on this standard, community dust exposure from construction activities should not exceed 150 $\mu g/m^3$ above the background level. In cases where dust-borne particles have the potential to result in exposure to contaminants, a lower action level is often established. For the work proposed herein, a conservative, risk-based action level will be developed based on the potential for exposure to Site COCs.

The primary VOCs at the Site are chlorobenzene and 1,2-dichlorobenzene which have reference concentrations (RfC) of 70 and 300 µg/m³, respectively. In addition to the health-based action levels, these compounds have the potential to produce odors that have the potential be discernible in downwind areas. The contractor will be required to have odor suppressing fluorine-free foam available on-Site, as needed. However, other control measures (e.g., plastic encapsulation) will be preferred.

Air monitoring for dust and VOCs will be performed at upwind and downwind locations in the work areas to ensure that construction activities comply with NAAQS. Handheld data loggers will be used to monitor dust and VOC levels. If air monitoring results indicate concentrations greater than an action level (excluding background levels), dust or odor suppression may need to be implemented. This could include the following:

- Applying water mist to active work areas and truck routes;
- Applying water mist to construction equipment and materials; or
- Applying odor-reducing foam to work areas or stockpiles.

Air monitoring thresholds for worker protection will be developed as part of the health and safety plan.

4.4.2.6 River Monitoring

Impacts to the river are not anticipated during work. This section provides a contingency monitoring program should impacts be observed. Visual monitoring will be performed of the river each workday. If a sheen is observed on the water surface, work will stop and the proper authorities will be contacted (USEPA, RIDEM, Coast Guard, etc.). Booms will then be placed on the water for the duration of work. Daily visual monitoring would continue.

4.4.2.7 Waste Management

For off-Site soil disposal, the receiving facilities will be chosen based on waste characterization results, tipping fees, hauling fees, and the disposal facility’s operating permit. Any stockpiles of contaminated soil designated for off-Site disposal that are not actively being generated or removed will be covered with weatherproof tarps or poly sheeting secured with sandbags or other ballast.

Material excavated from beneath the water table will require dewatering prior to shipment off-Site for disposal. Dewatering beds will be constructed to allow free liquids to drain from such soil and will capture the free liquids for treatment by the on-Site water treatment system prior to discharge.

Waste streams will be segregated based on their PCB and VOC content. The waste categories are expected to include three PCB categories (1A to 1C below) and two VOC categories (2A and 2B below).

1A. PCB remediation waste containing 50 mg/kg PCBs or greater,

1B. PCB remediation waste containing greater than 1 mg/kg PCBs and less than 50 mg/kg,

1C. PCB remediation waste containing 1 mg/kg PCBs or less.

2A. Characteristically hazardous VOC-impacted soil, and

2B. Non-hazardous VOC-impacted soil.

Excavated soil will be categorized according to one of above PCB categories and one of the above VOC categories. Additional segregation may be performed based on facility acceptance criteria, or categories may be combined, where appropriate (e.g., non-hazardous VOC-impacted soil may not require segregation between PCB remediation waste categories 1B and 1C).

Segregation of PCB remediation waste will be performed based on pre-characterization data collected in-situ with additional verification sampling if required by USEPA. Initial segregation of VOC waste will be performed based on pre-characterization data with confirmation based on stockpile sampling.

PCB remediation waste is expected to be live-loaded or staged in lined staging areas, pending shipment off-Site. If PCB remediation waste is stockpiled, the stockpile will be constructed in accordance with 40 CFR 761.65(c)(9) using 20 mil poly sheeting as both cover and liner, bermed to prevent run-on and contain stormwater.

While passive dewatering is expected to be sufficient to dewater the bulk of excavated soils, finer-grained silts might require additional stabilization to meet facility acceptance criteria. If so, amendments such as cement kiln dust or super-absorbent polymers will be added prior to shipment off-Site.

During remedial excavation, material segregation will be conducted based on existing data and field observations. Additional segregation may be performed based on the results of stockpile sample analysis. After the excavated material is sufficiently and appropriately segregated, it will be managed accordingly. Trucks and/or containers will be loaded to within load limits and proper shipping papers will be provided prior to transport.

4.4.2.8 Decontamination

Decontamination of on-Site heavy equipment will be performed, as necessary, to minimize the potential spreading of contamination and dust. After dry brushing construction vehicles and equipment at each individual remediation area to remove loose soils and minimize dust, the vehicles/equipment will be decontaminated, as appropriate. For general decontamination of dump trailers, a stone construction entrance may be sufficient to complete decontamination. All vehicles brought onto the Site will be inspected and, if needed, will undergo decontamination/cleaning prior to use on-Site. Decontamination may include high-pressure water or a steam cleaner, if needed, to remove soils adhered to the vehicles. Pressure washing decontamination will be conducted on a temporary pad constructed for this purpose.

For equipment used during remediation of PCB impacted soils, decontamination of non-porous surfaces on equipment, tools, and machinery will be performed following procedures defined in 40 CFR 761.79(c)(2). Grimy, non-porous surfaces will be decontaminated following the procedures specified in 40 CFR 761.375.

Decontamination fluids generated from construction equipment will be temporarily containerized in Department of Transportation (DOT) drums for appropriate management. Containerized fluids will be labeled with the date of generation, contents, and source of decontamination fluid.

5. Post-Remediation Activities

Oversight responsibilities will include design and subcontracting of remedial construction activities, and management of these activities, including the preparation and maintenance of construction records for as-built documentation. The responsibilities will also include documenting that the project is completed in accordance with the elements of this RAP, future construction plans, and specifications, the conditions of any regulatory permits and approvals, and generally accepted industry/engineering standards.

5.1 Field Documentation

Detailed records of the construction activities will be maintained, including records of all subcontractor submittals and records of materials entering and leaving the Site. This includes weight tickets from the facilities which receive impacted material from the Site. Records of subcontractor submittals associated with imported materials will also be maintained, including contractor furnished products, materials, soil, and aggregate. No materials will be permitted to be imported to the Site without appropriate prior approval from the Site Engineer. In addition, the following records will be maintained:

- Photographic documentation of construction activities including, but not limited to, completed remediation and excavations, previously unknown areas of contamination (if encountered), and other pertinent observations;
- Logs of daily activities, Site conditions, weather, and safety meetings and observations;
- Records of changes to remediation design elements to accommodate field conditions;
- Documentation of segregation (if used), storage, and accounting of wastes that may be stockpiled at the Site;
- Documentation and reporting of spills, leaks, or other discharges occurring at the Site;
- Documentation of unknown utilities which may be encountered and/or work around utility structures and their condition prior to and following remediation;
- Documentation of sampling locations and measurements taken relative to survey benchmarks;
- Documentation of erosion control measures are appropriately employed and maintained, including a maintenance record of required repairs;
- Site security measures, including maintenance of a Site visitor log;
- Documentation of structures that are encountered, permanently removed and/or removed and replaced during excavation activities;
- Treatment system operations records including volumes of wastes generated;
- Waste transportation/disposal documentation; and
- Documentation of decontamination procedures prior to demobilization.

5.2 Post-Remediation Reporting Requirements

Following completion of remediation activities, a Remedial Action Report (RAR) will be prepared to document the work. The RAR will present details of the completed remediation including:

- Record Site plans or as-built drawings showing the vertical and horizontal limits of remedial excavations, and final grades upon completion of backfilling;
- Sample analytical data in tabular form comparing data to cleanup criteria, as applicable (e.g., for post excavation samples);
- As-built figures depicting extents of remediation, sampling locations, and remediation structures (e.g., shoring, etc.);

- Complete laboratory reports;
- Waste disposal documentation (manifests, bills-of-lading, certificates of disposal, etc.);
- Documentation of all materials incorporated into the project (sand, gravel, reuse soil etc.); and
- Select photographs of remediation activities.

5.3 Post-Remediation Groundwater Monitoring

Groundwater monitoring to assess the condition of Site groundwater will be implemented following soil remediation. The groundwater monitoring will involve the sampling of a subset of the Site monitoring wells and piezometers for COCs after the completion of the soil remediation. It is anticipated that the first monitoring event will be completed approximately six months after completion of excavation activities. The sampling locations will include currently existing monitoring wells, planned replacement monitoring wells, and piezometers in the Pawtuxet River. The planned soil excavation is expected to destroy most or all of the monitoring wells in the southwest portion of the Site. Replacement monitoring wells will be installed prior to the groundwater monitoring.

Groundwater monitoring will include several upgradient monitoring wells (MW-101S, MW-101D, and MW-14D) on the western portion of the Site, several monitoring wells (MW-34S, MW-34D, MW-102S, and MW-102D) in the center of the Site in the area of the upland soil cap structure and several wells (MW-1S and MW-1D) and up to four new monitoring wells in the excavation area near the Pawtuxet River, where certain wells would be removed during excavation. The sampling will also include piezometers (PZ-01SR, PZ-01DR, PZ-03DR, PZ-04D, and PZ-05S) located in the Pawtuxet River.

Samples will be collected in general accordance with USEPA low-flow sampling protocols. Collected groundwater samples will be analyzed by a State of Rhode Island registered analytical laboratory. Samples will be analyzed for VOCs by USEPA Method 8260, PCBs by USEPA Method 8082, sulfates by USEPA Method 4500, and field chemistry parameters (i.e., pH, conductivity, dissolved oxygen, and oxidation-reduction potential). The sampling will include the collection and analysis of quality control/quality assurance samples including trip blanks, replicate, equipment and field blank samples.

Analytical results of the sampling will be evaluated to understand the current condition of the groundwater across the Site and beneath the Pawtuxet River. Analytical results will be compared to MPS. The goal of the sampling is to provide a snapshot of groundwater conditions so that further monitoring objectives can be developed. The results of this post-remediation sampling will help develop a more long-term groundwater monitoring program.

6. Proposed Schedule

The anticipated schedule is provided in the table below. The schedule is subject to change, depending on permitting regulatory approval processes but provides a general outline of activities and expected timeframes for these major activities/milestones.

Activities	Anticipated Schedule	Dependent Upon
Upland Soil		
Submit Remedial Action Plan (RAP) to address soil in the DNAPL Source Area	June 2024	
Complete Upland Pre-Design Investigation	Fall 2024	USEPA RAP approval
Develop Upland Soil Remedial Design	Winter 2025	
Public Involvement Activities	Winter/Spring 2025	
Implement Upland Soil Remediation	Fall 2025	USEPA approval, permitting
Upland Remediation Completion Report	Winter 2025	
Groundwater		
Persulfate remediation	Ongoing – Will cease shortly prior to soil remediation	
Implement Groundwater Investigation Post-remediation groundwater monitoring	Spring & Fall 2026	Completion of upland soil remediation
Groundwater Investigation Report	Winter 2027	
Groundwater Remedial Action Plan (if necessary)	2027	Results of the groundwater investigation
Implement Additional Groundwater Remediation (if necessary)	2028	USEPA Groundwater Remedial Action Plan approval

7. References

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AECOM. 2014. Revised 2016. Corrective Measures Study, BASF Corporation, Former Ciba-Geigy Facility, 180 Mill Street, Cranston, Rhode Island.

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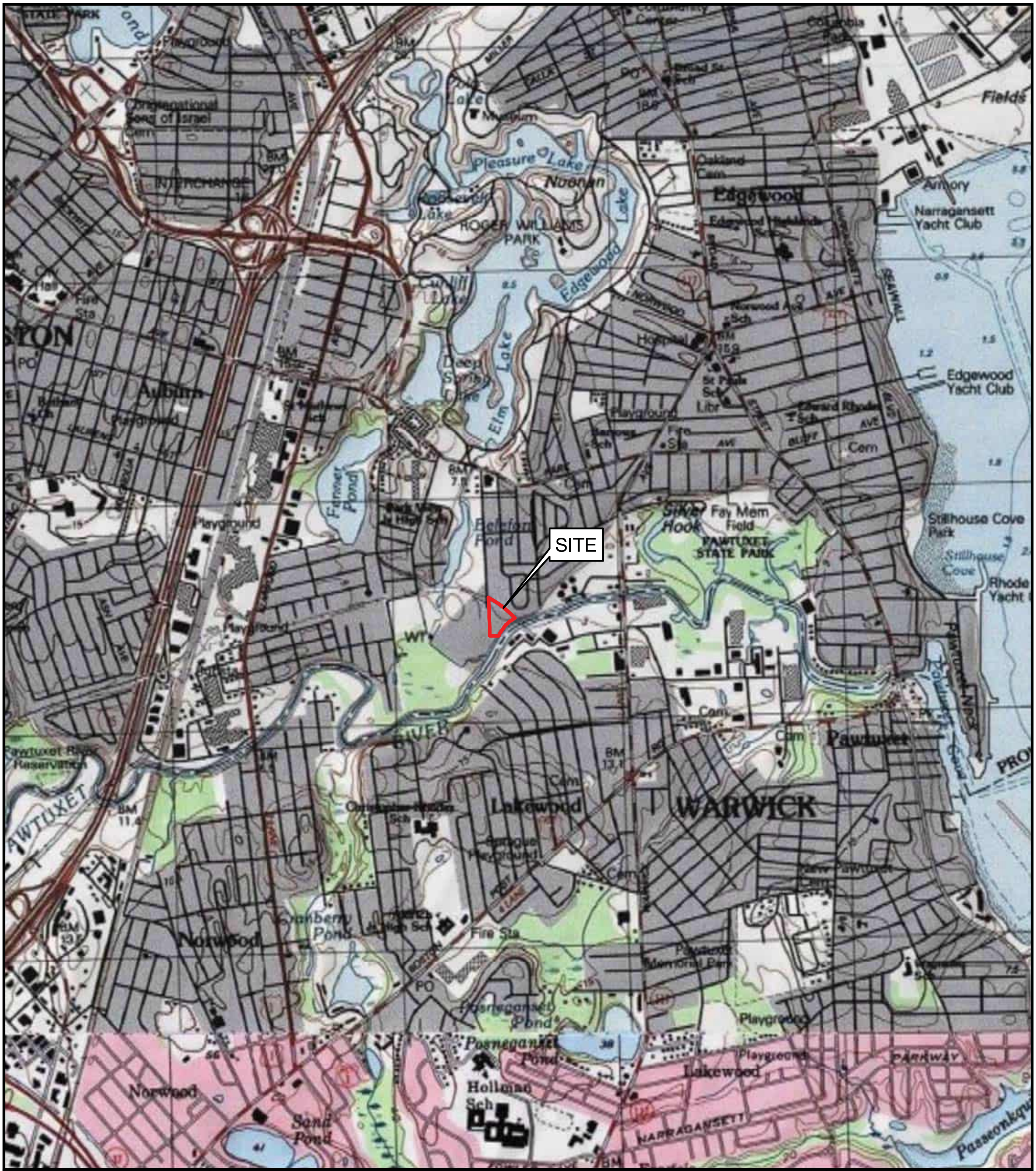
U.S. Environmental Protection Agency – Region 1 RCRA Corrective Action Program. 2016. Statement of Basis for the Proposed Remedy Determination for the Former Ciba-Geigy Facility, 180 Mill Street, Cranston, Rhode Island.

Figures



Map Location

Site Locus

Former Ciba-Geigy
Cranston, Rhode Island

0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

0 100 200 400 600 800 1,000 1,200 1,400 1,600 Meters

Map Projection: State Plane, NAD 83, Feet.
Image Source: USGS Topographic Quadrangle: Providence, RI.

Scale: 1:24,000

AECOM

Figure 1

Date: May 2012

J:\Indl_Service\Project Files\BASF-0760\Cranston RI\9_Permitting\ACOE\GIS\Projects\Figure 1 Site Locus.mxd

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AECOM

LEGEND

- ▭ BASF PROPERTY BOUNDARY
- ⬚ FORMER WASTEWATER TREATMENT AREA

FORMER CIBA-GEIGY FACILITY
CRANSTON, RI
60330182.1

DATE: 04/01/2024
DRWN: JB

FIGURE 2
SITE PLAN

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AECOM

0 50 Feet

N

FORMER CIBA-GEIGY FACILITY
CRANSTON, RI

DATE: 4/5/2024
DRWN: JB

FIGURE 3
SITE LAYOUT

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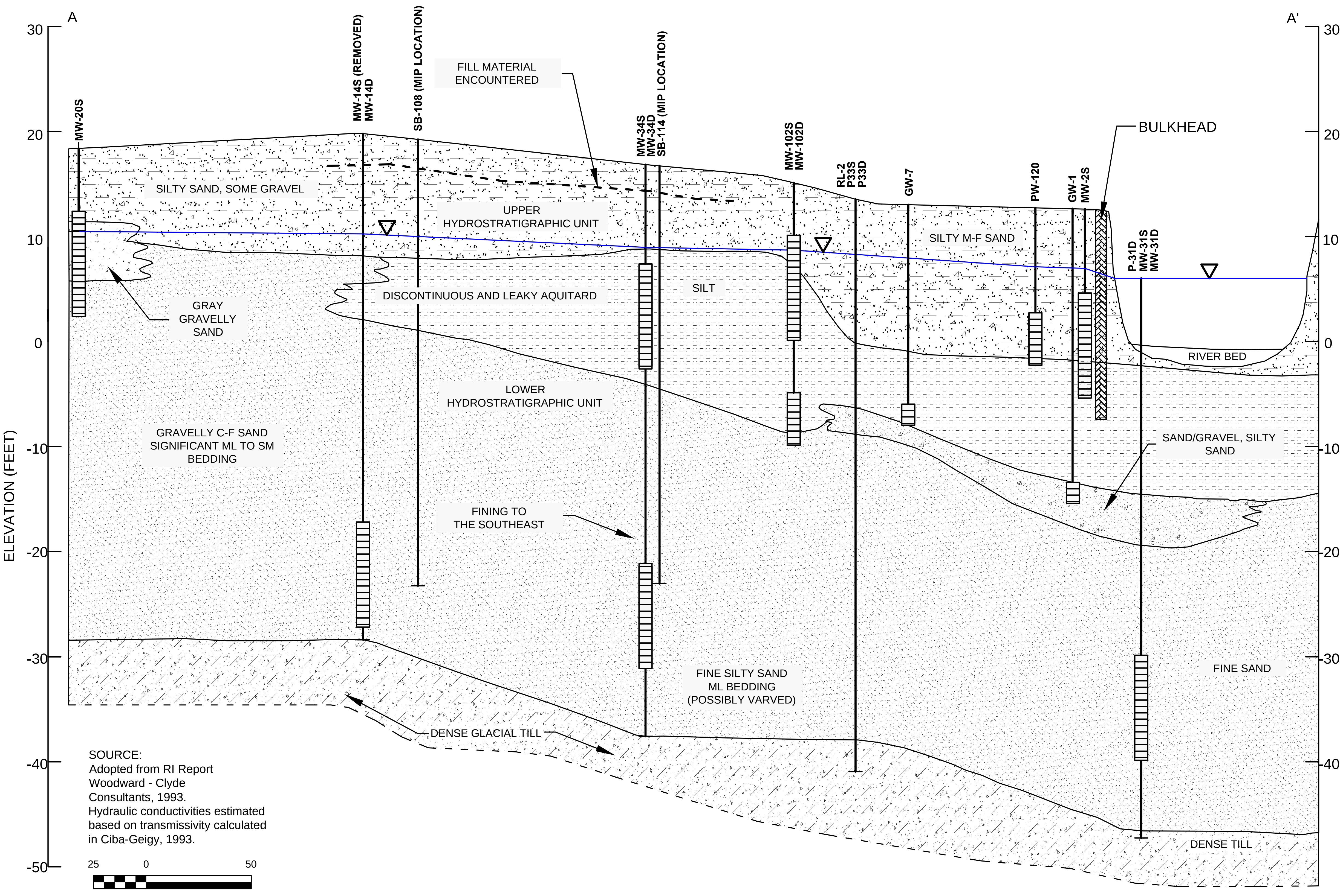
AECOM

0
50
Feet
N

FORMER CIBA-GEIGY FACILITY
CRANSTON, RI

DATE: 6/26/2024
DRWN: JB

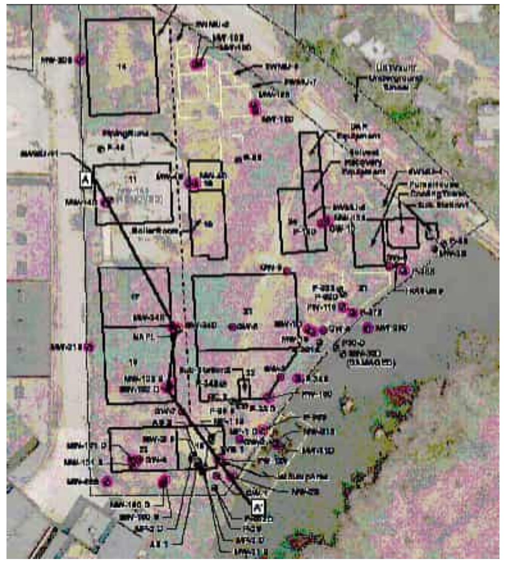
FIGURE 4
EXCAVATION LOCATIONS



SOURCE:
Adopted from RI Report
Woodward - Clyde
Consultants, 1993.
Hydraulic conductivities estimated
based on transmissivity calculated
in Ciba-Geigy, 1993.

25 0 50
HORIZONAL SCALE IN FEET

5 0 10
VERTICAL SCALE IN FEET


TRANSECT LOCATION

LEGEND

- ▨ SILTY M-F SAND
- ▨ SILT
- ▨ SAND/GRAVEL
- ▨ FINE SILTY SAND
- ▨ DENSE TILL

AECOM

FORMER CIBA-GEIGY
CRANSTON, RI
60163799.8

DATE: 11/07/2012
DRWN: AES

HYDROSTRATIGRAPHIC CROSS-SECTION A-A'

FIGURE 5

File: J:\Ind_Service\Project Files\BASF-0760\Cranston RI\2_Deliverables\1. GIS_Database\CADD\SRL_Report\HYDROSTRATIGRAPHY_CROSS_SECTIONS.dwg Layout: FIGURE 2-3 User: sanchezo1 Plotted: Nov 08, 2012 - 4:29pm Xref's:

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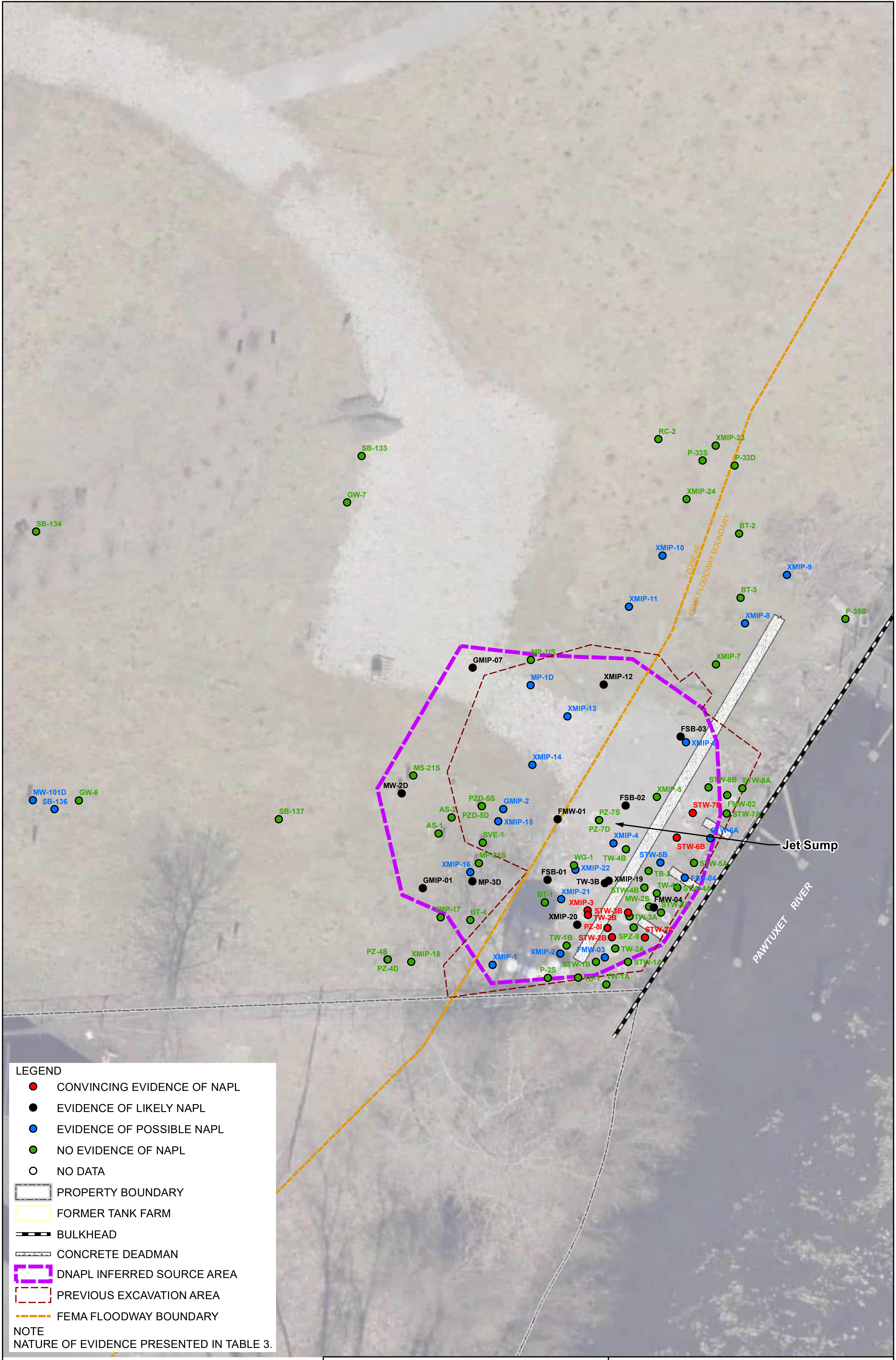


LEGEND
- 🔴 CONVINCING EVIDENCE OF NAPL
- ● EVIDENCE OF LIKELY NAPL
- 🔵 EVIDENCE OF POSSIBLE NAPL
- 🟢 NO EVIDENCE OF NAPL
- ○ NO DATA
- PROPERTY BOUNDARY
- FORMER TANK FARM
- BULKHEAD
- CONCRETE DEADMAN
- DNAPL INFERRED SOURCE AREA
- PREVIOUS EXCAVATION AREA
- FEMA FLOODWAY BOUNDARY

NOTE
NATURE OF EVIDENCE PRESENTED IN TABLE 3.

AECOM

0 15 Feet

N

FORMER CIBA-GEIGY FACILITY
CRANSTON, RI

DATE: 4/2/2024
DRWN: JB

FIGURE 6
DNAPL EVALUATION RESULTS

Project Management Initials: Designer:____ Checked:____ Approved:____ ANSI D 22" x 34"

AECOM

PROJECT

FORMER CIBA-GEIGY
FACILITY
CRANSTON, RI
RCRA DOCKET NO. 1-88-1088
EPA ID NO. RID001194323

CLIENT

BASF
www.basf.com

CONSULTANT

AECOM
250 APOLLO DRIVE
CHELMSFORD, MA 01824
www.aecom.com

DRAFT
NOT FOR
CONSTRUCTION

SHEET TITLE

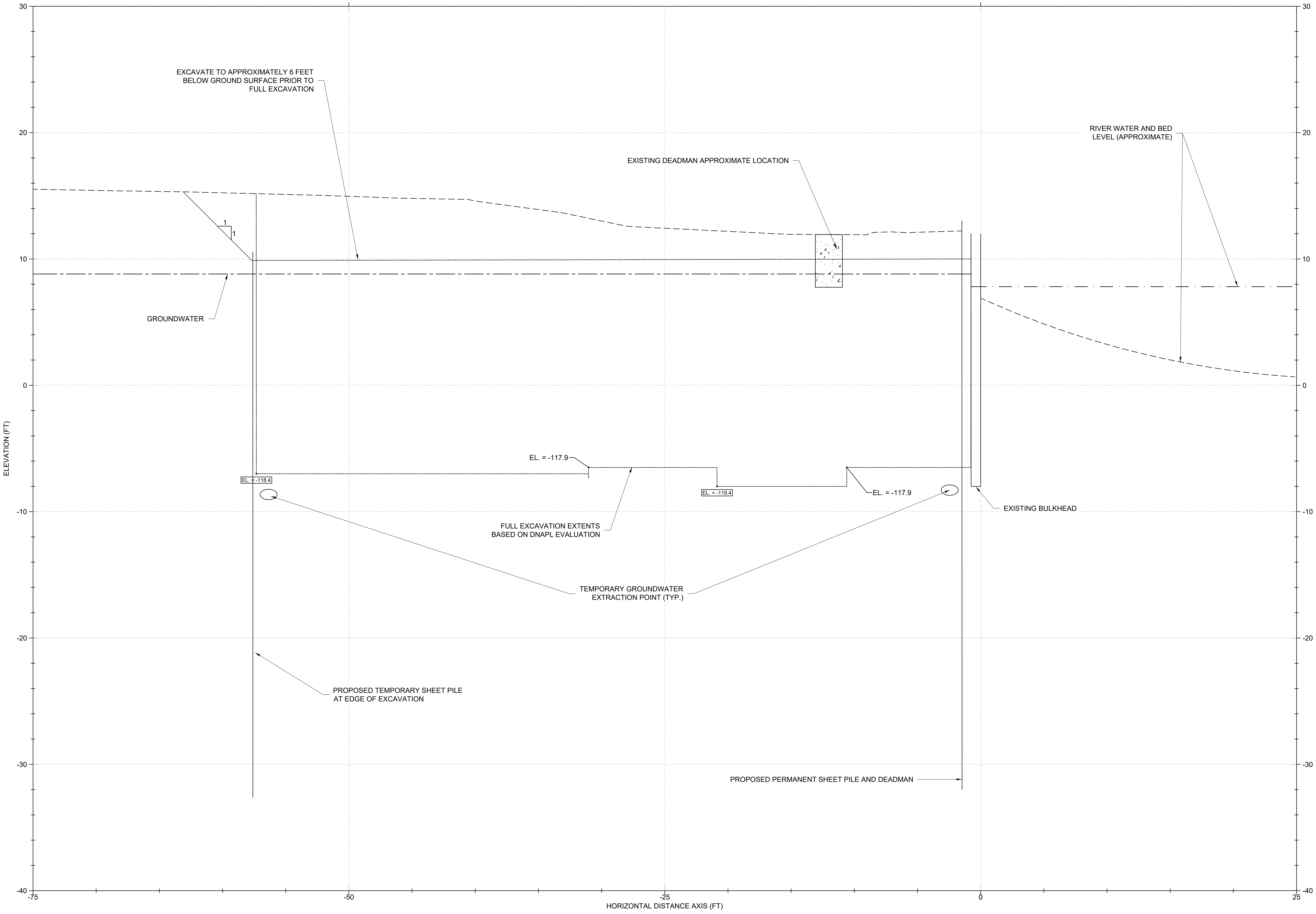
EXCAVATION PLAN
REMEDIAL ALTERNATIVE

SHEET NUMBER

FIGURE 7

Project Management Initials: Designer: ____ Checked: ____ Approved: ____ ANSI D 22" x 34"

BULKHEAD 0+25



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PROJECT

FORMER CIBA-GEIGY
FACILITY
CRANSTON, RI
RCRA DOCKET NO. 1-88-1088
EPA ID NO. RID001194323

CLIENT

BASF
www.basf.com

CONSULTANT

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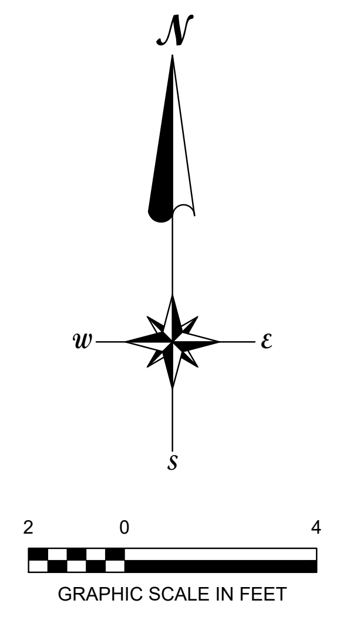
250 APOLLO DRIVE
CHELMSFORD, MA 01824
www.aecom.com



DRAFT
NOT FOR
CONSTRUCTION

SHEET TITLE

TYPICAL EXCAVATION CROSS SECTION
REMEDIAL ALTERNATIVE

SHEET NUMBER

FIGURE 8

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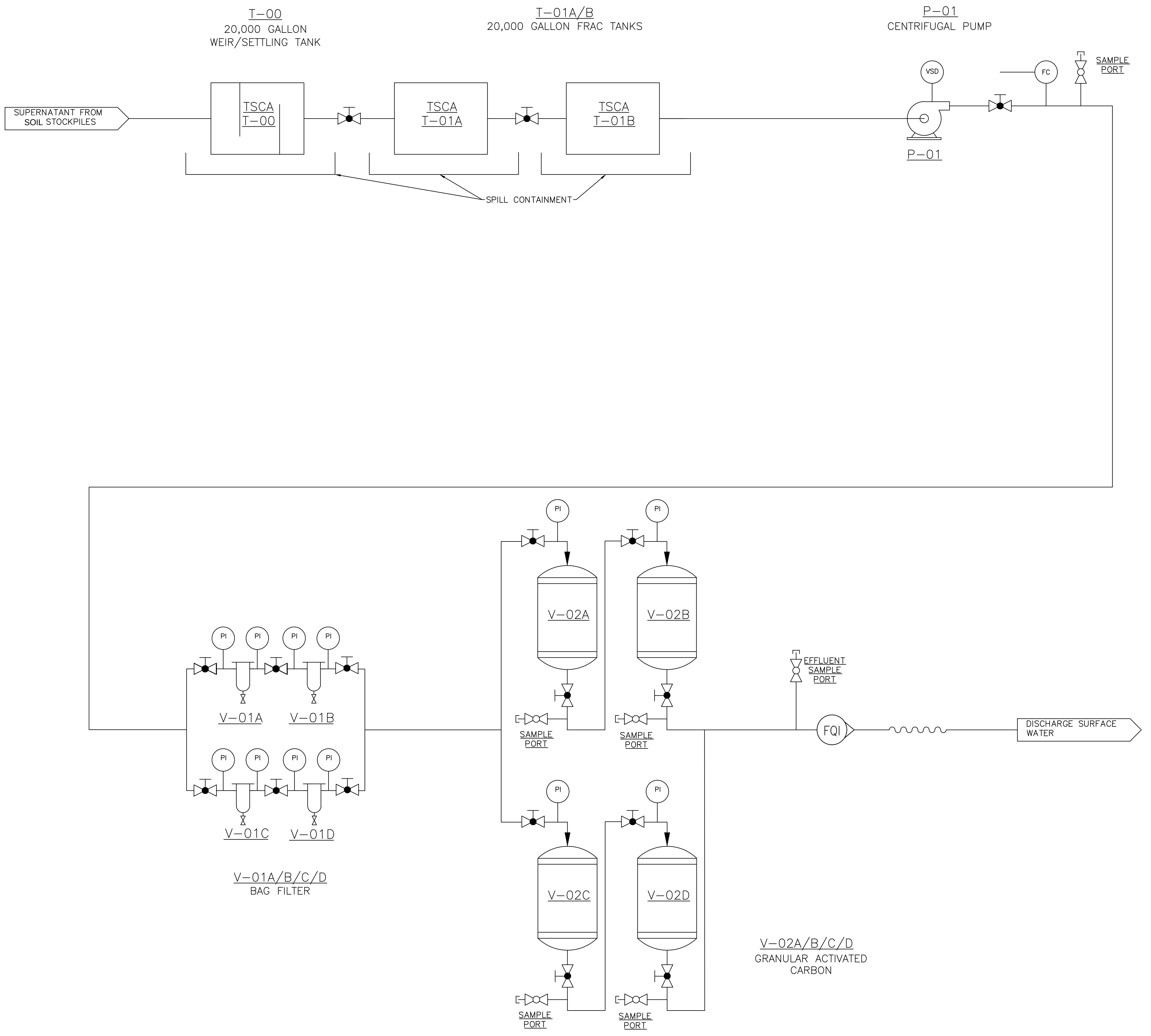

NOTE:

1. TREATED WATER SHALL BE DISCHARGED TO SURFACE WATER IN ACCORDANCE WITH APPLICABLE PERMITS.

2. SYSTEM COMPONENTS ARE FOR INFORMATION PURPOSES ONLY. FINAL TREATMENT SYSTEM DESIGN WILL BE BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AND OWNER

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
7							
6							
5							
4							
3							
2							
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0	AC	07/24/18	100% DRAFT				

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FORMER CIBA-GEIGY FACILITY
CRANSTON, RI

DATE: 3/5/2024

CONSTRUCTION WATER TREATMENT PROCESS FLOW DIAGRAM

FIGURE 9

DRAWING NUMBER: P-101

SHEET NUMBER: 1 OF 1

REVISION 0

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Tables

Table 1
Evaluation of Potential DNAPL Indicators in Soil Data
Former Ciba-Geigy Facility
Cranston Rhode Island

Jet Sump Area

Term	Unit	Default Value	PCE	CB	1,2-DCB	Comments
S	mg/L	chemical-specific	206	499	156	*[Published data] - Experimental median (NIH PubChem Dashboard)*
Mole Fraction	unitless	site-specific	0.67	0.88	0.83	*Maximum fraction detected in soil sample.*
Effective S	mg/L	chemical-specific	138	439	129	*Calculated*
MW	g/mol	chemical-specific	165.8	112.6	147.0	*[Published data] - Experimental median (NIH PubChem Dashboard)*
D	g/cm^3	chemical-specific	1.62	1.11	1.31	*[Published data] - Experimental median (NIH PubChem Dashboard)*
ρ_b	kg/L	1.5	1.5	1.5	1.5	
K_{oc}	L/kg	chemical-specific	216	159	300	*[Published data] - Experimental median (NIH PubChem Dashboard)*
f_{oc}	g/g	0.003	0.003	0.003	0.003	***Critical parameter. Vary b/w 0.001-0.006.***
K_d	L/kg	Calculated	0.65	0.48	0.90	
θ_w	L_{water}/L_{soil}	0.15	0.3	0.3	0.3	*Estimated for saturated soil - not a critical parameter*
θ_a	L_{air}/L_{soil}	0.28	0	0	0	For below the water table.
H	atm-m^3/mol	chemical-specific	1.77E-02	3.11E-03	1.50E-03	*[Published data] - Experimental median (NIH PubChem Dashboard)*
H'	unitless	calculated	0.7257	0.12751	0.0615	
C_{nap}	mg/Kg	calculated	**117**	**297**	**142**	*Theoretical maximum concentration possible without DNAPL*
Threshold Saturation	unitless		5%	5%	5%	
Threshold Concentration	mg/Kg		**24,417**	**16,947**	**19,730**	*Concentration above which DNAPL could be mobile*

Notes:

C_{nap} = the concentration of an organic substance at which or above which such substance in inferred to be present in a non-aqueous phase
S = the aqueous solubility of pure compound
ρ_b = dry soil bulk density
K_{oc} = chemical organic carbon-water partition coefficient
f_{oc} = fraction organic carbon of soil
K_d = soil-water partition coefficient, which may be approximated by K_{oc}*f_{oc}
θ_w = water-filled soil porosity (L_{water}/L_{soil})
θ_a = air-filled soil porosity (L_{air}/L_{soil})
H = Henry's law constant (atm-m^3/mol)
H' = Henry's law constant (dimensionless)

1,2-DCB = 1,2-Dichlorobenzene
CB = Clorobenzene
PCE = Tetrachloroethylene

Table 2
DNAPL Composition Calculation
Former Ciba Geigy Facility
Cranston, Rhode Island

XMIP-3 (15-18 feet bgs)	Concentration	Molecular Weight	Molarity	Mole fraction
Analyte	(mg/kg)	(g/mol)	(mol/kg)	
Trichloroethylene	1.5	131.4	1.1416E-05	0.00
Tetrachloroethylene	520	165.83	0.00313574	0.12
Chlorobenzene	130	112.56	0.00115494	0.04
1,2-Dichlorobenzene	3200	147.01	0.02176723	**0.83**
cis-1,2-Dichlorothylene	0	96.94	0	0.00
1,4-Dichlorobenzene	28	147	0.00019048	0.01
1,2,4-Trichlorobenzene	16	181.45	8.8179E-05	0.00
Total			0.02634798	

XMIP-12 (9-12 feet bgs)	Concentration	Molecular Weight	Molarity	Mole fraction
Analyte	(mg/kg)	(g/mol)	(mol/kg)	
Trichloroethylene	0	131.4	0	0.00
Tetrachloroethylene	2.9	165.83	1.7488E-05	0.02
Chlorobenzene	91	112.56	0.00080846	**0.88**
1,2-Dichlorobenzene	11	147.01	7.4825E-05	0.08
cis-1,2-Dichlorothylene	0	96.94	0	0.00
1,4-Dichlorobenzene	2.4	147	1.6327E-05	0.02
1,2,4-Trichlorobenzene	0	181.45	0	0.00
Total			0.0009171	

Table 3
DNAPL Evaluation
Former Ciba-Geigy Facility
Cranston, Rhode Island

DNAPL Source Zone Evaluation - BASF Cranston	**Soil Borings**																																
DNAPL Zone Assessment Lines of Evidence*	BT-1	BT-3	FMW-01	FMW-02	FMW-03	FMW-04	FSB-01	FSB-02	FSB-03	FSB-04	GMIP-01	GMIP-02	GMIP-07	MP-1D	MP-2D	MP-3D	PZ-8i	SB-133 / GW-7	SB-134	SB-136 / GW-6 / MW-101D	SB-137	SPZ-8	STW-1A	STW-1B	STW-2A	STW-2B	STW-3A	STW-3B	STW-4A	STW-4B	STW-5A	STW-5B	STW-6A
A. Visual Observation	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	**Yes**	No	No	No	No	No	No	No	**Yes**	**Yes**	Sheen**	**Yes**	No	No	No	No	Sheen
B1. Soil concentrations above threshold DNAPL saturation - Dichlorobenzene?	NA	NA	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NA	No	No	No	No	NA	No	No	NA	NA	No	No	No	No	No	No	No
B2. Soil concentrations above threshold DNAPL saturation - Chlorobenzene?	NA	NA	No	No	N/A	No	No	N/A	No	No	No	No	No	No	No	No	NA	No	No	No	No	NA	No	No	NA	NA	No	No	No	No	No	No	No
C1. Soil concentrations above partitioning threshold - Dichlorobenzene?	NA	NA	**Yes**	No	No	No	No	N/A	**Yes**	**Borderline**	**Yes**	No	**Yes**	No	**Yes**	**Yes**	NA	No	No	No	No	NA	No	No	NA	NA	No	No	No	No	No	No	No
C2. Soil concentrations above partitioning threshold - Chlorobenzene?	NA	NA	**Yes**	No	No	**Yes**	**Yes**	**Yes**	**Yes**	No	No	No	No	**Borderline**	No	No	NA	No	No	No	No	NA	No	No	NA	NA	No	No	No	No	No	No	No
D. Site Use and History	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
G1. Groundwater Concentration - Dichlorobenezene >1-10% effective solubility?	NA	NA	No	No	No	No	NA	NA	NA	NA	**>1%**	**>1%**	**>1%**	NA	NA	NA	NA	No	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G1. Groundwater Concentration - Chlorobenzene >1-10% effective solubility?	NA	NA	**>1%**	No	**>1%**	**>1%**	NA	NA	NA	NA	No	**>1%**	**>1%**	NA	NA	NA	NA	**>1%**	NA	**>1%**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G2. Persistent plume?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
G4. Increasing concentrations with depth?	NA	NA	NA	NA	NA	NA	NA	NA	No	NA	NA	NA	NA	NA	**Yes**	**Yes**	NA	NA	NA	**Yes**	NA	NA	No	No	NA	NA	Yes**	NA	NA	NA	NA	NA	NA
H1. PID Response > 100 ppmv	No	No	**Yes**	Yes**	No	**Yes**	No	**Yes**	No	No	**Yes**	No	No	No	**Yes**	**Yes**	No	No	No	No	No	No	No	No	No	**Yes**	No	**Yes**	No	No	No	**Yes**	No
H2. MIP XSD response >200K	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes***	Yes***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Evidence for DNAPL Source Zone	No	No	**Likely**	No	**Possible**	**Likely**	**Likely**	**Likely**	**Likely**	**Possible**	**Likely**	**Possible**	**Likely**	**Possible**	**Likely**	**Likely**	**Yes**	No	No	**Possible**	No	No	No	No	**Yes**	**Yes**	No	**Yes**	No	No	No	**Possible**	**Possible**

Notes:

*Enumeration of lines of evidence is taken from Kueper & Davies, 2009. Where a line of evidence is not evaluated, the data do not exist for this site.

** Soil data at depth of interest do not suggest NAPL.

*** ECD > 200,000

A. Visual Observation - NAPL observed in well or on soil during drilling.

B. Soil concentrations above threshold DNAPL saturation - Do concentrations detected in soil exceed threshold value for 5% NAPL saturation for potentially mobile NAPL?

C. Soil concentrations above partitioning threshold? - Do concentrations detected in soil exceed maximum theoreteical concentration possible without NAPL? "Borderline" indicates locations where concentrations are less than threshold but greater than 1/2 the pure phase threshold.

D. Site Use and History - Are the samples from an area where VOCs denser than water were handled on site? - Yes for entire area.

G1. Groundwater Concentration - >1-10% effective solubility? - 10% used as the threshold for potential NAPL in individual wells, due to the proximity of inferred NAPL at other locations in the area.

G3. Persistent plume? - Assumed yes for entire area.

G4. Increasing concentrations with depth? - Significant increase (e.g., 2x) at depths below 15 feet (maximum depth of remedial excavation) in soil, XSD response, or groundwater concentrations at a given location.

Line of evidence G4 is obfuscated by the prior excavation program, which elminated shallow impacts at many locations.

H1. PID Response > 100 ppmv - Evaluated for data below water table smear zone. "Yes" results flagged with ** have analytical data that do not suggest NAPL.

H2. MIP XSD response >200K - Also noted where XSD < 200K, but >100K

Solubility (G1), partitioning (C), and NAPL saturation (B) calculations utilize effective solubility values. (See Table 1.)

Evidence for DNAPL Source Zone -

Lines of evidence A & B are considered conclusive evidence of DNAPL.

Lines of evidence C and H2 considered evidence of likely DNAPL. Line of evidence H2, where XSD response is > 100K is considered evidence of possible DNAPL.

Lines of evidence G1 (10%), G4, and H1 considered evidence of possible NAPL.

Where multiple independent lines of evidence exist, "possible" upgraded to "likely." (MIP response and PID response or gw concentrations are not considered independent, as they should correlate for a given interval.)

Lines of evidence D and G2 apply to the general area and are therefore not used as lines of evidence for individual locations.

Abbrevieations -

NAPL - Non-aqueous phase liquid
DNAPL - Denser than water non-aqueous phase liquid
PID - Photoionization detector
ppmv - Parts per million by volume
XSD - Halogen specific detector from membrane interface probe
NA - No applicable data to evaluate for a given line-of-evidence

Table 3
DNAPL Evaluation
Former Ciba-Geigy Facility
Cranston, Rhode Island

DNAPL Source Zone Evaluation - BASF Cranston	Soil Borings																										
DNAPL Zone Assessment Lines of Evidence*	STW-6B	STW-7A	STW-7B	STW-8A	STW-8B	XMIP-1	XMIP-2	XMIP-3	XMIP-4	XMIP-5	XMIP-6	XMIP-7	XMIP-8	XMIP-9	XMIP-10	XMIP-11	XMIP-12	XMIP-13	XMIP-14	XMIP-15	XMIP-16	XMIP-17	XMIP-18	XMIP-19	XMIP-20	XMIP-21	XMIP-22
A. Visual Observation	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
B1. Soil concentrations above threshold DNAPL saturation - Dichlorobenzene?	No	No	No	No	No	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No
B2. Soil concentrations above threshold DNAPL saturation - Chlorobenzene?	No	No	No	No	No	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No
C1. Soil concentrations above partitioning threshold - Dichlorobenzene?	NA	No	NA	No	NA	NA	NA	**Yes**	NA	NA	NA	NA	NA	NA	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C2. Soil concentrations above partitioning threshold - Chlorobenzene?	NA	No	NA	No	NA	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Site Use and History	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
G1. Groundwater Concentration - Dichlorobenzene >1-10% effective solubility?	NA	NA	NA	NA	NA	NA	**>1%**	**>10%**	**>10%**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**>10%**	**>10%**	NA	NA
G1. Groundwater Concentration - Chlorobenzene >1-10% effective solubility?	NA	NA	NA	NA	NA	NA	**>1%**	**>10%**	**>1%**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**>1%**	**>1%**	NA	NA
G2. Persistent plume?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
G4. Increasing concentrations with depth?	NA	NA	NA	NA	NA	No	No	No	**Yes**	No	No	No	No	No	No	No	No	**Yes**	No	No	**Yes**	No	No	No	No	**Yes**	No
H1. PID Response > 100 ppmv	No	Yes**	No	No	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H2. MIP XSD response >200K	NA	NA	NA	NA	NA	No - >100K only @15'	No	**Yes**	No - >100k 23-26'	No	No - >100K 13-14'	No - >100K 16-17'	No - >100K 17-18'	No - >100K 16-17'	Yes - but only a spike @16'	No - >100K 16-17'	**Yes**	No - >100K 9-11', 22-24'	No - >100K 10-19'	No - >100K 15-17'	**Yes**	No	No	**Yes**	**Yes**	No - >100K but only @22'	**Yes**
Evidence for DNAPL Source Zone	**Yes**	No	**Yes**	No	No	**Possible**	**Possible**	**Yes**	**Possible**	No	**Possible**	**Possible**	**Possible**	**Possible**	**Possible**	**Possible**	**Likely**	**Possible**	**Possible**	**Possible**	**Likely**	No	No	**Likely**	**Likely**	**Possible**	**Likely**

Notes:

*Enumeration of lines of evidence is taken from Kueper & Davies, 2009. Where a line of evidence is not evaluated, the data do not exist for this site.

** Soil data at depth of interest do not suggest NAPL.

A. Visual Observation - NAPL observed in well or on soil during drilling.

B. Soil concentrations above threshold DNAPL saturation - Do concentrations detected in soil exceed threshold value for 5% NAPL saturation for potentially mobile NAPL?

C. Soil concentrations above partitioning threshold? - Do concentrations detected in soil exceed maximum theoreteical concentration possible without NAPL? "Borderline" indicates locations where concentrations are less than threshold but greater than 1/2 the pure phase threshold.

D. Site Use and History - Are the samples from an area where VOCs denser than water were handled on site? - Yes for entire area.

G1. Groundwater Concentration - >1-10% effective solubility? - 10% used as the threshold for potential NAPL in individual wells, due to the proximity of inferred NAPL at other locations in the area.

G3. Persistent plume? - Assumed yes for entire area.

G4. Increasing concentrations with depth? - Significant increase (e.g., 2x) at depths below 15 feet (maximum depth of remedial excavation) in soil, XSD response, or groundwater concentrations at a given location.

Line of evidence G4 is obfuscated by the prior excavation program, which elminated shallow impacts at many locations.

H1. PID Response > 100 ppmv - Evaluated for data below water table smear zone. "Yes" results flagged with ** have analytical data that do not suggest NAPL.

H2. MIP XSD response >200K - Also noted where XSD < 200K, but >100K

Solubility (G1), partitioning (C), and NAPL saturation (B) calculations utilize effective solubility values. (See Table 1.)

Evidence for DNAPL Source Zone -

Lines of evidence A & B are considered conclusive evidence of DNAPL.

Lines of evidence C and H2 considered evidence of likely DNAPL. Line of evidence H2, where XSD response is > 100K is considered evidence of possible DNAPL.

Lines of evidence G1 (10%), G4, and H1 considered evidence of possibleD NAPL.

Where multiple independent lines of evidence exist, "possible" upgraded to "likely." (MIP response and PID response or gw concentrations are not considered independent, as they should correlate for a given interval.)

Lines of evidence D and G2 apply to the general area and are therefore not used as lines of evidence for individual locations.

Abbrevieations -

NAPL - Non-aqueous phase liquid
DNAPL - Denser than water non-aqueous phase liquid
PID - Photoionization detector
ppmv - Parts per million by volume
XSD - Halogen specific detector from membrane interface probe
NA - No applicable data to evaluate for a given line-of-evidence

Table 4
Initial Screening of Remedial Alternatives for DNAPL Area
Former Ciba-Geigy
Cranston, Rhode Island

Alternative	Details	Effectiveness	Advantages	Disadvantages
1A - Excavation with sheet piling into the till layer.	Sheet pile 5 to 10 feet into till layer (approximately 70 feet below ground surface [feet bgs]). Dewatering at approximately 100 gallons per minute (gpm).	Proven.	1. Excavation in the dry is simplest for and makes it easier to see dense non-aqueous phase liquid (DNAPL) and remove it.	1. Shoring longer than 50 feet requires special provisions for transport and pile driving, which increases project costs. Depth to till will drive costs, and depth in remediaton area is not precisely known.
1B - Excavation with sheet piling above the till layer.	Shoring cantilevered to above till layer (approximately 55 feet bgs). Dewatering at approximately 500 gpm.	Proven, but some uncertainty related to dewatering next to river.	1. Excavation in the dry is simplest for and makes it easier to see dense non-aqueous phase liquid (DNAPL) and remove it. 2. Using 50-foot sheetpile can help control costs, because enough of the overburden is cut-off to limit infiltration, but mobilization costs are reduced relative to longer, non-standard sheetpile lengths.	1. Dewatering next to river introduces some uncertainty because shoring will not be driven into till layer.
2A - Excavation with trench boxes or slide rail system.	Use trench boxes or slide rail system to excavate. Backfill with stone. Water treatment for drying bed decant water.	Uncertain due to water management issues and inability to observe excavation.	1. Reduces shoring and dewatering costs by employing simpler excvation support system.	1. Difficult to verify DNAPL removal. Residual DNAPL could recontaminate remaining soil or backfill. 2. Need to manage odors during soil drying.
2B -Excavation via large diameter augers.	Use approximate 4-foot diameter augers to excavate. Backfill with sand or slurry. Water treatment for drying bed decant water.	Uncertain due to water management issues and inability to observe excavation.	1. Could be combined with slurry backfill to control future groundwater issues. 2. Reduces shoring costs.	1. Same as above (Alternative 2A). 2. Overlapping augers increase volume of waste and cost.
3A - In-situ solidification and stabilization (ISS).	Pre-dig to remove structures and excavate clean fill (5 feet bgs). ISS across remediation target area to stabilize source material (DNAPL) (approximately 23 feet bgs). Silt curtain required in river to control grout seepage.	Proven for Manufactured Gas Plant (MGP) DNAPL. Could not find field-scale aplication of ISS for chlorobenzenes. Only known lab study showed leaching at higher than expected rate.	1. Greatly reduces disposal and water treatment costs. 2. Limits odors due to limited extent of digging. 3. Limits impact to neighborhood (limited trucking compared to alternatives with higher disposal volumes). 4. Addresses mobility which is primary concern.	1. Unproven technology for chlorinated benzenes. Will require extensive testing during design. 2. Not a previously approved PCB remediaton technology. Would require regulatory approval for disposal of higher concentrations of PCBs within stabilized soil.
3B - In-situ solidification and stabilization along the perimeter and excavation.	ISS in place of shoring around the perimeter of the remediation target area to the till layer (70 feet bgs). Excavation would occur after the ISS perimeter is implemented. Silt curtain required in river to control grout seepage. Dewatering at approximately 100 gpm.	Same as above (Alternative 3A) for perimeter with excavation of PCBs and known DNAPL.	1. Use of ISS next to river addresses potential future groundwater concerns.	1. Increases cost of excvation stabilization without significantly reducing disposal costs or reducing potential short-term impacts. 2. Increased mobilization costs by incorporating large-scale excavation with ISS techniques.

Notes:

Alternative Screened Out

Table 5
Detailed Evaluation of Remedial Alternatives for DNAPL Area
Former Ciba-Geigy
Cranston, Rhode Island

Evaluation Criteria	Alternative 1B: Excavation in the dry with sheet piling above the till layer.	Alternative 2A: Excavation in the wet with trench boxes or slide rail system	Alternative 3A: In-situ solidification and stabilization (ISS)
Effectiveness.	Sheet piles and excavation are an effective and proven technology. Residual risks would be effectively eliminated by excavation and off-Site disposal of source material. Any short-term risks to the community or workers would be mitigated by following best management practices, including proper soil management, personal protection equipment, air quality monitoring, and dust and odor mitigation, as needed. This alternative would meet regulatory criteria by excavating DNAPL- and PCB-impacted materials within the remediation target area. Groundwater and surface water monitoring would be completed post-excavation to meet water-related regulatory criteria. Groundwater monitoring would be completed post-excavation to meet water-related regulatory criteria.	Trench boxes or slide rail systems and excavation are an effective and proven technology. However, conducting the excavation in the wet could make the excavation less effective because it will be difficult to verify that all the source material was removed. Any short-term risks to the community or workers would be mitigated by following best management practices, including proper soil management, personal protection equipment, air quality monitoring, and dust and odor mitigation, as needed. This alternative could meet regulatory criteria. A majority of the DNAPL- and PCB-impacted materials within the remediation target area would be excavated; however, due to limited visibility into wet excavations, some DNAPL could be left within the excavation. Groundwater monitoring would be completed post-excavation to meet water-related regulatory criteria.	ISS is an effective and proven technology in general. ISS for the use of trapping chlorobenzene DNAPL is not proven and would require demonstration in a bench study. There would also be some residual risk on-Site for any chlorobenzene DNAPL solidified because of this uncertainty. Any short-term risks to the community or workers would be mitigated by following best management practices, including proper soil management and personal protection equipment. PCB-impacted materials above approved cleanup criteria are assumed to require excavation, although approval to incorporate higher concentrations into ISS treatment volume could be sought. Additional regulatory coordination would be needed to use ISS near the river to ensure appropriate protective measures are implemented. Groundwater monitoring would be completed post-excavation to meet water-related regulatory criteria.
Reduction of toxicity, mobility, or volume.	Would reduce the toxicity and mobility of source materials by removing those materials from the site. Volume of material would be unchanged by disposal in a permitted landfill. The existing sheetpile bulkhead would be supplmented with a permanent sheet pile wall, further reducing the mobility of groundwater impacts.	Would reduce the toxicity and mobility of source materials to the extent practicable by removing those materials from the excavation area. Volume of material would be unchanged by disposal in a permitted landfill. By digging in the wet, it is possible that some of the source material would remain on-site.	Would reduce the toxicity and mobility of source materials by solidifying soils in place. There is some uncertainty regarding effectiveness of ISS for chlorobenzene NAPL, which could result in higher residual toxicity and mobility than excavation.
Implementability.	Sheet piles and excavation are an implementable technology. Sheet piles, excavation, dewatering, and off-Site disposal are common, easy to use, and reliable. Groundwater monitoring can be completed to monitor the effectiveness of the remedy upon completion. Facilities are available to accept soils. Uncertainty exists in the dewatering system design. Further analysis will be required to determine the dewatering flow rate during the pre-design investigation (PDI) stage. However, this uncertainty can be overcome with additional dewatering capacity or use of deeper shoring.	Trench boxes or slide rail systems and excavation are an implementable technology. Trench boxes or slide rail systems, excavation, and off-Site disposal are common and easy to use. Excavating in the wet has some implementation challenges related to production, management of wet soils, and ensuring removal of NAPL. Groundwater monitoring can be completed to monitor the effectiveness of the remedy upon completion. Facilities are available to accept soils. Additional materials would need to be added to dry the soils post-excavation, but these materials and practices are common. Uncertainty exists in excavating in the wet. It is uncertain if all the source material will be removed because the bottom of the excavation can not be seen.	ISS is an implementable technology. ISS is common, easy to use, and reliable for controlling groundwater impacts from source material. However, there is less demonstrated reliability of ISS for chlorobenzene DNAPL, and additional testing would be necessary to verify effectiveness. Groundwater monitoring can be completed to monitor the effectiveness of the remedy upon completion. Uncertainty exists in the ISS process. It is uncertain if ISS will adequately prevent leaching in chlorobenzene DNAPL-impacted materials to meet cleanup objectives.
Community Acceptance.	This alternative would potentially disturb the neighborhood by increasing truck traffic for soil disposal and increasing noise levels at and around the Site. Best management practices would be utilized to reduce noise and any odor/air concerns for the community. The alternative would reduce follow-up work on Site as source materials would be removed. It is unlikely that the river would be impacted from this alternative.	This alternative would potentially disturb the neighborhood by increasing truck traffic for soil disposal. The truck traffic would also increase noise levels at and around the Site. Best management practices would be utilized to reduce noise and any odor/air concerns for the community. The alternative would reduce follow-up work on Site as source materials would be removed. However, follow up work may be necessary as it is unsure if all impacted soils will be removed when digging in the wet. There is a potential that the river could be further impacted from the mishandling of NAPL-impacted materials.	This alternative would not substantially increase truck traffic, but would increase noise levels because of the required construction work and create a visual nuisance on Site for the required ISS equipment. Best management practices would be utilized to reduce noise and any air/dust concerns for the community. The alternative would require follow-up work on Site including groundwater monitoring to make sure the ISS was effective. There is a potential that this alternative could impact the river. Best management practices would be utilized to reduce grout into the river during application and groundwater monitoring would ensure that ISS is effectively preventing migration to the river.
Cost.	$5,160,000	$4,450,000	$4,220,000

Notes:
Alternative Screened Out

Appendix A Historical Groundwater Data Figures and Tables

A.1 Supplemental Remedial Investigation (AECOM, 2016)

A.2 Barrier Installation and Monitoring Report (CEC, 2020)

A.3 Supplemental Investigation Report (Fuss & O’Neill, 2023)

Appendix A-1 Supplemental Remedial Investigation (AECOM, 2016)

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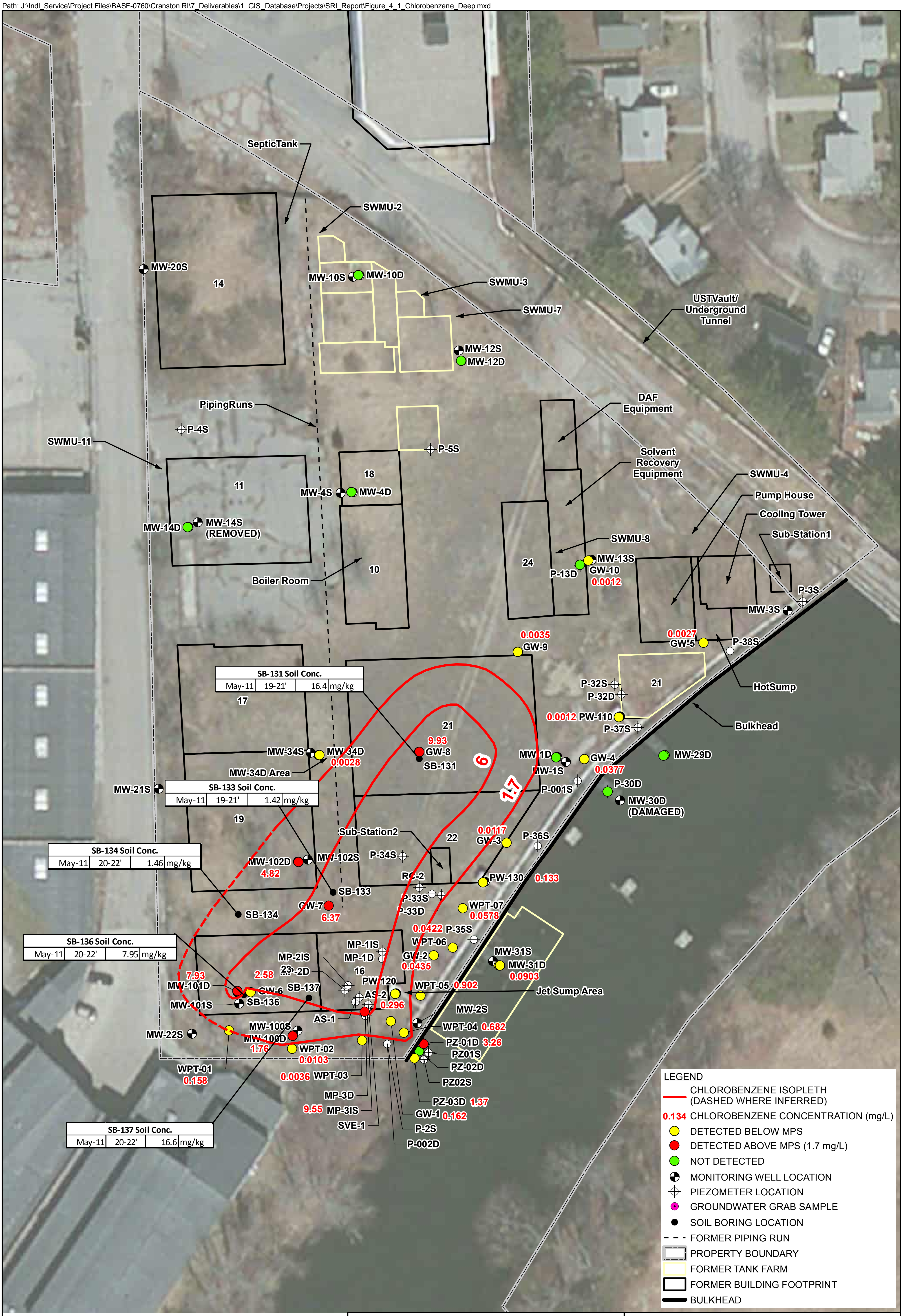
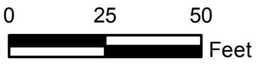
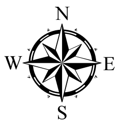


AECOM





FORMER CIBA-GEIGY
CRANSTON, RI
60297249.1200

DEEP MONITORING WELLS (>20 FT BGS)
CHLOROBENZENE
SUPPLEMENTAL RI

DATE: 08/01/2014

DRWN: J.E.B.

FIGURE 4-1

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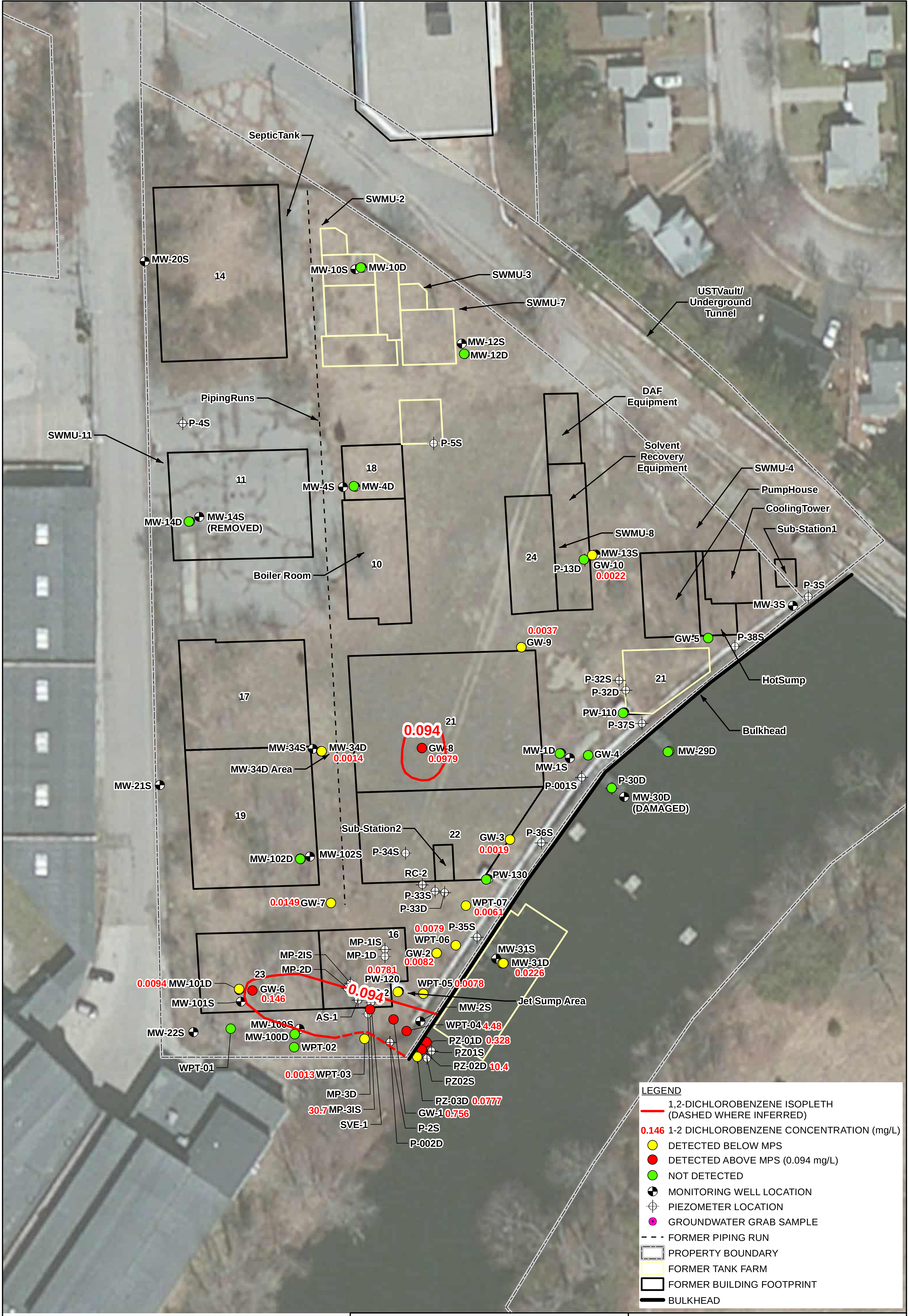

LEGEND

- 1,2-DICHLOROBENZENE ISOPLETH (DASHED WHERE INFERRED)
- 0.146 1-2 DICHLOROBENZENE CONCENTRATION (mg/L)
- ● DETECTED BELOW MPS
- ● DETECTED ABOVE MPS (0.094 mg/L)
- ● NOT DETECTED
- MONITORING WELL LOCATION
- ⊕ PIEZOMETER LOCATION
- ● GROUNDWATER GRAB SAMPLE
- FORMER PIPING RUN
- PROPERTY BOUNDARY
- FORMER TANK FARM
- FORMER BUILDING FOOTPRINT
- BULKHEAD

AECOM

0 25 50
Feet

N E S W

FORMER CIBA-GEIGY
CRANSTON, RI
60297249.1200

DEEP MONITORING WELLS (>20 FT BGS)
1,2-DICHLOROBENZENE
SUPPLEMENTAL RI

DATE: 05/20/2014
DRWN: J.E.B.
FIGURE 4-2

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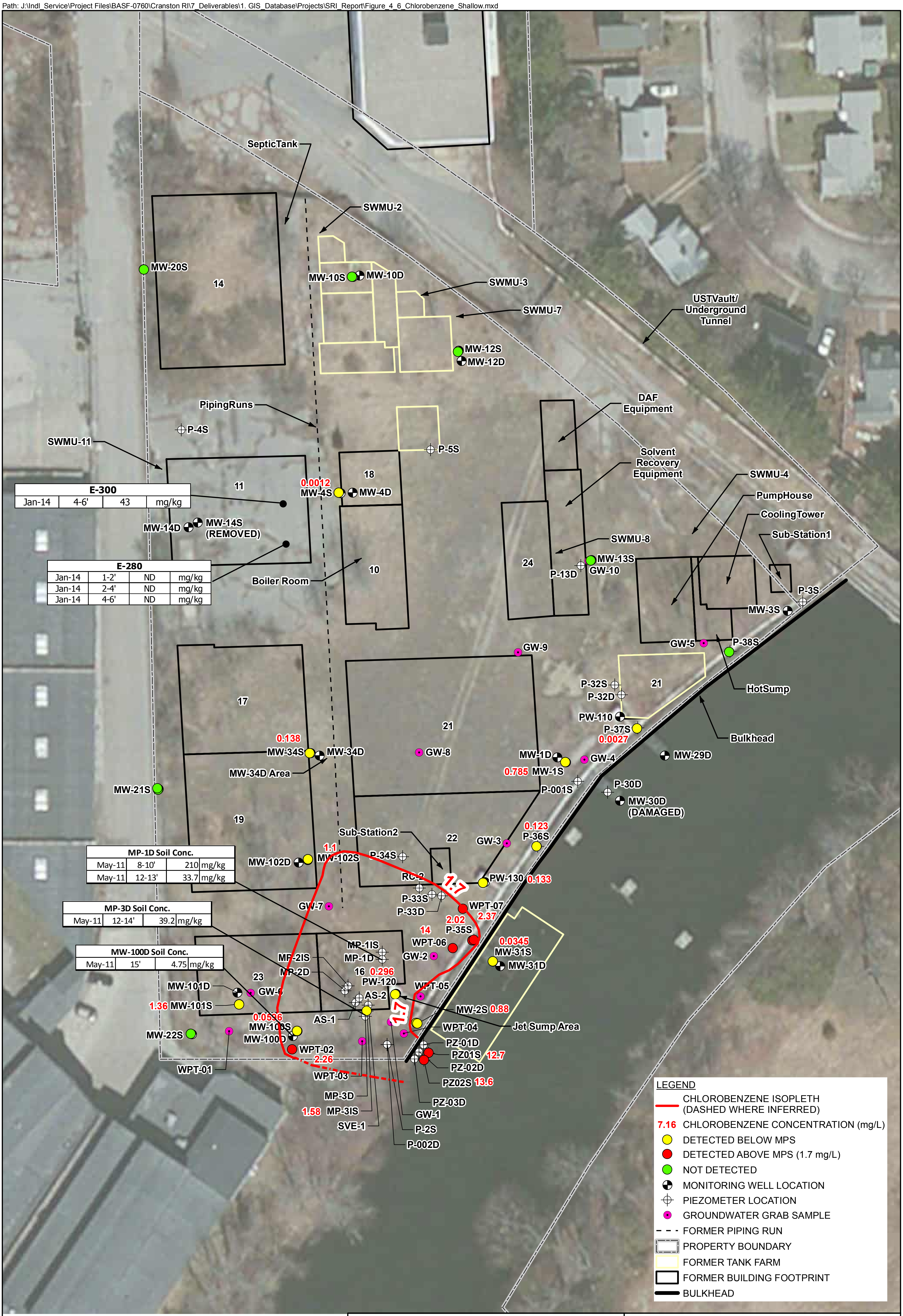

E-300			
Jan-14	4-6'	43	mg/kg

E-280			
Jan-14	1-2'	ND	mg/kg
Jan-14	2-4'	ND	mg/kg
Jan-14	4-6'	ND	mg/kg

MP-1D Soil Conc.			
May-11	8-10'	210	mg/kg
May-11	12-13'	33.7	mg/kg

MP-3D Soil Conc.			
May-11	12-14'	39.2	mg/kg

MW-100D Soil Conc.			
May-11	15'	4.75	mg/kg

LEGEND

—	CHLOROBENZENE ISOPLETH (DASHED WHERE INFERRED)
7.16	CHLOROBENZENE CONCENTRATION (mg/L)
●	DETECTED BELOW MPS
●	DETECTED ABOVE MPS (1.7 mg/L)
●	NOT DETECTED
◐	MONITORING WELL LOCATION
⊕	PIEZOMETER LOCATION
⊙	GROUNDWATER GRAB SAMPLE
- - -	FORMER PIPING RUN
▭	PROPERTY BOUNDARY
▭	FORMER TANK FARM
▭	FORMER BUILDING FOOTPRINT
━	BULKHEAD

AECOM

FORMER CIBA-GEIGY
CRANSTON, RI
60297249.1200

SHALLOW MONITORING WELLS (<20 FT BGS)
CHLOROBENZENE
SUPPLEMENTAL RI

DATE: 08/01/2014
DRWN: J.E.B.
FIGURE 4-6

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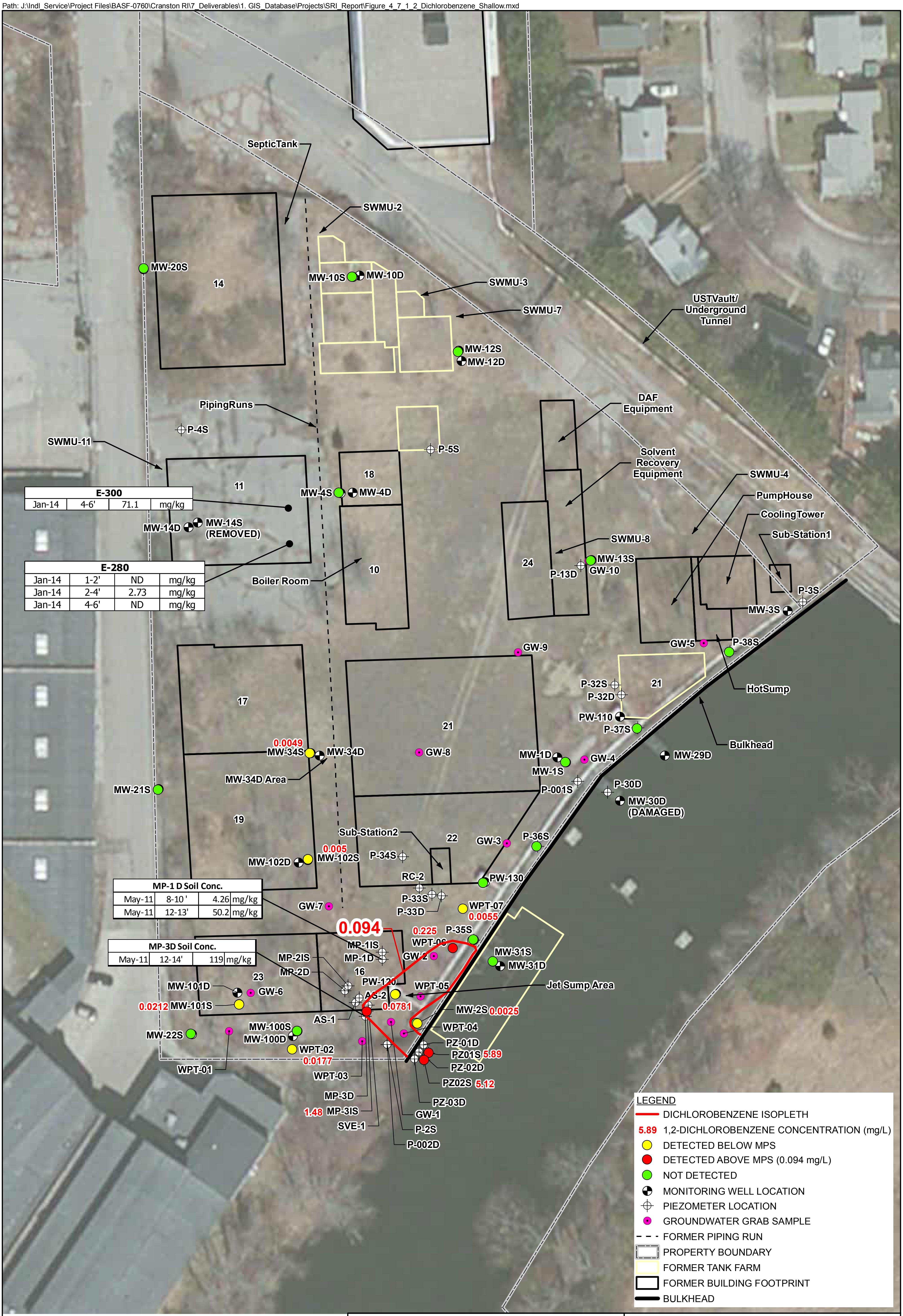


E-300			
Jan-14	4-6'	71.1	mg/kg

E-280			
Jan-14	1-2'	ND	mg/kg
Jan-14	2-4'	2.73	mg/kg
Jan-14	4-6'	ND	mg/kg

MP-1 D Soil Conc.			
May-11	8-10 '	4.26	mg/kg
May-11	12-13'	50.2	mg/kg

MP-3D Soil Conc.			
May-11	12-14'	119	mg/kg

LEGEND

━	DICHLOROBENZENE ISOPLETH
5.89	1,2-DICHLOROBENZENE CONCENTRATION (mg/L)
●	DETECTED BELOW MPS
●	DETECTED ABOVE MPS (0.094 mg/L)
●	NOT DETECTED
◐	MONITORING WELL LOCATION
⊕	PIEZOMETER LOCATION
⊙	GROUNDWATER GRAB SAMPLE
- - -	FORMER PIPING RUN
▭	PROPERTY BOUNDARY
▭	FORMER TANK FARM
▭	FORMER BUILDING FOOTPRINT
━	BULKHEAD

AECOM

0 25 50
Feet

N W E S

FORMER CIBA-GEIGY
CRANSTON, RI
60297249.1200

SHALLOW MONITORING WELLS (<20 FT BGS)
1,2-DICHLOROBENZENE
SUPPLEMENTAL RI

DATE: 05/20/2014 | DRWN: J.E.B. | FIGURE 4-7

Table 4-2 Groundwater Analytical Data
Former Ciba-Geigy Facility
180 Mill Street, Cranston, RI
June 2012

			lab_sdg	**1% Solubility**	**Media Protection Standards**	**1206229**	**1206239**	1206229	1206229	1206229	1206229	1206229	1206229	1206229	1206229	1206229	**1206239**	1206239	**1206239**	**1206239**	**1206239**	1206239
			sys_loc_code			**GW1**	**GW1**	GW2	GW2	GW3	GW3	GW4	GW4	GW4	GW5	GW5	**GW6**	GW6	**GW7**	**GW7**	**GW8**	GW8
			sys_sample_code			**W1 26-28 061312**	**W1 31-33 061412**	GW2 26-28 061312-	GW2 31-33 061312-	GW3 26-28 061312-	GW3 31-33 061312-	GW4 26-28 061312-	GW4 26-28 061312-	GW4 31-33 061312-	GW5 23-27 061312-	GW5 30-32 061312-	**W6 19-21 061412**	GW6 24-26 061412-	**W7 19-21 061412**	**W7 24-26 061412**	**W8 19-21 061412**	GW8 24-26 061412-
			sample_date			**6/13/2012**	**6/14/2012**	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	**6/14/2012**	6/14/2012	**6/14/2012**	**6/14/2012**	**6/14/2012**	6/14/2012
analytic_method	cas_rn	chemical_name	report_result_unit																			
SW8260B	71-55-6	1,1,1-TRICHLOROETHANE (TCA)	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/l	NA	NA	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
SW8260B	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-00-5	1,1,2-TRICHLOROETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-34-3	1,1-DICHLOROETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0024	< 0.0010 U
SW8260B	75-35-4	1,1-DICHLOROETHENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	87-61-6	1,2,3-TRICHLOROBENZENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	120-82-1	1,2,4-TRICHLOROBENZENE	mg/l	NA	NA	0.0021	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	mg/l	NA	NA	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	106-93-4	1,2-DIBROMOETHANE (EDB)	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**95-50-1**	**1,2-DICHLOROBENZENE**	**mg/l**	**1.37**	**0.094**	**0.756 D**	**0.407 D**	< 0.0010 U	0.0082	0.0019	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	**0.146 D**	0.0292	0.0149	0.0035	0.0979	0.0014
SW8260B	107-06-2	1,2-DICHLOROETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0024	0.0061	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	78-87-5	1,2-DICHLOROPROPANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	541-73-1	1,3-DICHLOROBENZENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	106-46-7	1,4-DICHLOROBENZENE	mg/l	NA	NA	0.0061	0.0022	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0053	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	123-91-1	1,4-Dioxane	mg/l	NA	NA	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U
SW8260B	78-93-3	2-BUTANONE (MEK)	mg/l	NA	NA	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	**95-49-8**	**2-CHLOROTOLUENE**	**mg/l**	NA	**1.5**	0.0034	< 0.0010 U	< 0.0010 U	0.0121	0.125	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.288 D	< 0.0010 U	**8.92 D**	0.198 D	1.23 D	0.0082
SW8260B	591-78-6	2-HEXANONE	mg/l	NA	NA	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	108-10-1	4-METHYL-2-PENTANONE (MIBK)	mg/l	NA	NA	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U
SW8260B	67-64-1	ACETONE	mg/l	NA	NA	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	71-43-2	BENZENE	mg/l	NA	NA	0.0062	< 0.0010 U	< 0.0010 U	0.0021	0.0065	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0253	0.600 D	0.411 D	0.870 D	0.0318
SW8260B	75-27-4	BROMODICHLOROMETHANE	mg/l	NA	NA	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U
SW8260B	75-25-2	BROMOFORM	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-83-9	BROMOMETHANE	mg/l	NA	NA	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	75-15-0	CARBON DISULFIDE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0021	0.0012	0.0014	0.0010	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	56-23-5	CARBON TETRACHLORIDE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-90-7**	**CHLOROBENZENE**	**mg/l**	**4.66**	**1.7**	0.162 D	0.0300	0.0043	0.0435	0.0117	0.0037	0.0370	0.0377	0.0141	< 0.0010 U	0.0027	**2.58 D**	1.56 D	**6.37 D**	**2.53 D**	**9.93 D**	0.0067
SW8260B	74-97-5	CHLOROBROMOMETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-00-3	CHLOROETHANE	mg/l	NA	NA	0.0032	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	67-66-3	CHLOROFORM	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-87-3	CHLOROMETHANE	mg/l	NA	NA	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	156-59-2	CIS-1,2-DICHLOROETHENE	mg/l	NA	NA	0.0028	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0011	< 0.0010 U	0.0012	< 0.0010 U
SW8260B	10061-01-5	CIS-1,3-DICHLOROPROPENE	mg/l	NA	NA	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	110-82-7	CYCLOHEXANE	mg/l	NA	NA	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	124-48-1	DIBROMOCHLOROMETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-71-8	DICHLORODIFLUOROMETHANE	mg/l	NA	NA	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	100-41-4	ETHYLBENZENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0012	< 0.0010 U	0.113 D	0.0563	0.209 D	< 0.0010 U
SW8260B	98-82-8	ISOPROPYLBENZENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0019	< 0.0010 U	0.0012	< 0.0010 U
SW8260B	79-20-9	METHYL ACETATE	mg/l	NA	NA	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	1634-04-4	METHYL TERT-BUTYL ETHER	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	108-87-2	METHYLCYCLOHEXANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0034	< 0.0010 U	< 0.0010 U	0.0016
SW8260B	75-09-2	METHYLENE CHLORIDE	mg/l	NA	NA	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	**MPXYLENE**	**m-Xylene & p-Xylene**	**mg/l**	**1.35**	**0.078***	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.311 D	0.0878	0.347 D	< 0.0020 U
SW8260B	**95-47-6**	**O-XYLENE**	**mg/l**	**1.35**	**0.078***	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0040	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0088	< 0.0010 U	0.120 D	0.0548	0.190 D	0.0019
SW8260B	100-42-5	STYRENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	127-18-4	TETRACHLOROETHENE (PCE)	mg/l	NA	NA	0.300 D	0.173 D	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0389	0.0086	0.0014	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-88-3**	**TOLUENE**	**mg/l**	**5.3**	**1.7**	0.0106	0.0018	< 0.0010 U	0.0021	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0016	< 0.0010 U	**4.45 D**	1.47 D	**3.53 D**	0.0050
SW8260B	156-60-5	TRANS-1,2-DICHLOROETHENE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-02-6	TRANS-1,3-DICHLOROPROPENE	mg/l	NA	NA	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	79-01-6	TRICHLOROETHYLENE	mg/l	NA	NA	0.0049	0.0017	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-69-4	TRICHLOROFLUOROMETHANE	mg/l	NA	NA	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-01-4	VINYL CHLORIDE	mg/l	NA	NA	< 0.0010 U	0.0497	0.0383	0.0027	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0057	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U

Table 4-2 Groundwater Analytical Data
Former Ciba-Geigy Facility
180 Mill Street, Cranston, RI
June 2012

			lab_sdg	1206239	1206239	1206239	1206239	1206197	1206197	1206197	1206197	1206197	1206197	1206197	1206197	**1206197**	**1206197**	1206197	1206197	1206197	1206230
			sys_loc_code	GW9	GW9	GW10	GW10	MW-004D	MW-004S	MW-010D	MW-010S	MW-012D	MW-012S	MW-020S	MW-034D	**MW-034S**	**MW-102D**	MW-102S	MW-102S	MW-14D	MW-001D
			sys_sample_code	GW9 19-21 061412-	GW9 24-26 061412-	W10 19-21 061412	W10 24-26 061412	MW-4D 061212-1	MW-4S 061212-1	MW-10D 061212-1	MW-10S 061212-1	MW-12D 061212-1	MW-12S 061212-1	MW-20S 061212-1	MW-34D 061212-1	**MW-34S 061212-**	**W-102D 061212-**	MW-102S 061212-1	MW-102S 061212-2	MW-14D 061212-1	MW-1D-061312-1
			sample_date	6/14/2012	6/14/2012	6/14/2012	6/14/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012	**6/12/2012**	**6/12/2012**	6/12/2012	6/12/2012	6/12/2012	6/13/2012
analytic_method	cas_rn	chemical_name	report_result_unit																		
SW8260B	71-55-6	1,1,1-TRICHLOROETHANE (TCA)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
SW8260B	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-00-5	1,1,2-TRICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-34-3	1,1-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0016	0.0015	< 0.0010 U	< 0.0010 U
SW8260B	75-35-4	1,1-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	87-61-6	1,2,3-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	120-82-1	1,2,4-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0063	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	106-93-4	1,2-DIBROMOETHANE (EDB)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**95-50-1**	**1,2-DICHLOROBENZENE**	**mg/l**	0.0037	< 0.0010 U	< 0.0010 U	0.0022	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0049	0.0639	0.0051	0.0050	< 0.0010 U	< 0.0010 U
SW8260B	107-06-2	1,2-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	78-87-5	1,2-DICHLOROPROPANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	541-73-1	1,3-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0027	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	106-46-7	1,4-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0090	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	123-91-1	1,4-Dioxane	mg/l	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U
SW8260B	78-93-3	2-BUTANONE (MEK)	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	**95-49-8**	**2-CHLOROTOLUENE**	**mg/l**	0.0579	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0050	0.915 D	**48.4 D**	0.160 D	0.152 D	< 0.0010 U	< 0.0010 U
SW8260B	591-78-6	2-HEXANONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	108-10-1	4-METHYL-2-PENTANONE (MIBK)	mg/l	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U
SW8260B	67-64-1	ACETONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	71-43-2	BENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0033	0.0259	0.0017	0.0017	< 0.0010 U	< 0.0010 U
SW8260B	75-27-4	BROMODICHLOROMETHANE	mg/l	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U
SW8260B	75-25-2	BROMOFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-83-9	BROMOMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	75-15-0	CARBON DISULFIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0011	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	56-23-5	CARBON TETRACHLORIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-90-7**	**CHLOROBENZENE**	**mg/l**	0.0035	0.0013	0.0011	0.0012	< 0.0010 U	0.0012	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.138 D	**5.48 D**	1.02 D	1.10 D	< 0.0010 U	< 0.0010 U
SW8260B	74-97-5	CHLOROBROMOMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-00-3	CHLOROETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	67-66-3	CHLOROFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-87-3	CHLOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	156-59-2	CIS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0013	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-01-5	CIS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	110-82-7	CYCLOHEXANE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	124-48-1	DIBROMOCHLOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-71-8	DICHLORODIFLUOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	100-41-4	ETHYLBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.280 E	0.0019	0.0018	< 0.0010 U	< 0.0010 U
SW8260B	98-82-8	ISOPROPYLBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0034	0.0011	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-20-9	METHYL ACETATE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	1634-04-4	METHYL TERT-BUTYL ETHER	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	108-87-2	METHYLCYCLOHEXANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0092	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-09-2	METHYLENE CHLORIDE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	**MPXYLENE**	**m-Xylene & p-Xylene**	**mg/l**	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	**0.820 E**	0.0021	0.0021	< 0.0020 U	< 0.0020 U
SW8260B	**95-47-6**	**O-XYLENE**	**mg/l**	0.0013	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	**0.145 D**	**0.253 E**	0.0275	0.0263	< 0.0010 U	< 0.0010 U
SW8260B	100-42-5	STYRENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	127-18-4	TETRACHLOROETHENE (PCE)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0025	< 0.0010 U	0.0014	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0126	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-88-3**	**TOLUENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0023	< 0.0010 U	**15.4 D**	0.0022	0.0021	< 0.0010 U	< 0.0010 U
SW8260B	156-60-5	TRANS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-02-6	TRANS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	79-01-6	TRICHLOROETHYLENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0013	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-69-4	TRICHLOROFLUOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-01-4	VINYL CHLORIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U

Table 4-2 Groundwater Analytical Data
Former Ciba-Geigy Facility
180 Mill Street, Cranston, RI
June 2012

			lab_sdg	1206230	1206230	1206230	1206230	**1206230**	1206230	1206230	1206230	1206230	1206230	1206230	1206230	1206238	1206238	1206238	**1206238**	1206238	**1206238**	1206238
			sys_loc_code	MW-001S	MW-002S	MW-029D	MW-031D	**P-035S**	P-036S	P-037S	P-038S	PW-110	PW-120	PW-130	PW-130	MW-013S	MW-021S	MW-022S	**MW-100D**	MW-100S	**MW-101D**	MW-101S
			sys_sample_code	MW-1S-061312-1	MW-2S-061312-1	MW-29D-061312-1	MW-31D-061312-1	**P-35S-061312-1**	P-36S-061312-1	P-37S-061312-1	P-38S-061312-1	PW-110-061312-1	PW-120-061312-1	PW-130-061312-1	PW-130-061312-2	MW-13S-061412-1	MW-215-061412-1	MW-22S-061412-1	**W-100D-061412**	MW-100S-061412-	**W-101D-061412**	MW-101S-061412-
			sample_date	6/13/2012	6/13/2012	6/13/2012	6/13/2012	**6/13/2012**	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/13/2012	6/14/2012	6/14/2012	6/14/2012	**6/14/2012**	6/14/2012	**6/14/2012**	6/14/2012
analytic_method	cas_rn	chemical_name	report_result_unit																			
SW8260B	71-55-6	1,1,1-TRICHLOROETHANE (TCA)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
SW8260B	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-00-5	1,1,2-TRICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-34-3	1,1-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0018	< 0.0010 U	0.0014	< 0.0010 U
SW8260B	75-35-4	1,1-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	87-61-6	1,2,3-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	120-82-1	1,2,4-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	106-93-4	1,2-DIBROMOETHANE (EDB)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**95-50-1**	**1,2-DICHLOROBENZENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0125	0.0215	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0781	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0094	0.0212
SW8260B	107-06-2	1,2-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	78-87-5	1,2-DICHLOROPROPANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	541-73-1	1,3-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	106-46-7	1,4-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0017	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0016	< 0.0010 U
SW8260B	123-91-1	1,4-Dioxane	mg/l	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U
SW8260B	78-93-3	2-BUTANONE (MEK)	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	**95-49-8**	**2-CHLOROTOLUENE**	**mg/l**	0.0062	< 0.0010 U	< 0.0010 U	0.0429	0.111 D	0.0030	0.0170	< 0.0010 U	0.0026	0.0056	0.0015	0.0013	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0578	< 0.0010 U	0.421 D	0.0178
SW8260B	591-78-6	2-HEXANONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	108-10-1	4-METHYL-2-PENTANONE (MIBK)	mg/l	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U
SW8260B	67-64-1	ACETONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	71-43-2	BENZENE	mg/l	0.0044	0.0049	< 0.0010 U	0.0104	0.454 D	0.0034	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0102	0.0029	0.0027	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0050	< 0.0010 U	0.0026	0.0010
SW8260B	75-27-4	BROMODICHLOROMETHANE	mg/l	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U
SW8260B	75-25-2	BROMOFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-83-9	BROMOMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	75-15-0	CARBON DISULFIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0027	0.0018	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	56-23-5	CARBON TETRACHLORIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-90-7**	**CHLOROBENZENE**	**mg/l**	0.785 D	0.137 D	< 0.0010 U	0.0925	**7.16 D**	0.123 D	0.0027	< 0.0010 U	0.0012	0.296 D	0.133 D	0.134 D	< 0.0010 U	< 0.0010 U	< 0.0010 U	**1.76 D**	0.0596	**7.93 D**	1.36 D
SW8260B	74-97-5	CHLOROBROMOMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-00-3	CHLOROETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	67-66-3	CHLOROFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-87-3	CHLOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	156-59-2	CIS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	0.0037	< 0.0010 U	< 0.0010 U	0.0026	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0170	0.0012	0.0012	< 0.0010 U	< 0.0010 U	0.0036	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-01-5	CIS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	110-82-7	CYCLOHEXANE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	124-48-1	DIBROMOCHLOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-71-8	DICHLORODIFLUOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	100-41-4	ETHYLBENZENE	mg/l	0.0025	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0032	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0017	< 0.0010 U
SW8260B	98-82-8	ISOPROPYLBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0032	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-20-9	METHYL ACETATE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	1634-04-4	METHYL TERT-BUTYL ETHER	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	108-87-2	METHYLCYCLOHEXANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0011	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-09-2	METHYLENE CHLORIDE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	**MPXYLENE**	**m-Xylene & p-Xylene**	**mg/l**	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0030	< 0.0020 U
SW8260B	**95-47-6**	**O-XYLENE**	**mg/l**	0.0010	< 0.0010 U	< 0.0010 U	0.0043	0.0300	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0048	< 0.0010 U	0.0053	0.0016
SW8260B	100-42-5	STYRENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	127-18-4	TETRACHLOROETHENE (PCE)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0014	< 0.0010 U	0.0037	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-88-3**	**TOLUENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0015	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0017	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0024	< 0.0010 U
SW8260B	156-60-5	TRANS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-02-6	TRANS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	79-01-6	TRICHLOROETHYLENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0017	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-69-4	TRICHLOROFLUOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-01-4	VINYL CHLORIDE	mg/l	< 0.0010 U	0.0026	< 0.0010 U	0.0033	0.0013	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	0.0084	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U

Table 4-2 Groundwater Analytical Data
Former Ciba-Geigy Facility
180 Mill Street, Cranston, RI
June 2012

			lab_sdg	1206238	1206238	1206279	1206197	1206197	1206230	1206238	1206230
			sys_loc_code	P-013D	P-030D						
			sys_sample_code	P-13D-061412-1	P-30D-061412-1	EB-061512-3	EB 061212-3	RIP BLANK_061220	EB-061312-3	TB-061412-3	TB-061312-3
			sample_date	6/14/2012	6/14/2012	6/15/2012	6/12/2012	6/12/2012	6/13/2012	6/14/2012	6/13/2012
analytic_method	cas_rn	chemical_name	report_result_unit								
SW8260B	71-55-6	1,1,1-TRICHLOROETHANE (TCA)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
SW8260B	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-00-5	1,1,2-TRICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-34-3	1,1-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-35-4	1,1-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	87-61-6	1,2,3-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	120-82-1	1,2,4-TRICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	106-93-4	1,2-DIBROMOETHANE (EDB)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**95-50-1**	**1,2-DICHLOROBENZENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	107-06-2	1,2-DICHLOROETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	78-87-5	1,2-DICHLOROPROPANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	541-73-1	1,3-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	106-46-7	1,4-DICHLOROBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	123-91-1	1,4-Dioxane	mg/l	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U
SW8260B	78-93-3	2-BUTANONE (MEK)	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	**95-49-8**	**2-CHLOROTOLUENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	591-78-6	2-HEXANONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	108-10-1	4-METHYL-2-PENTANONE (MIBK)	mg/l	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U	< 0.0250 U
SW8260B	67-64-1	ACETONE	mg/l	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U	< 0.0100 U
SW8260B	71-43-2	BENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-27-4	BROMODICHLOROMETHANE	mg/l	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U	< 0.0006 U
SW8260B	75-25-2	BROMOFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-83-9	BROMOMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	75-15-0	CARBON DISULFIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	56-23-5	CARBON TETRACHLORIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-90-7**	**CHLOROBENZENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-97-5	CHLOROBROMOMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-00-3	CHLOROETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	67-66-3	CHLOROFORM	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	74-87-3	CHLOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	156-59-2	CIS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-01-5	CIS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	110-82-7	CYCLOHEXANE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	124-48-1	DIBROMOCHLOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-71-8	DICHLORODIFLUOROMETHANE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	100-41-4	ETHYLBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	98-82-8	ISOPROPYLBENZENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	79-20-9	METHYL ACETATE	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
SW8260B	1634-04-4	METHYL TERT-BUTYL ETHER	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	108-87-2	METHYLCYCLOHEXANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-09-2	METHYLENE CHLORIDE	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	**MPXYLENE**	**m-Xylene & p-Xylene**	**mg/l**	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
SW8260B	**95-47-6**	**O-XYLENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	100-42-5	STYRENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	127-18-4	TETRACHLOROETHENE (PCE)	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	**108-88-3**	**TOLUENE**	**mg/l**	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	156-60-5	TRANS-1,2-DICHLOROETHENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	10061-02-6	TRANS-1,3-DICHLOROPROPENE	mg/l	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U	< 0.0004 U
SW8260B	79-01-6	TRICHLOROETHYLENE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-69-4	TRICHLOROFLUOROMETHANE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U
SW8260B	75-01-4	VINYL CHLORIDE	mg/l	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U	< 0.0010 U

Appendix A-2 Barrier Installation and Monitoring Report (CEC, 2020)

Table 3

Groundwater Grab Sample Data Summary

Ciba-Geigy RCRA Closure Project

XMIP -02	**VOCs (ug/L)**					
1,2-Dichlorobenzene	**4,570**	**3,450**	**4,230**	**2,680**	**983**	94
2-Chlorotoluene	100 U	100 U	100 U	100 U	100 U	1,500
Chlorobenzene	**5,300**	**3,810**	**2,460**	1,200	372	1,700
Toluene	100 U	100 U	100 U	100 U	100 U	1,700
Xylene O	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	78
Xylene P,M	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	78
*Total Xylenes	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	78

Sample Name	**XMIP-3**					**Media Protection Standards (MPS)**
Depth Below Grade Surface (feet)	**14-16**	**16-18**	**18-20**[a]	**20-22**	**22-24**	
Sample Date	**07/29/2019**	**07/29/2019**	**07/29/2019**	**07/29/2019**	**07/29/2019**	
Laboratory Sample ID:	**19G0893-01**	**19G0893-02**	**19G0893-03**	**19G0893-04**	**19G0893-05**	
VOCs (ug/L)						
1,2-Dichlorobenzene	**38,600**	**121,000**	**704,000,000**	**95,500**	**90,300**	94
2-Chlorotoluene	100 U	390	**962,000**	589	404	1,500
Chlorobenzene	**8,770**	**27,400**	**20,600,000**	**25,500**	**20,600**	1,700
Toluene	130	905	**644,000**	982	792	1,700
Xylene O	**100 U**	**100 U**	**99,800**	**100 U**	**100 U**	78
Xylene P,M	**200 U**	**200 U**	**234,000**	**200 U**	**200 U**	78
*Total Xylenes	**300 U**	**300 U**	**333,800**	**300 U**	**300 U**	78

Notes:

a - The sample bottle contained free product and the data are not representative of groundwater

VOCs = Volatile organic compounds

ug/L = Micrograms per liter

Bold = Analytes above RI DEM GB Objectives and/or MPS

U = Analytes below laboratory method detection limits

* Sum of O, P&M Xylene. Non Detect are not included in the total.

Location XMIP-3 inadvertently contain DNAPL and results are not considered dissolved

Trip Blank Data for 7/29/19 is non-detect.

Table 3

Groundwater Grab Sample Data Summary

Ciba-Geigy RCRA Closure Project

Sample Name	**XMIP-4**						**Media Protection Standards (MPS)**
Depth Below Grade Surface (feet)	**12-14**	**14-16**	**16-18**	**18-20**	**20-22**	**22-24**	
Sample Date	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	
Laboratory Sample ID:	**19G0852-01**	**19G0852-02**	**19G0852-03**	**19G0852-04**	**19G0852-05**	**19G0852-06**	
	VOCs (ug/L)						
1,2-Dichlorobenzene	**100 U**	**199**	**4,550**	**8,820**	**5,040**	**18,900**	94
2-Chlorotoluene	100 U	138	388	513	267	100 U	1,500
Chlorobenzene	917	**14,400**	**27,000**	**25,900**	**6,240**	**2,230**	1,700
Toluene	100 U	100 U	100 U	106	100 U	100 U	1,700
Xylene O	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	78
Xylene P,M	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	78
*Total Xylenes	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	78

Sample Name	**XMIP-19**						**Media Protection Standards (MPS)**
Depth Below Grade Surface (feet)	**12-14**	**14-16**	**16-18**	**18-20**	**20-22**	**22-24**	
Sample Date	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	**07/26/2019**	
Laboratory Sample ID:	**19G0852-07**	**19G0852-08**	**19G0852-09**	**19G0852-10**	**19G0852-11**	**19G0852-12**	
	VOCs (ug/L)						
1,2-Dichlorobenzene	**184**	**7,300**	**77,400**	**72,100**	**94,200**	**35,400**	94
2-Chlorotoluene	100 U	100 U	100 U	100 U	100 U	100 U	1,500
Chlorobenzene	963	**7,480**	**24,300**	**19,800**	**19,200**	**8,510**	1,700
Toluene	100 U	217	1,030	1,270	1,170	569	1,700
Xylene O	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	78
Xylene P,M	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	78
*Total Xylenes	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	78

Notes:

VOCs = Volatile organic compounds

ug/L = Micrograms per liter

Bold = Analytes above RI DEM GB Objectives and/or MPS

"<" = Analytes below laboratory detection limits

* Sum of O, P&M Xylene. Non Detect are not included in the total.

Trip Blank Data for 7/29/19 is non-detect.

Table 3

Groundwater Grab Sample Data Summary

Ciba-Geigy RCRA Closure Project

Sample Name	**XMIP-20**						**Media Protection Standards (MPS)**
Depth Below Grade Surface (feet)	**12-14**	**14-16**	**16-18**	**18-20**	**20-22**	**22-24**	
Sample Date	**07/29/2019**	**07/29/2019**	**7/29/2019**	**07/29/2019**	**07/29/2019**	**07/29/2019**	
Laboratory Sample ID:	**19G0893-06**	**19G0893-07**	**19G0893-08**	**19G0893-09**	**19G0893-10**	**19G0893-11**	
	VOCs (ug/L)						
1,2-Dichlorobenzene	**28,200**	**9,130**	**33,800**	**20,000**	**8,930**	**4,230**	94
2-Chlorotoluene	100 U	173	324	226	100 U	100 U	1,500
Chlorobenzene	**9,270**	**13,800**	**18,700**	**9,810**	**5,540**	1,190	1,700
Toluene	232	100 U	100 U	100 U	100 U	100 U	1,700
Xylene O	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	**100 U**	78
Xylene P,M	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	**200 U**	78
*Total Xylenes	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	**300 U**	78

Notes:

VOCs = Volatile organic compounds

ug/L = Micrograms per liter

Bold = Analytes above USEPA Drinking Water MCL or MPS

"<" = Analytes below laboratory detection limits

* Sum of O, P&M Xylene. Non Detect are not included in the total.

Trip Blank Data for 7/29/19 is non-detect.

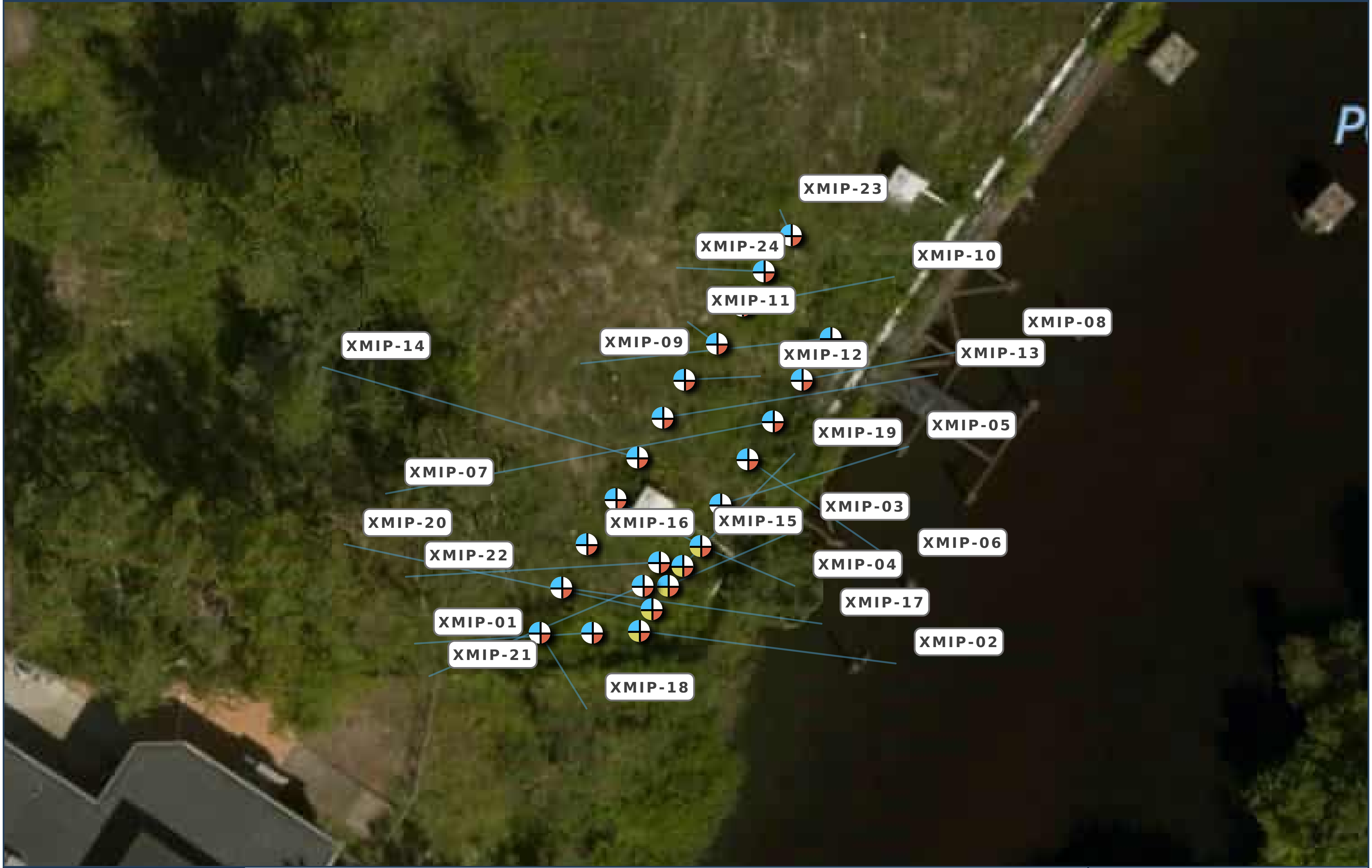
Table 14
Treatment Well Baseline Groundwater Sampling Data
Ciba-Geigy RCRA Closure Project

	TW-1A	**TW-2A**	**TW-3A**	**TW-4A**	**TW-1B**	**TW-2B**	**TW-3B**	**TW-4B**	**PZ-8i**
1,2-DCB	3.5	**1,260**	42.8	5.0	65.3	NS	**3,280**	35.9	**2,290**
CB	49.9	274	572	6.7	92.3	NS	796	35.7	314
2-CT	< 1.0	2.1	<1.0	<1.0	<1.0	NS	5.7	<1.0	6.8
Tol	<1.0	5.7	73.6	<1.0	1.5	NS	37.7	<1.0	13.5
Xyl	<3.0	<3.3	11.4	<3.0	<3.0	NS	7.4	<3.0	3.6
PCBs	<0.09	<0.09	<0.09	<0.09	<0.09	NS	<0.10	<0.09	**2.72**
pH	6.80	10.06	7.88	6.95	7.44	NS	7.42	6.64	6.76
Sulfate	16.8	34.0	18.8	8.7	7.9	NS	24.0	6.6	22.0
DO	0.14	0.36	0.08	0.19	0.13	NS	0.90	0.24	0.14
ORP	-14.8	-239.5	-151.5	-87.5	-104.9	NS	-147.6	-109.6	-97.6

1,2-DCB = 1,2-Dichlorobenzene
CB = Chlorobenzene
2-CT = 2 Chlorotoluene
Tol = Toluene
Xyl = Total Xylenes
All COC data is reported in µg/L
DO = Dissolved Oxygen
DO and sulfate data is reported mg/L
ORP = Oxidation Reduction Potential and is reported in millivolts (mV)
Bold values = greater than respective MPS or MCL
NS = Not Sampled

Data from the baseline sampling shows the following:

1) While wells TW-2b and PZ-8i were cased to 20’ bgs to prevent the potential for NAPL to infiltrate into the conduit, both wells showed signs of NAPL accumulation. This occurrence is being remedied by the installation of SoakEase, an absorbent purposed of this application (see SOP in **Appendix F**).
2) For the upland wells, dissolved-phase 1,2-DCB dominates on a mass basis with the highest levels occurring at TW-2A, TW-3B and PZ-8i. The only well with detected PCBs was PZ-8i. The distribution and composition of impacts is consistent with transport from the XMIP-03 source area.



Address:	Client:	Lead Consultant:	Elevation Range:
Cranston, RI	BASF	CEC	14 - -36 ft.

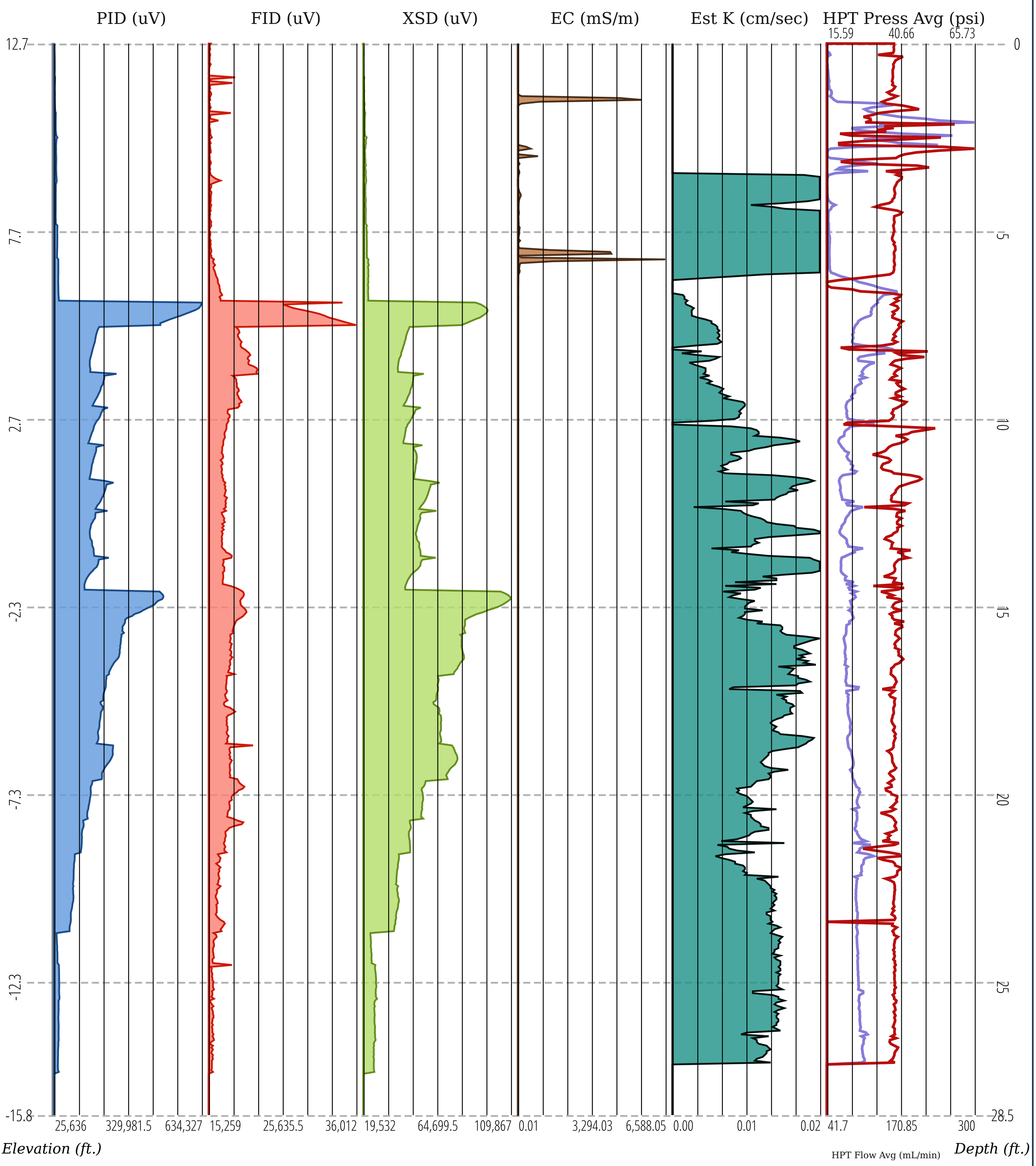
SampleID	XMIP-19 12...	XMIP-19 14...	XMIP-19 16...	XMIP-19 18...	XMIP-19 20-22	XMIP-19 22-24	XMIP-2 14-16	XMIP-2 16-18	XMIP-2 18-20	XMIP-2 20-22
Date	7/26/19	7/26/19	7/26/19	7/26/19	7/26/19	7/26/19	7/29/19	7/29/19	7/29/19	7/29/19
StationName	XMIP-19	XMIP-19	XMIP-19	XMIP-19	XMIP-19	XMIP-19	XMIP-02	XMIP-02	XMIP-02	XMIP-02
TopDepth	12	14	16	18	20	22	14	16	18	20
BottomDepth	14	16	18	20	22	24	16	18	20	22
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1,2-Dichlorobenzene	0.184	7.3	77.4	72.1	94.2	35.4	4.57	3.45	4.23	2.68
1,3,5-Trimethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	<0.1	0.336	1.34	0.986	<0.1	<0.1	0.408	0.624	0.159	<0.1
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.963	7.48	24.3	19.8	19.2	8.51	5.3	3.81	2.46	1.2
cis-1,2-Dichloroethene	0.699	4.2	2.36	3.98	1.03	0.413	0.805	0.626	0.259	<0.1
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	<0.1	0.217	1.03	1.27	1.17	0.569	<0.1	<0.1	<0.1	<0.1
Vinyl Chloride	<0.1	0.229	0.192	0.244	<0.1	<0.1	0.131	<0.1	<0.1	<0.1
Xylene O	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene P,M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

SampleID	XMIP-2 22-24	XMIP-20 12...	XMIP-20 14...	XMIP-20 16...	XMIP-20 18-20	XMIP-20 20-22	XMIP-20 22-24	XMIP-3 14-16	XMIP-3 16-18	XMIP-3 18-20
Date	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19	7/29/19
StationName	XMIP-02	XMIP-20	XMIP-20	XMIP-20	XMIP-20	XMIP-20	XMIP-20	XMIP-03	XMIP-03	XMIP-03
TopDepth	22	12	14	16	16	20	22	14	16	18
BottomDepth	24	14	16	18	18	22	24	16	18	20
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1,2-Dichlorobenzene	0.983	28.2	9.13	33.8	20	8.93	4.23	38.6	121	704000
1,3,5-Trimethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	26
2-Chlorotoluene	<0.1	<0.1	0.173	0.324	0.226	<0.1	<0.1	<0.1	0.39	962
4-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	22.1
Benzene	<0.1	0.183	4.04	1.46	0.596	0.343	<0.1	0.787	1.3	289
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
Chlorobenzene	0.372	9.27	13.8	18.7	9.81	5.54	1.19	8.77	27.4	20600
cis-1,2-Dichloroethene	<0.1	8.26	1.27	1.09	0.313	0.263	<0.1	2.42	3.25	273
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	82.9
Toluene	<0.1	0.232	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	0.905	644
Vinyl Chloride	<0.1	0.351	0.193	0.155	<0.1	<0.1	<0.1	0.124	<0.1	<10
Xylene O	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	99.8
Xylene P,M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	234

SampleID	XMIP-3 20-22	XMIP-3 22-24	XMIP-4 12-14	XMIP-4 14-16	XMIP-4 16-18	XMIP-4 18-20	XMIP-4 20-22	XMIP-4 22-24
Date	7/29/19	7/29/19	7/26/19	7/26/19	7/26/19	7/26/19	7/26/19	7/26/19
StationName	XMIP-03	XMIP-03	XMIP-04	XMIP-04	XMIP-04	XMIP-04	XMIP-04	XMIP-04
TopDepth	20	22	12	14	16	18	20	22
BottomDepth	22	24	14	16	18	20	22	24
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1,2-Dichlorobenzene	95.5	90.3	<0.1	0.199	4.55	8.82	5.04	18.9
1,3,5-Trimethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorotoluene	0.589	0.404	<0.1	0.138	0.388	0.513	0.267	<0.1
4-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	1.16	0.716	<0.1	0.67	9.94	9.9	4.06	0.244
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	25.5	20.6	0.917	14.4	27	25.9	6.24	2.23
cis-1,2-Dichloroethene	2.61	1.18	1.18	2.54	0.34	0.38	0.373	0.962
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	0.982	0.792	<0.1	<0.1	<0.1	0.106	<0.1	<0.1
Vinyl Chloride	<0.1	<0.1	<0.1	0.183	<0.1	<0.1	<0.1	<0.1
Xylene O	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene P,M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Former Ciba-Geigy - Cranston

XMIP-01 *MHP INDIVIDUAL*



X Scale: individual

Y Scale: individual

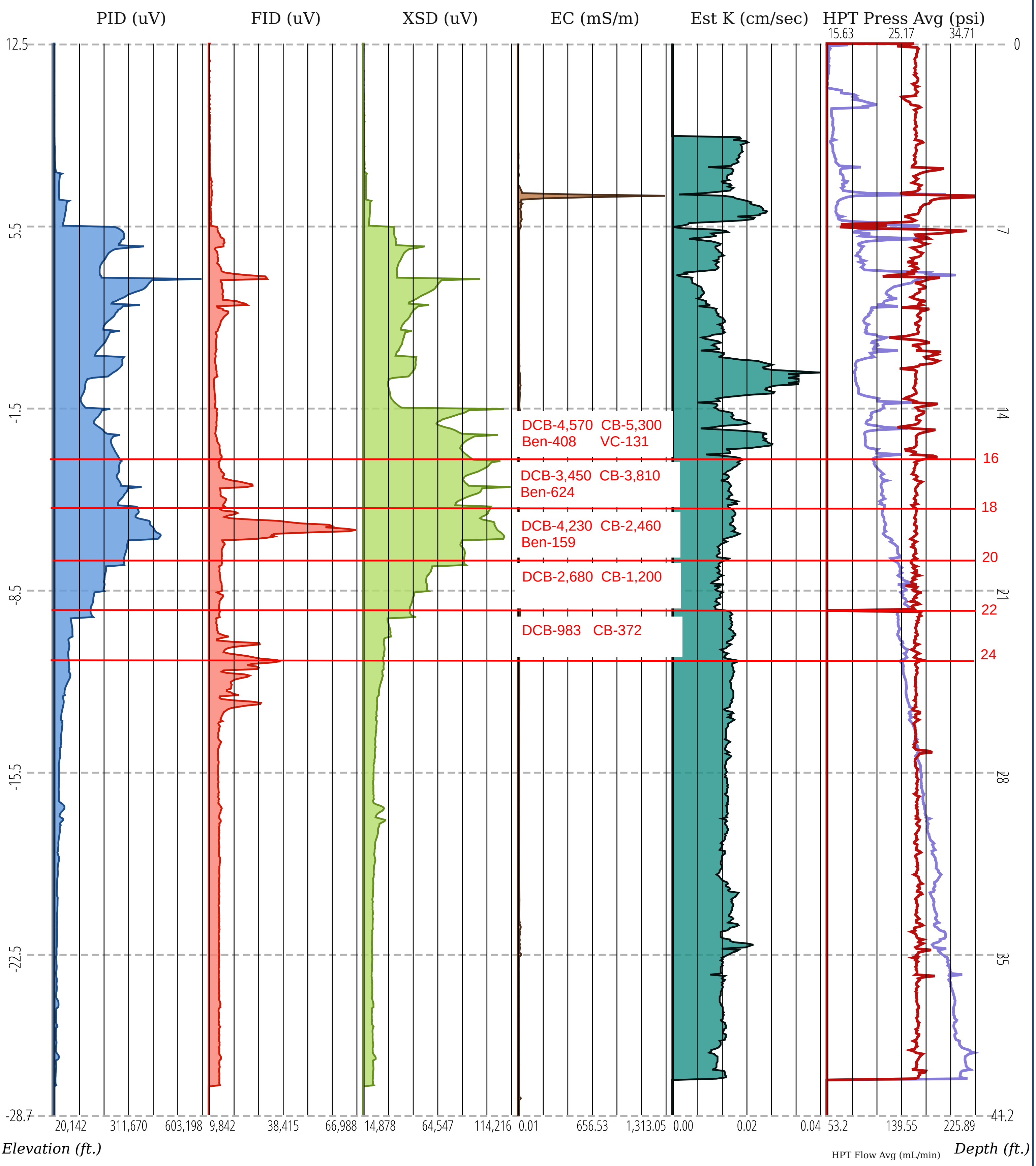
Lat/Lng: 41.7659,-71.4120

Elevation Range: 12.7 - (-15.8) ft.

Depth Range: 0 - 28.5 ft.

Former Ciba-Geigy - Cranston

XMIP-02 *MHP INDIVIDUAL*



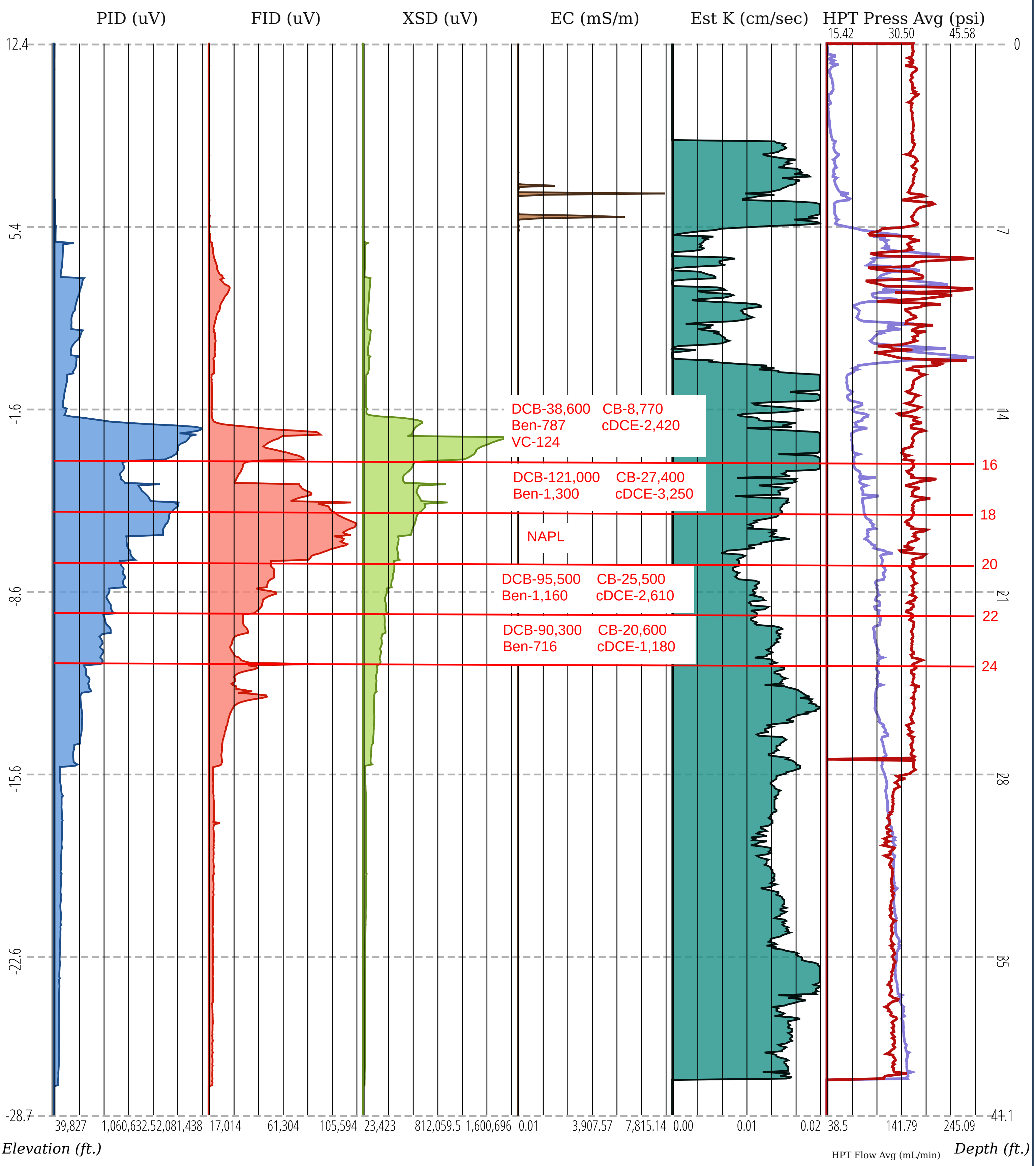
smartdata

X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7659,-71.4119	12.5 - (-28.7) ft.

Depth Range:
0 - 41.2 ft.

Former Ciba-Geigy - Cranston

XMIP-03 *MHP INDIVIDUAL*



DCB-38,600 CB-8,770
Ben-787 cDCE-2,420
VC-124

DCB-121,000 CB-27,400
Ben-1,300 cDCE-3,250

NAPL

DCB-95,500 CB-25,500
Ben-1,160 cDCE-2,610

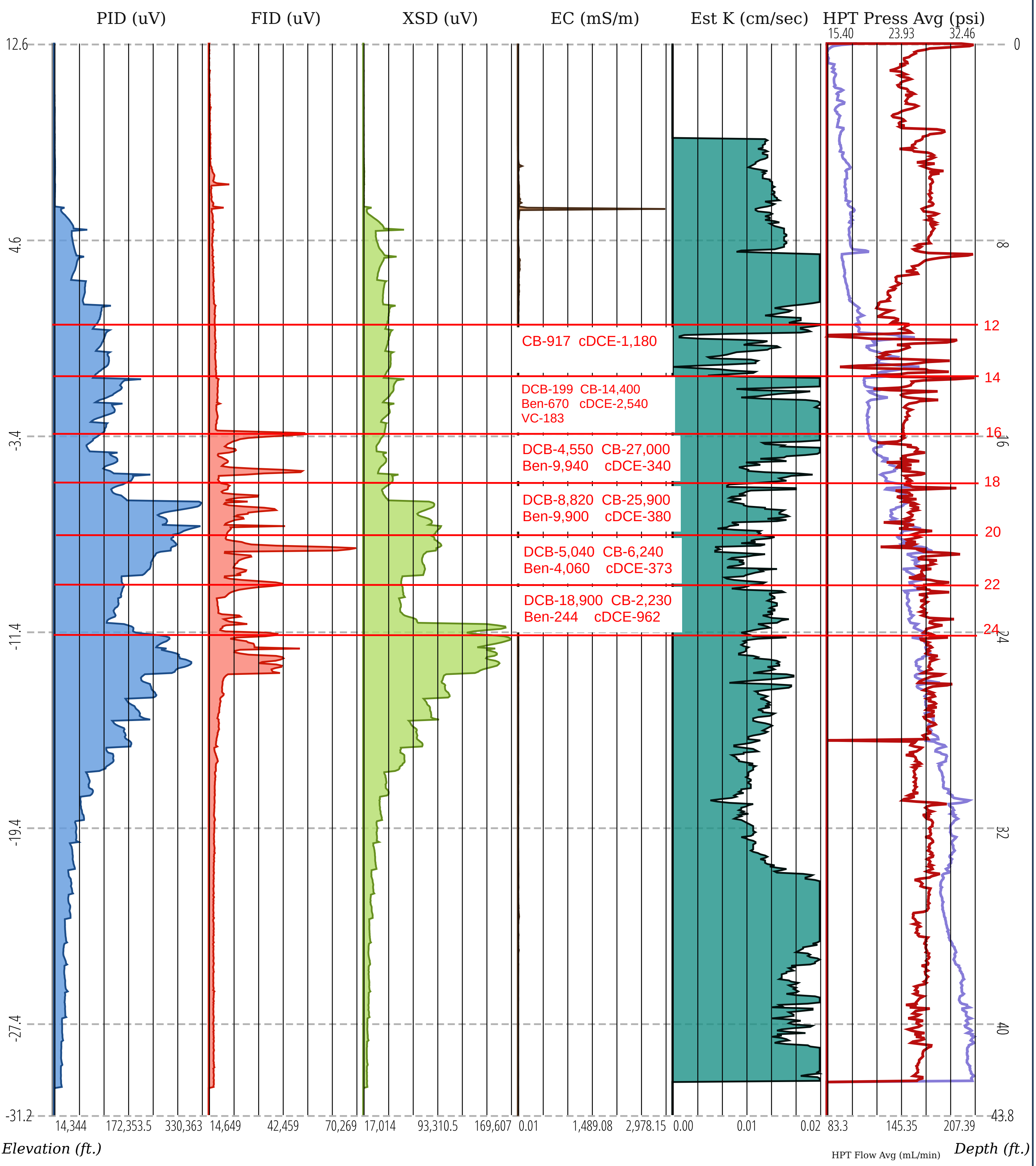
DCB-90,300 CB-20,600
Ben-716 cDCE-1,180

X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7660,-71.4119	12.4 - (-28.7) ft.

Depth Range:
0 - 41.1 ft.

Former Ciba-Geigy - Cranston

XMIP-04 *MHP INDIVIDUAL*



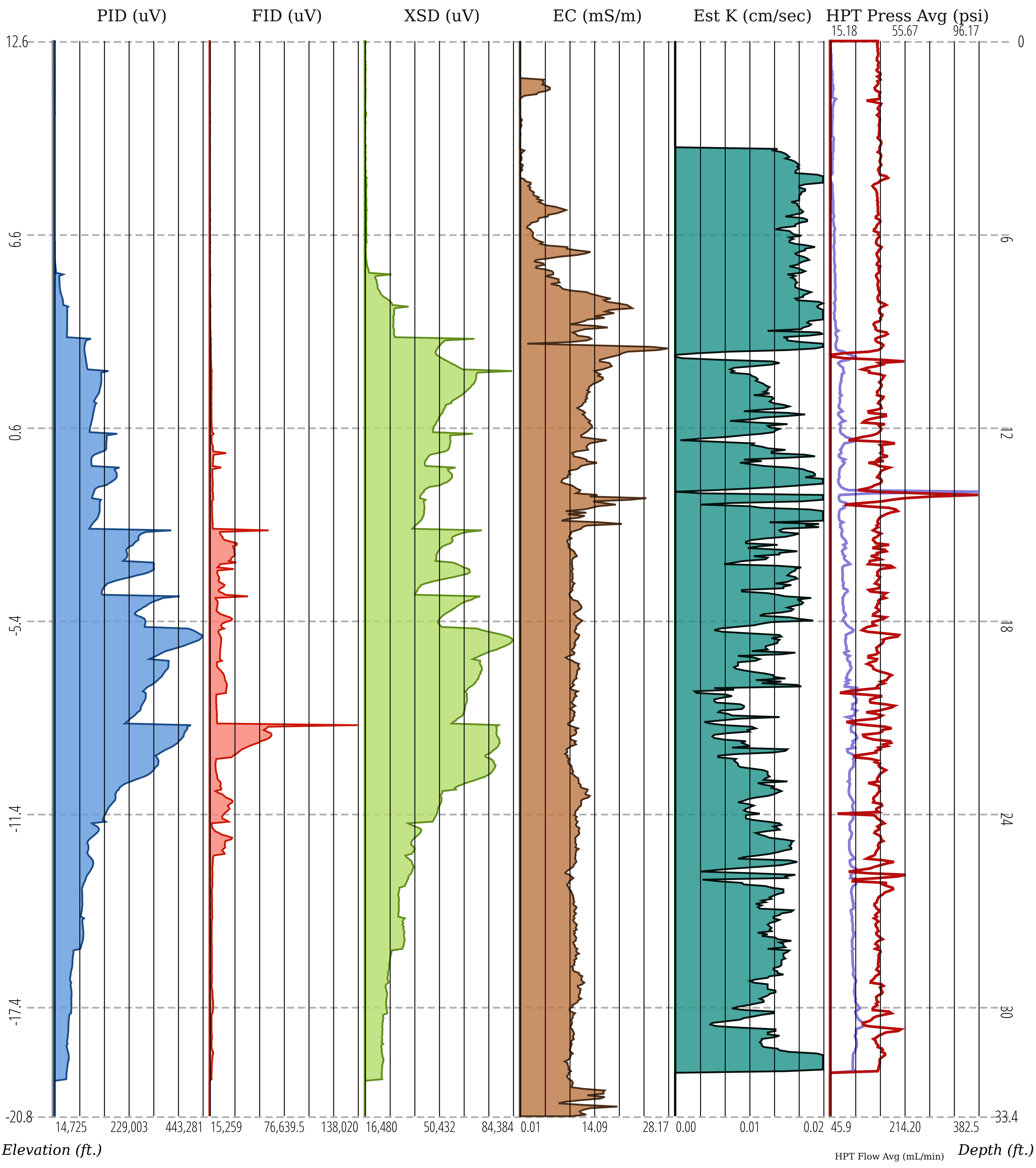
smartdata

X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7660,-71.4119	12.6 - (-31.2) ft.

Depth Range:
0 - 43.8 ft.

Former Ciba-Geigy - Cranston

XMIP-05 *MHP INDIVIDUAL*



X Scale: individual

Y Scale: individual

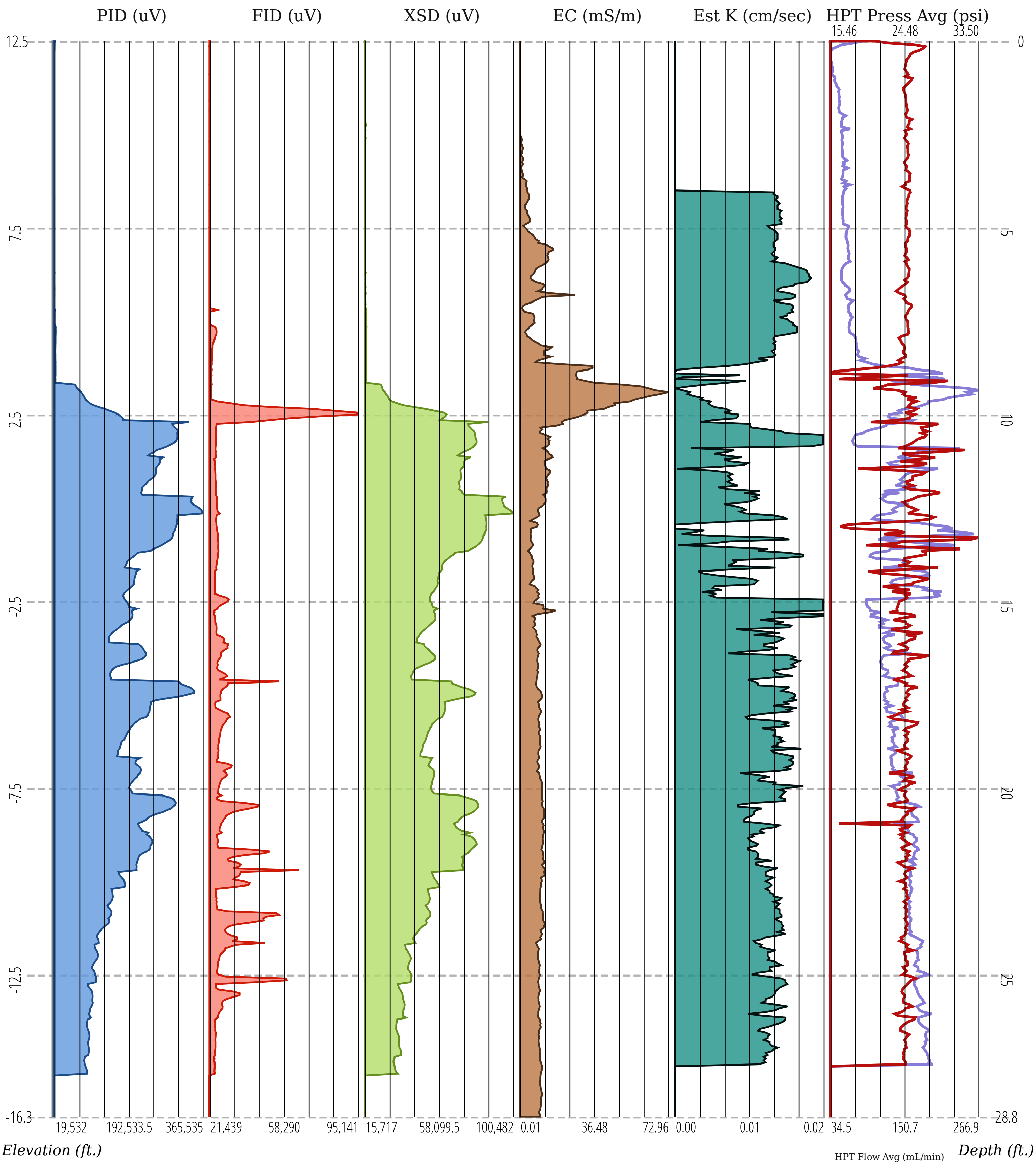
Lat/Lng: 41.7660,-71.4119

Elevation Range: 12.6 - (-20.8) ft.

Depth Range: 0 - 33.4 ft.

Former Ciba-Geigy - Cranston

XMIP-06 *MHP INDIVIDUAL*



X Scale: individual

Y Scale: individual

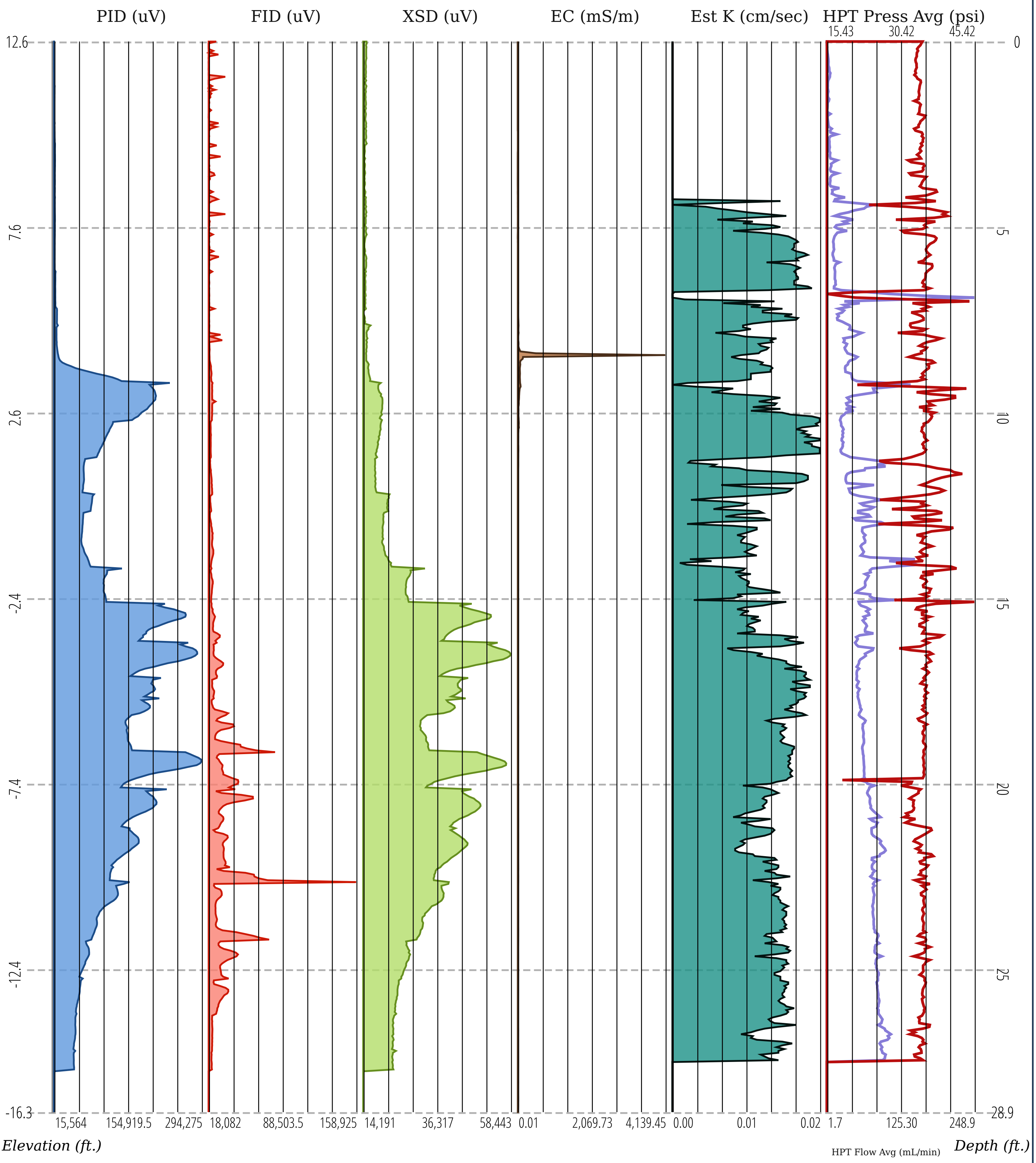
Lat/Lng: 41.7660,-71.4119

Elevation Range: 12.5 - (-16.3) ft.

Depth Range: 0 - 28.8 ft.

Former Ciba-Geigy - Cranston

XMIP-07 *MHP INDIVIDUAL*



X Scale: individual

Y Scale: individual

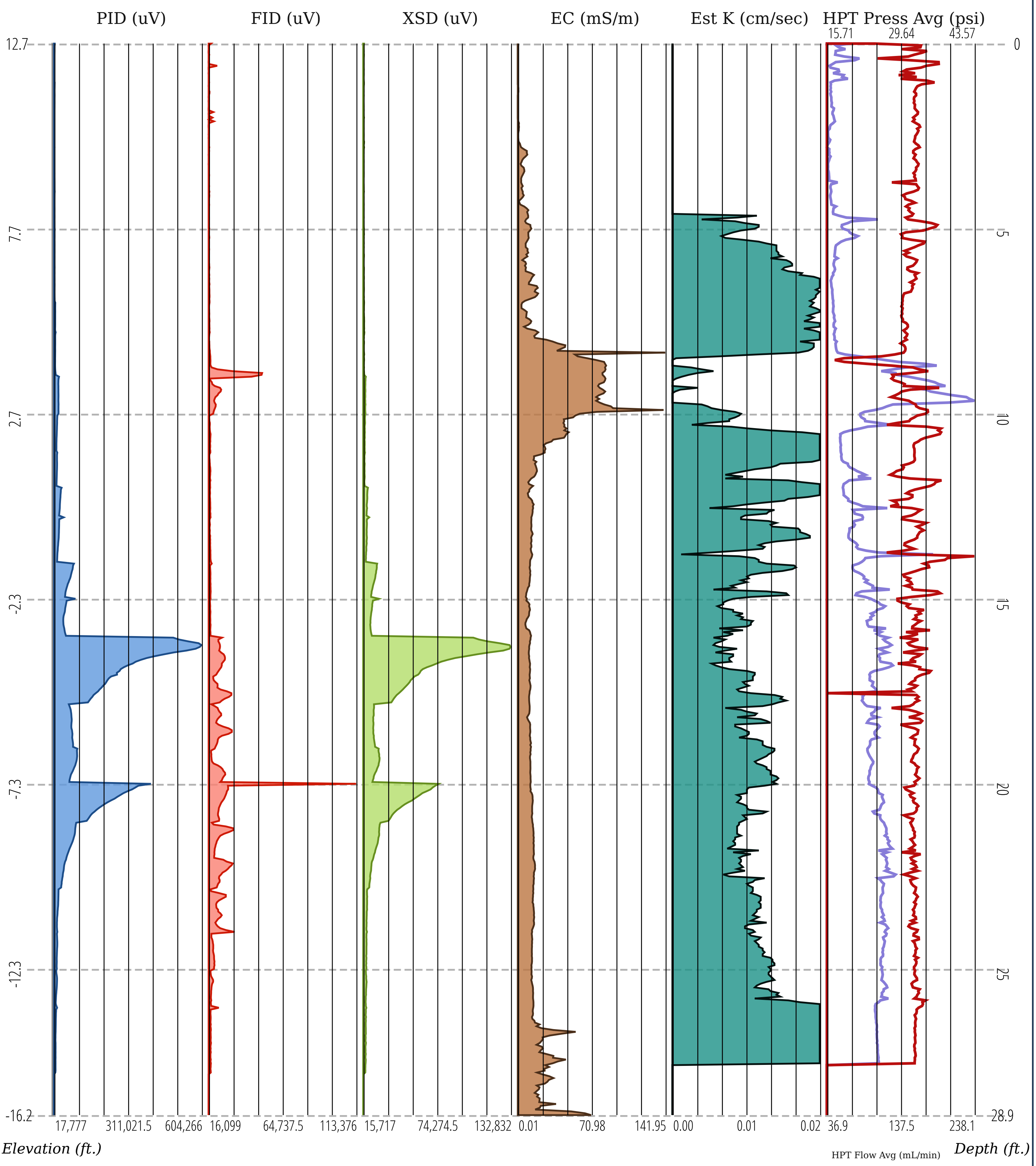
Lat/Lng: 41.7660,-71.4118

Elevation Range: 12.6 - (-16.3) ft.

Depth Range: 0 - 28.9 ft.

Former Ciba-Geigy - Cranston

XMIP-08 *MHP INDIVIDUAL*



X Scale: individual

Y Scale: individual

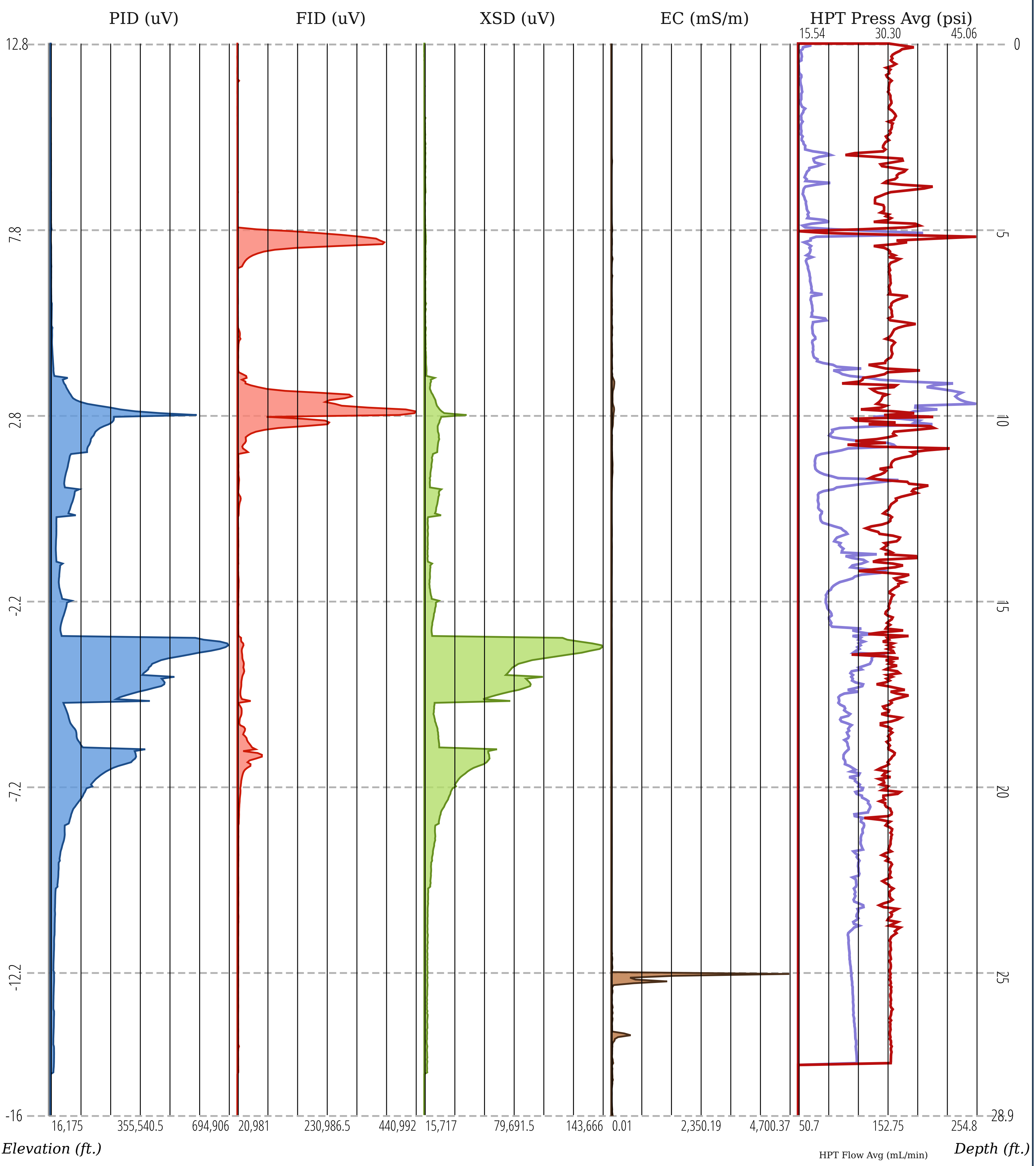
Lat/Lng: 41.7661,-71.4118

Elevation Range: 12.7 - (-16.2) ft.

Depth Range: 0 - 28.9 ft.

Former Ciba-Geigy - Cranston

XMIP-09 *MHP INDIVIDUAL*

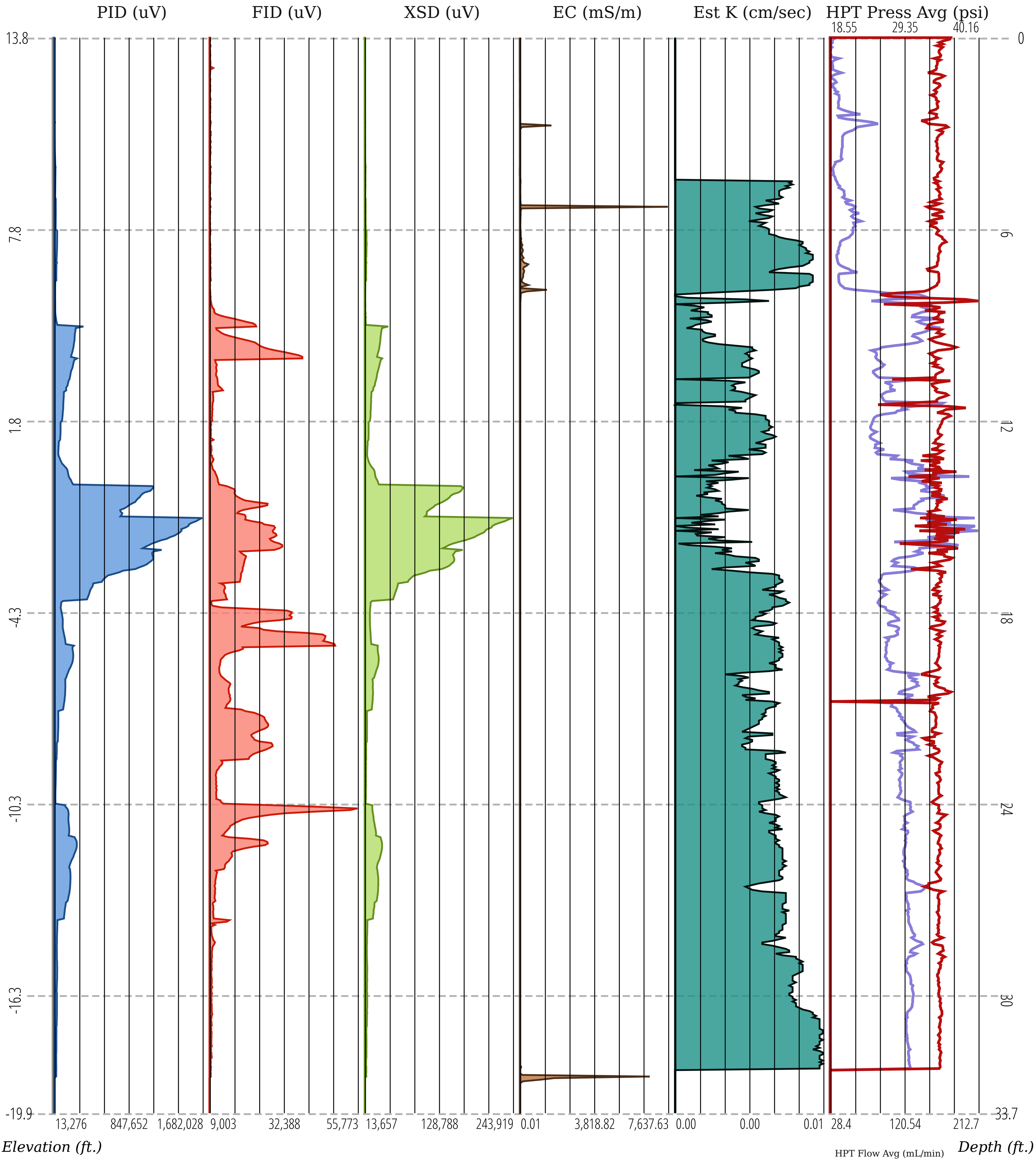


X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7661,-71.4118	12.8 - (-16) ft.

Depth Range:
0 - 28.9 ft.

Former Ciba-Geigy - Cranston

XMIP-10 *MHP INDIVIDUAL*

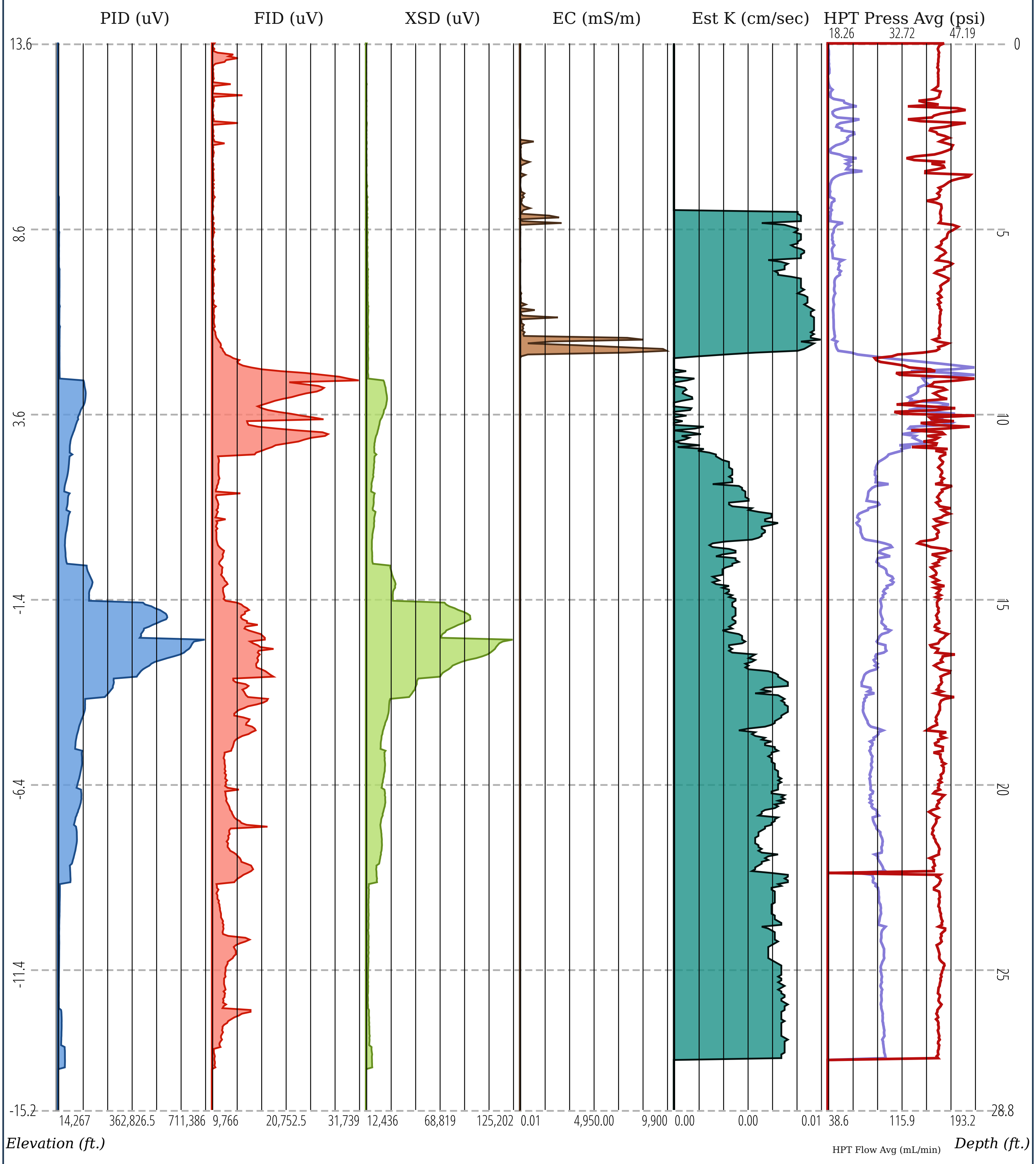


X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7661,-71.4119	13.8 - (-19.9) ft.

Depth Range:
0 - 33.7 ft.

Former Ciba-Geigy - Cranston

XMIP-11 *MHP INDIVIDUAL*

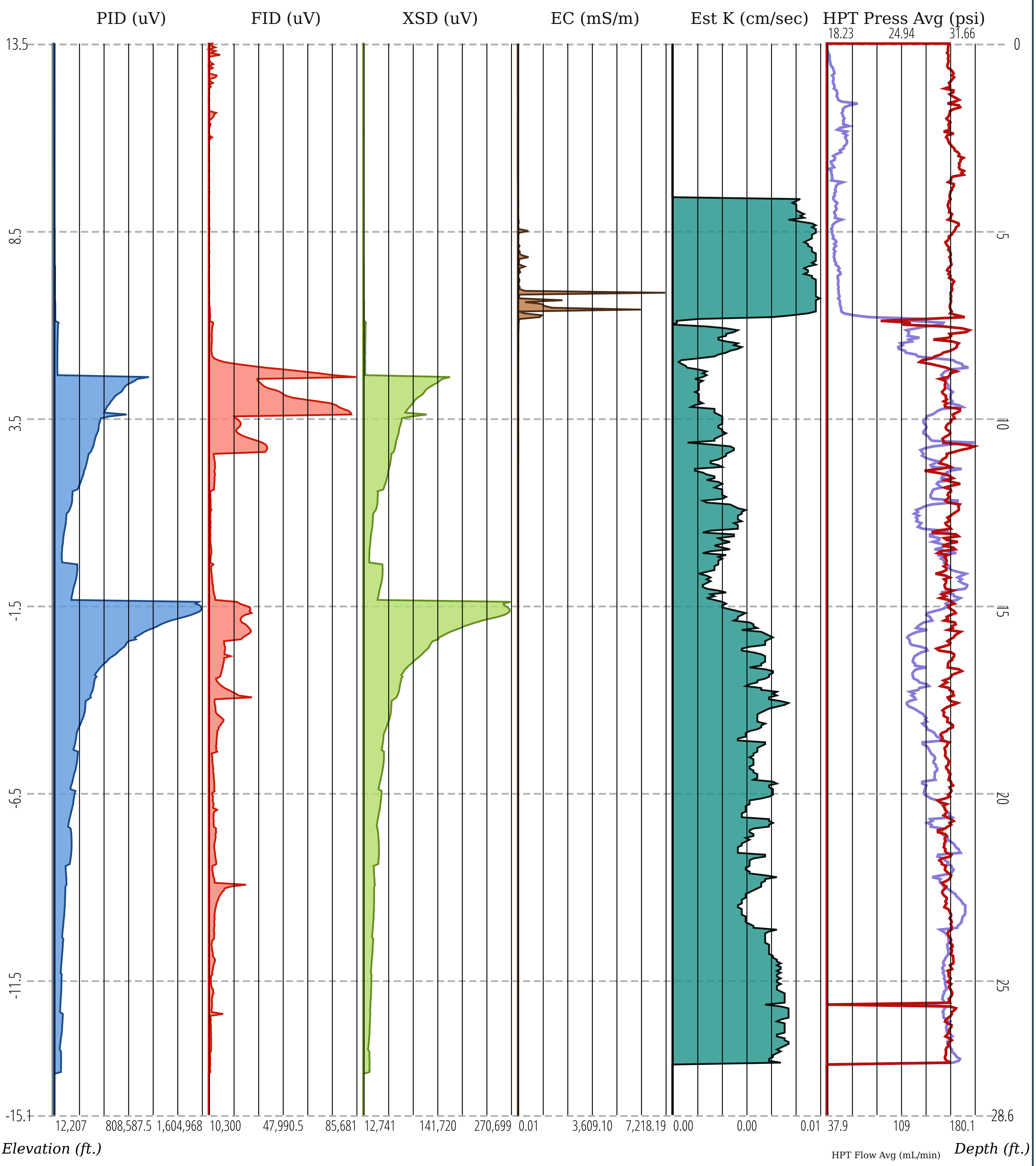


X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7661,-71.4119	13.6 - (-15.2) ft.

Depth Range:
0 - 28.8 ft.

Former Ciba-Geigy - Cranston

XMIP-12 *MHP INDIVIDUAL*

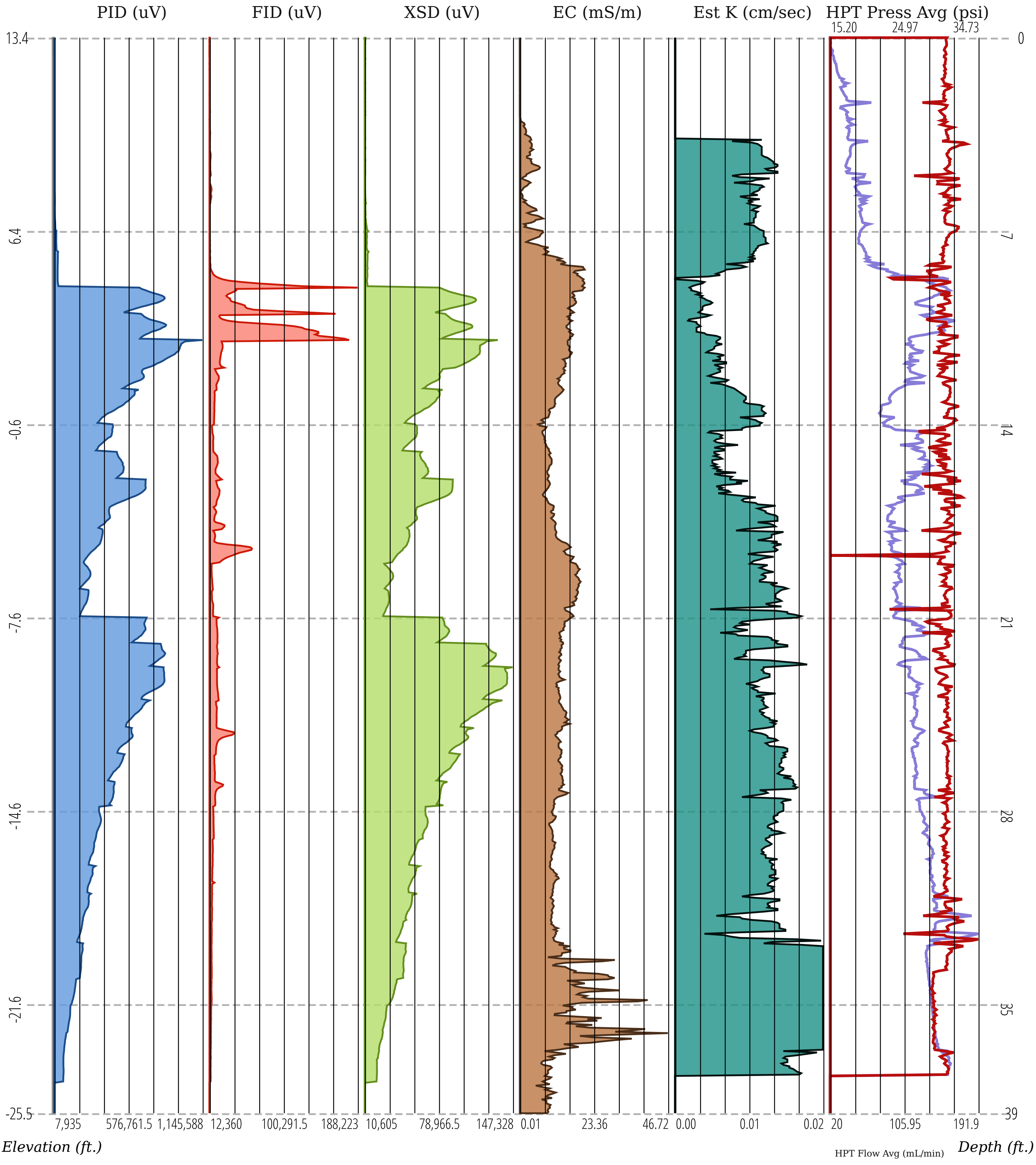


X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7661,-71.4119	13.5 - (-15.1) ft.

Depth Range:
0 - 28.6 ft.

Former Ciba-Geigy - Cranston

XMIP-13 *MHP INDIVIDUAL*

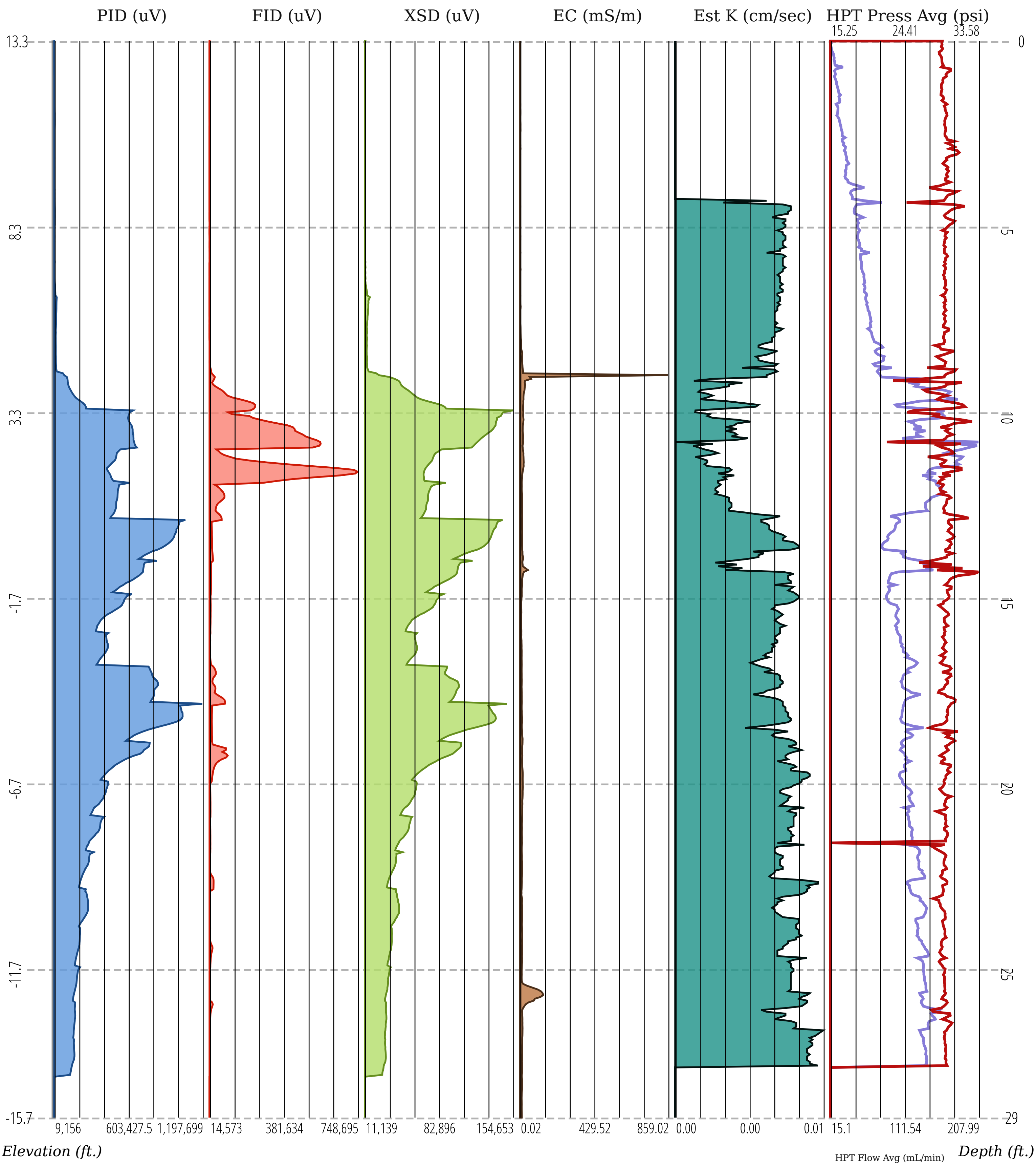


X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7660,-71.4119	13.4 - (-25.5) ft.

Depth Range:
0 - 39.0 ft.

Former Ciba-Geigy - Cranston

XMIP-14 *MHP INDIVIDUAL*



X Scale:
individual

Y Scale:
individual

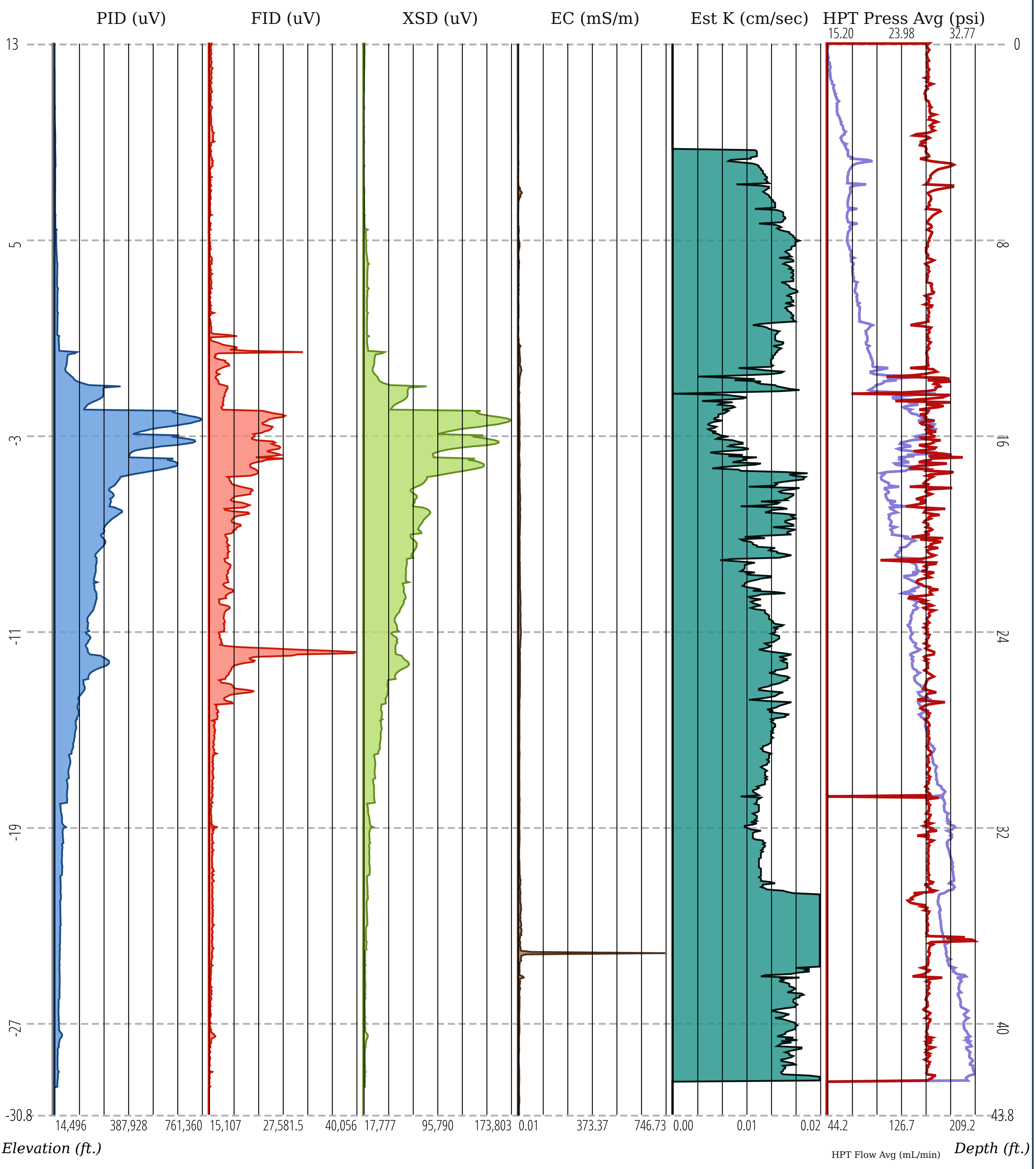
Lat/Lng:
41.7660,-71.4119

Elevation Range:
13.3 - (-15.7) ft.

Depth Range:
0 - 29.0 ft.

Former Ciba-Geigy - Cranston

XMIP-15 *MHP INDIVIDUAL*

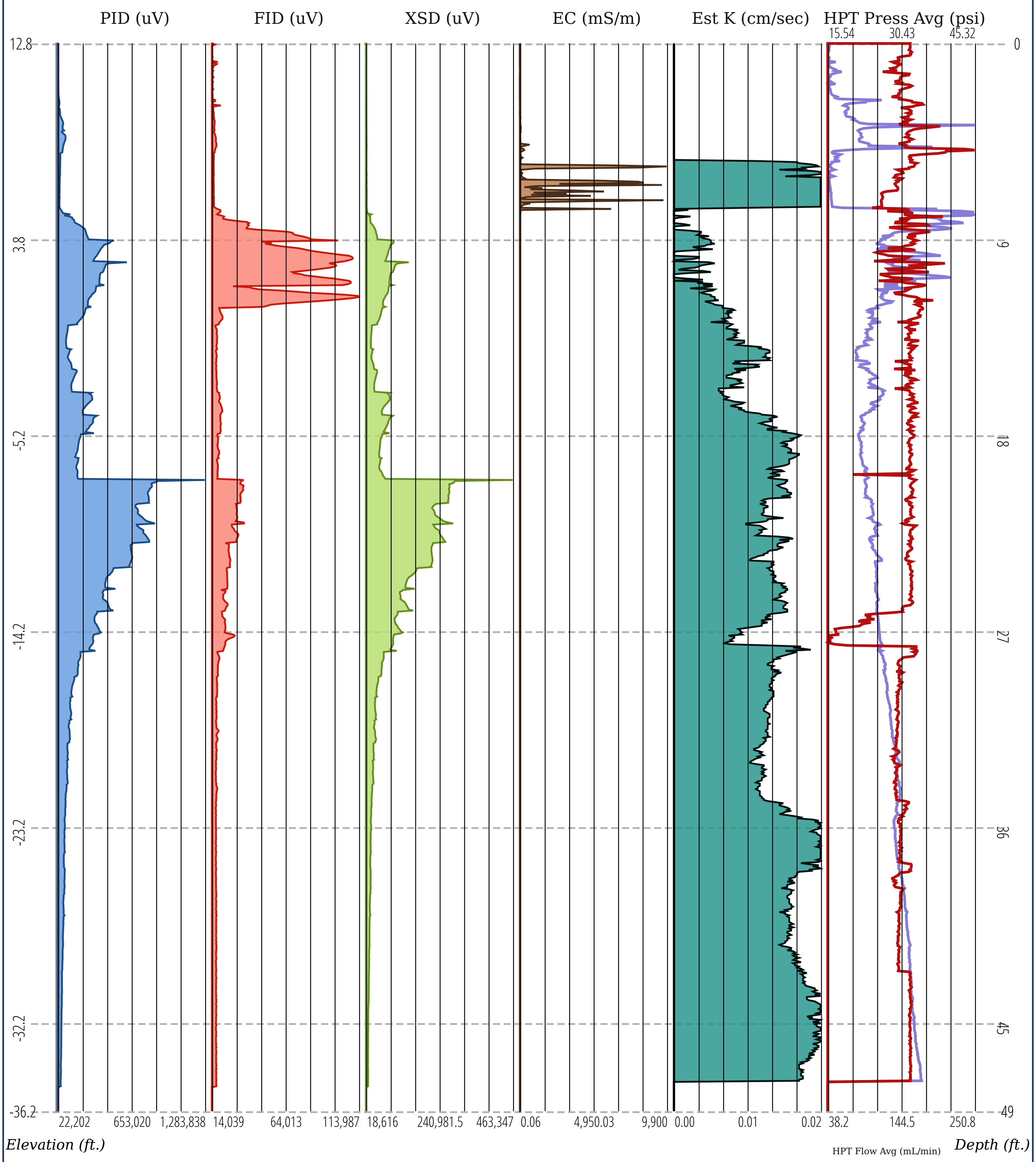


X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	41.7660,-71.4120	13 - (-30.8) ft.

Depth Range:
0 - 43.8 ft.

Former Ciba-Geigy - Cranston

XMIP-16 *MHP INDIVIDUAL*



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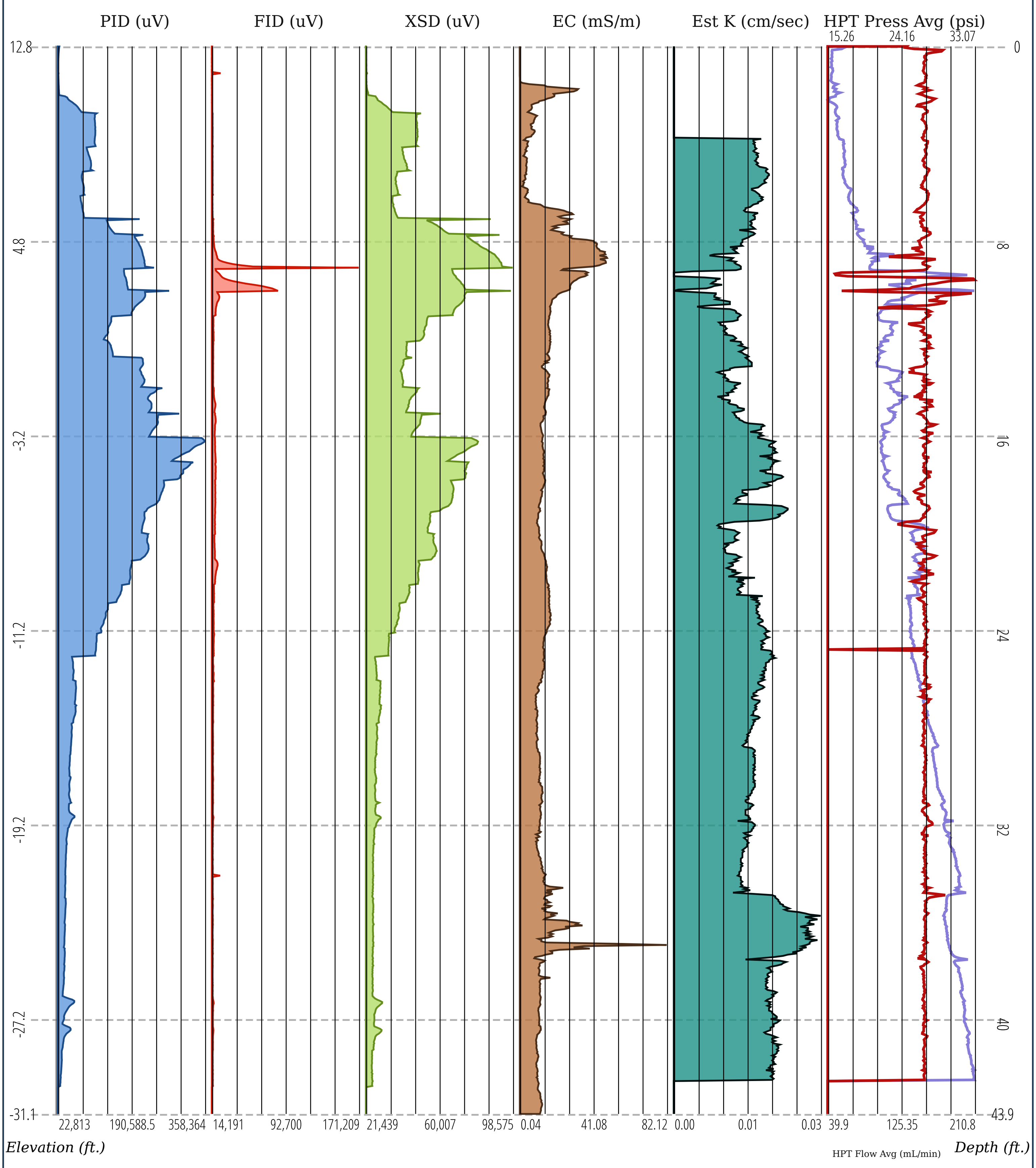
X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7660,-71.4120	12.8 - (-36.2) ft.

Depth Range:
0 - 49.0 ft.

Former Ciba-Geigy - Cranston

XMIP-17 *MHP INDIVIDUAL*



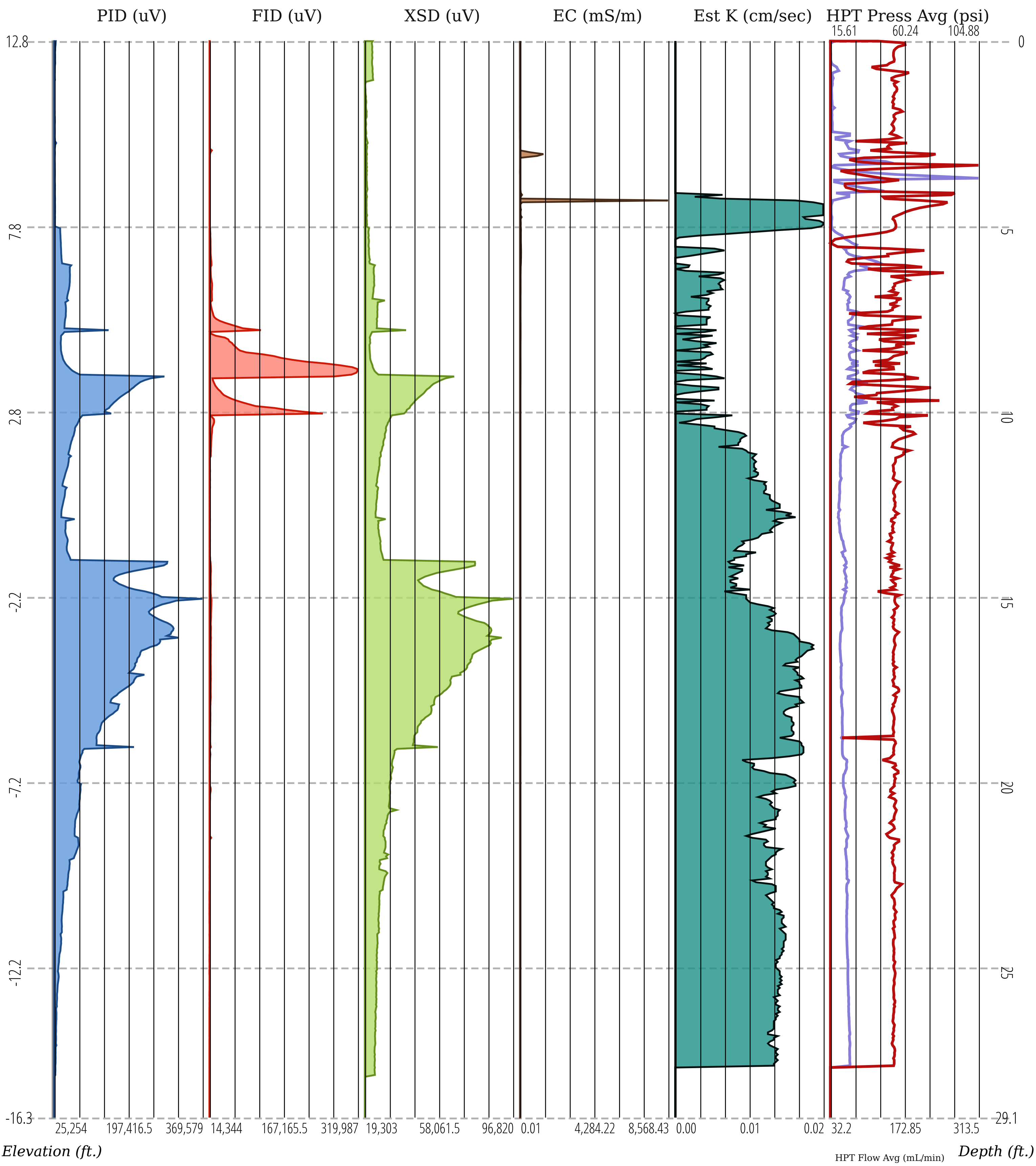
X Scale:
individual

Y Scale:
individual

Lat/Lng:
41.7659,-71.4120

Elevation Range:
12.8 - (-31.1) ft.

Depth Range:
0 - 43.9 ft.



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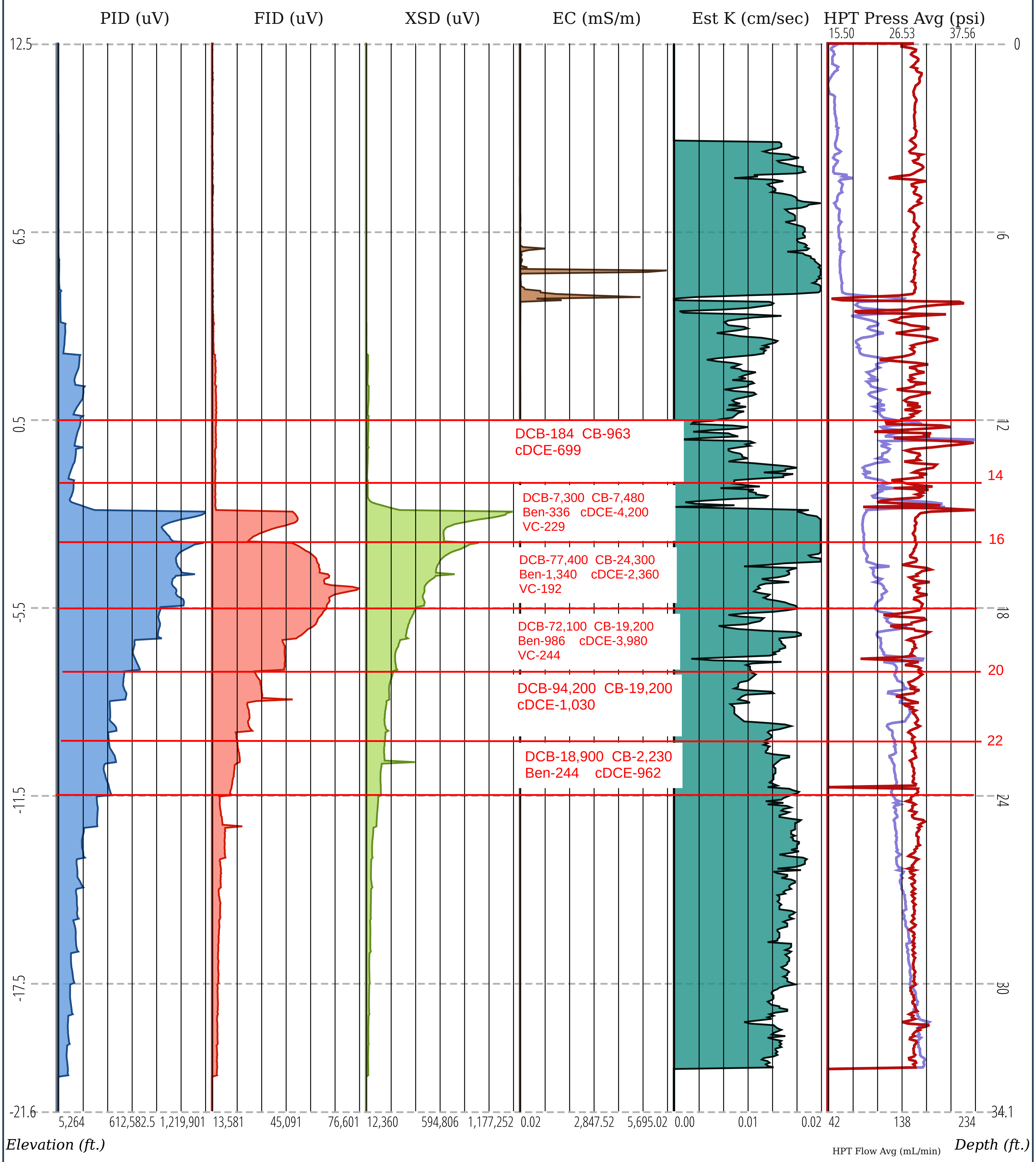
X Scale:	**Y Scale:**	**Lat/Lng:**	**Elevation Range:**
individual	individual	41.7659,-71.4120	12.8 - (-16.3) ft.

Depth Range:
0 - 29.1 ft.

Former Ciba-Geigy - Cranston

XMIP-19 *MHP INDIVIDUAL*

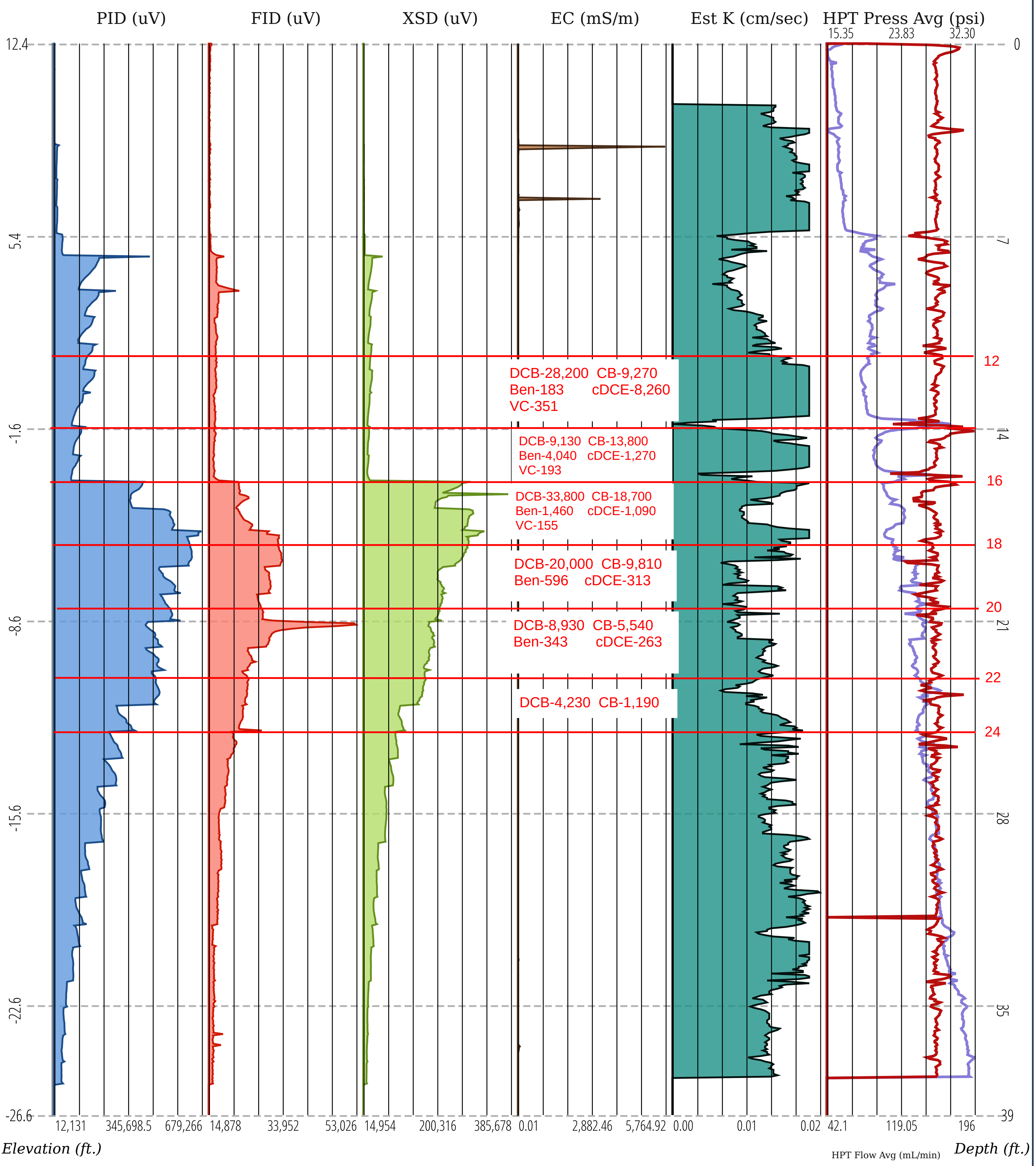


X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	41.7660,-71.4119	12.5 - (-21.6) ft.

Depth Range:
0 - 34.1 ft.

Former Ciba-Geigy - Cranston

XMIP-20 *MHP INDIVIDUAL*



DCB-28,200 CB-9,270
Ben-183 cDCE-8,260
VC-351

DCB-9,130 CB-13,800
Ben-4,040 cDCE-1,270
VC-193

DCB-33,800 CB-18,700
Ben-1,460 cDCE-1,090
VC-155

DCB-20,000 CB-9,810
Ben-596 cDCE-313

DCB-8,930 CB-5,540
Ben-343 cDCE-263

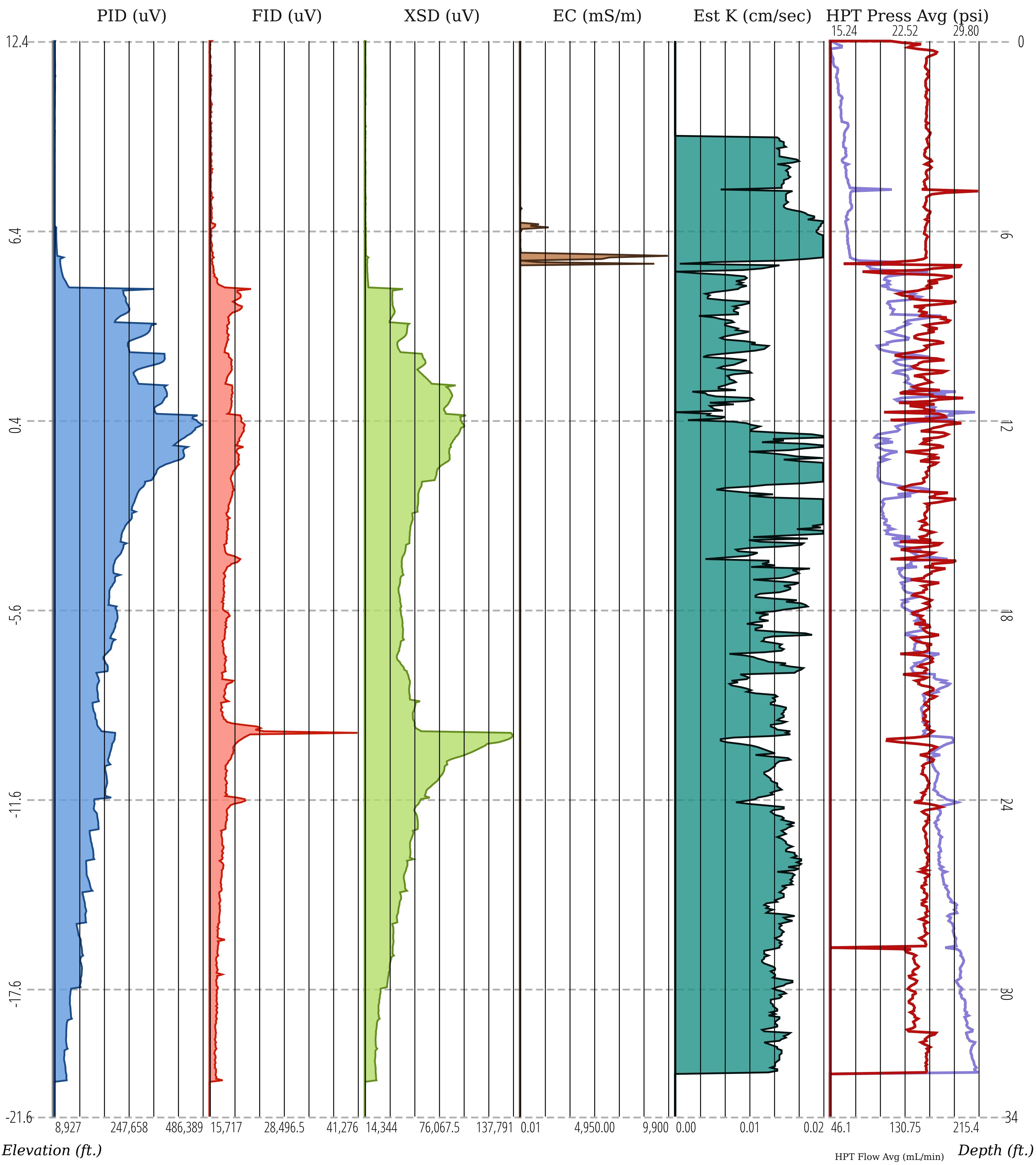
DCB-4,230 CB-1,190

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	41.7659,-71.4119	12.4 - (-26.6) ft.

Depth Range:
0 - 39.0 ft.

Former Ciba-Geigy - Cranston

XMIP-21 *MHP INDIVIDUAL*



X Scale:
individual

Y Scale:
individual

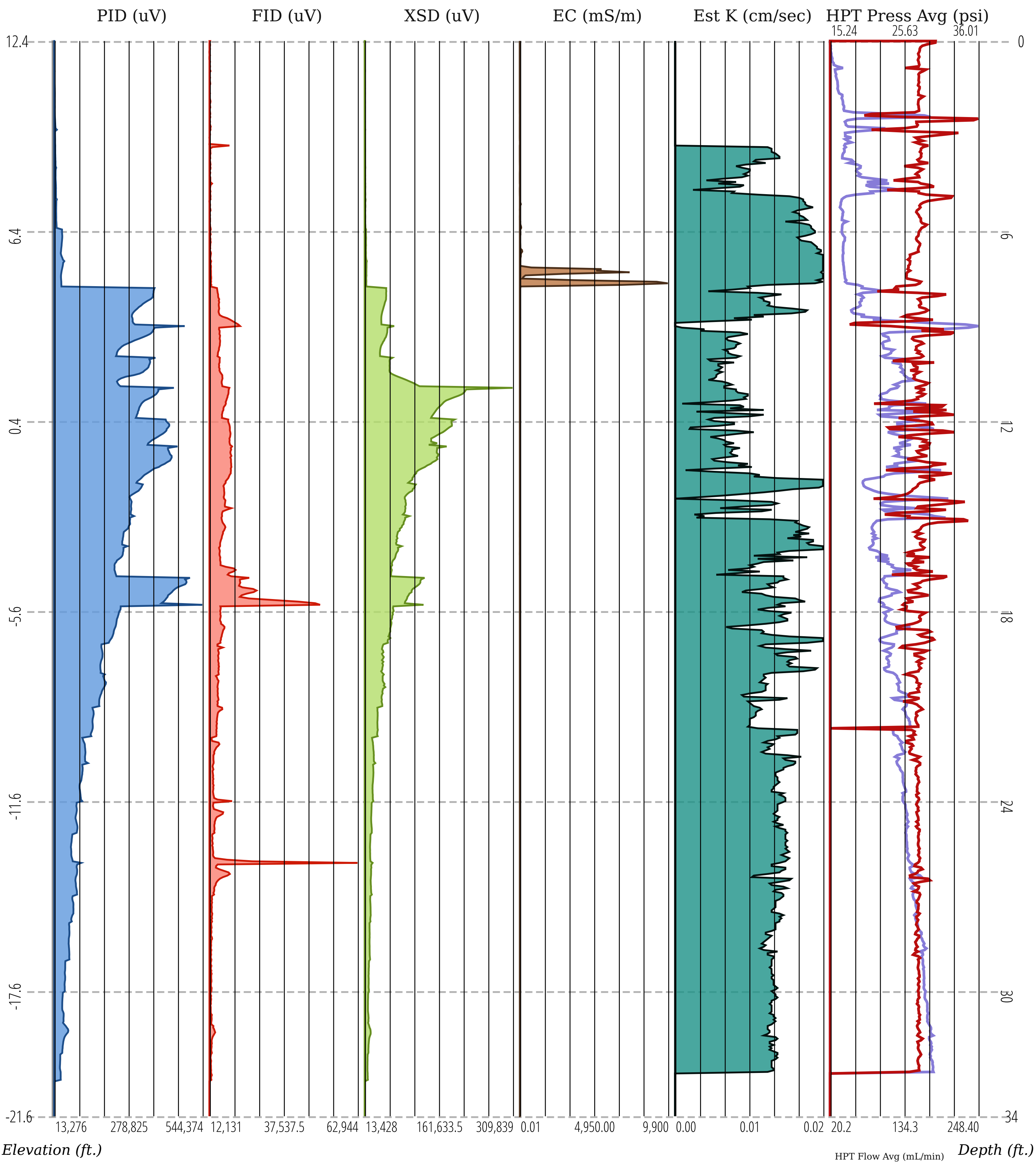
Lat/Lng:
41.7660,-71.4119

Elevation Range:
12.4 - (-21.6) ft.

Depth Range:
0 - 34.0 ft.

Former Ciba-Geigy - Cranston

XMIP-22 *MHP INDIVIDUAL*



X Scale:
individual

Y Scale:
individual

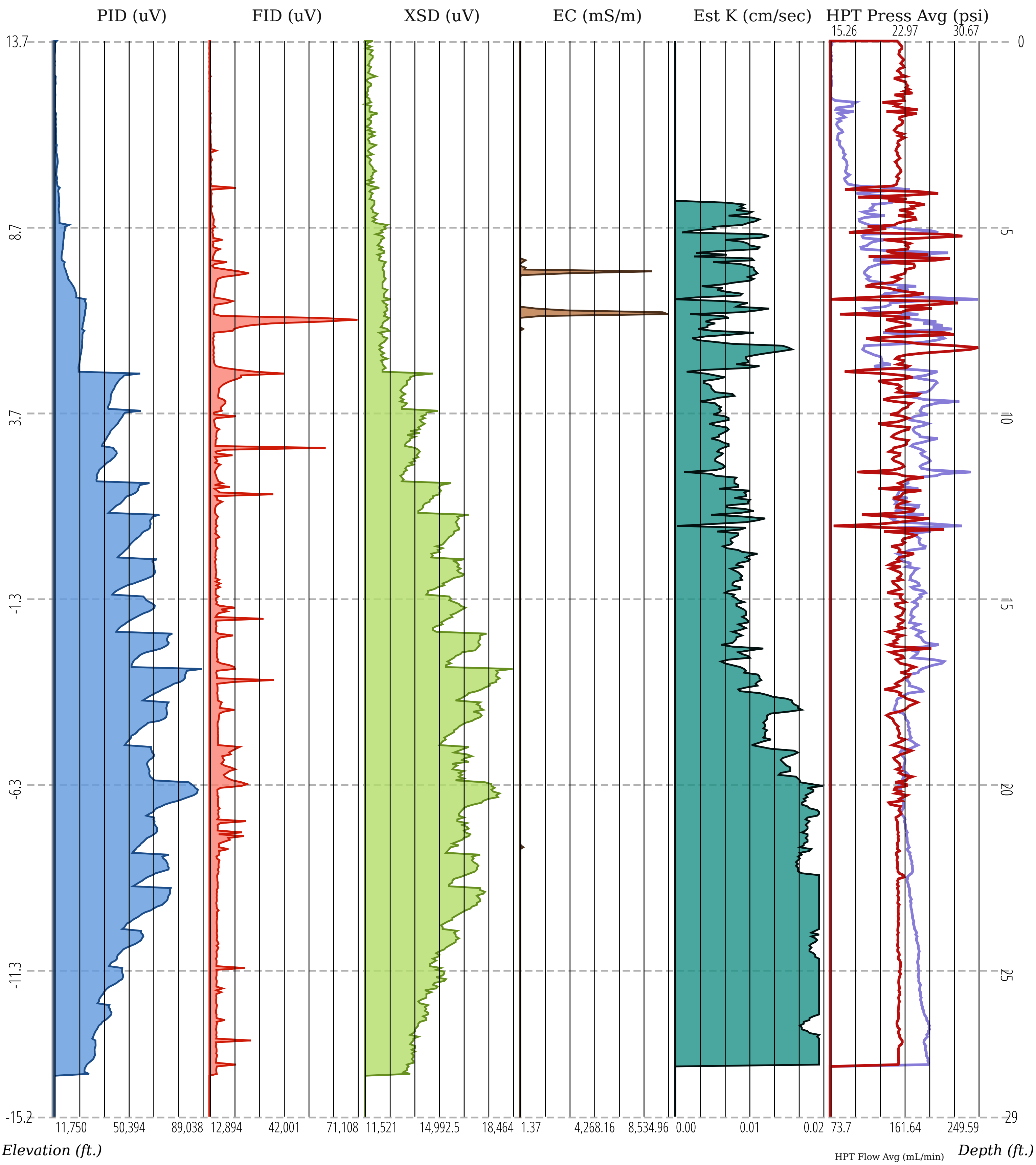
Lat/Lng:
41.7660,-71.4119

Elevation Range:
12.4 - (-21.6) ft.

Depth Range:
0 - 34.0 ft.

Former Ciba-Geigy - Cranston

XMIP-23 *MHP INDIVIDUAL*



X Scale:
individual

Y Scale:
individual

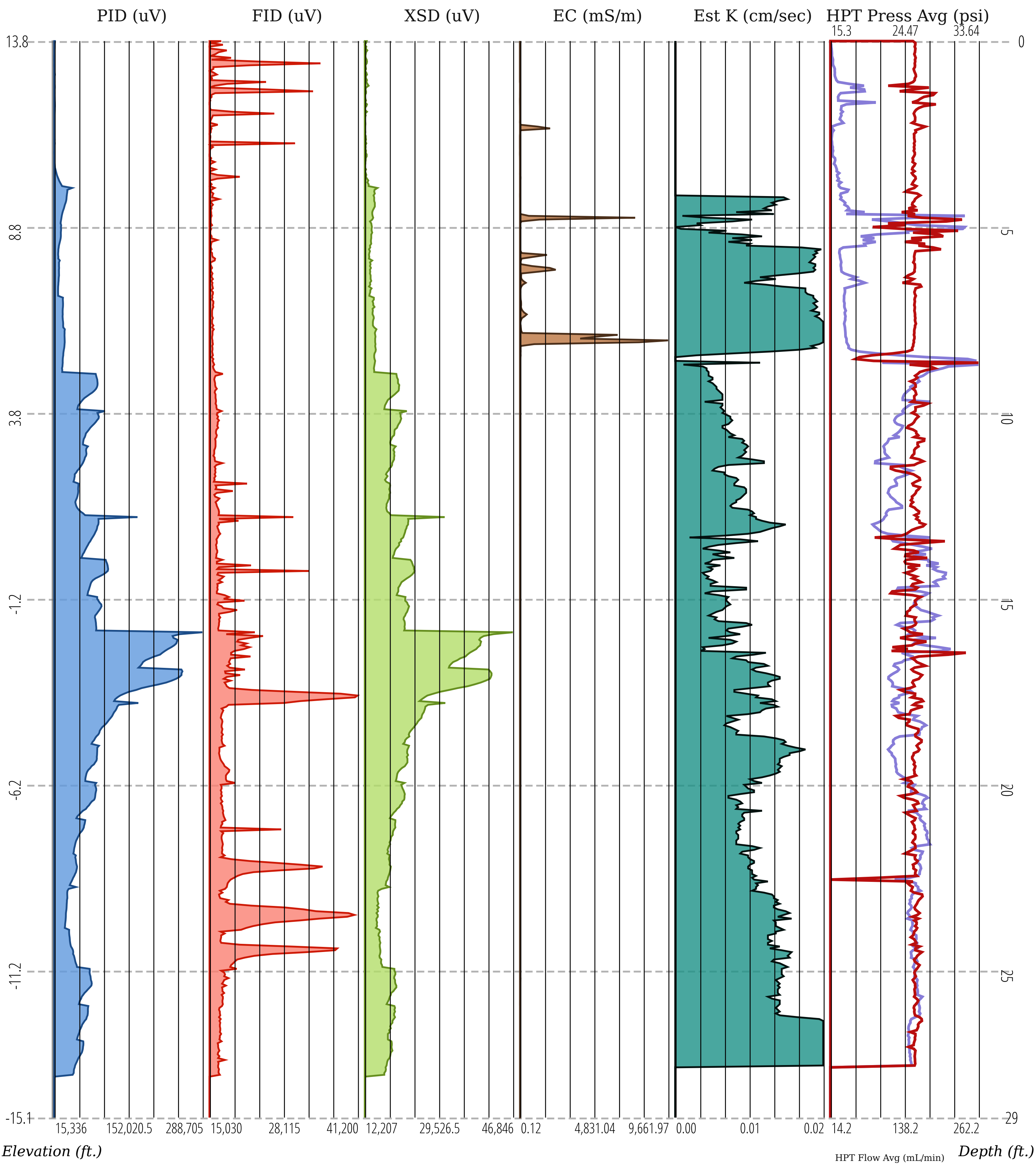
Lat/Lng:
41.7661,-71.4118

Elevation Range:
13.7 - (-15.2) ft.

Depth Range:
0 - 29.0 ft.

Former Ciba-Geigy - Cranston

XMIP-24 *MHP INDIVIDUAL*



X Scale: individual

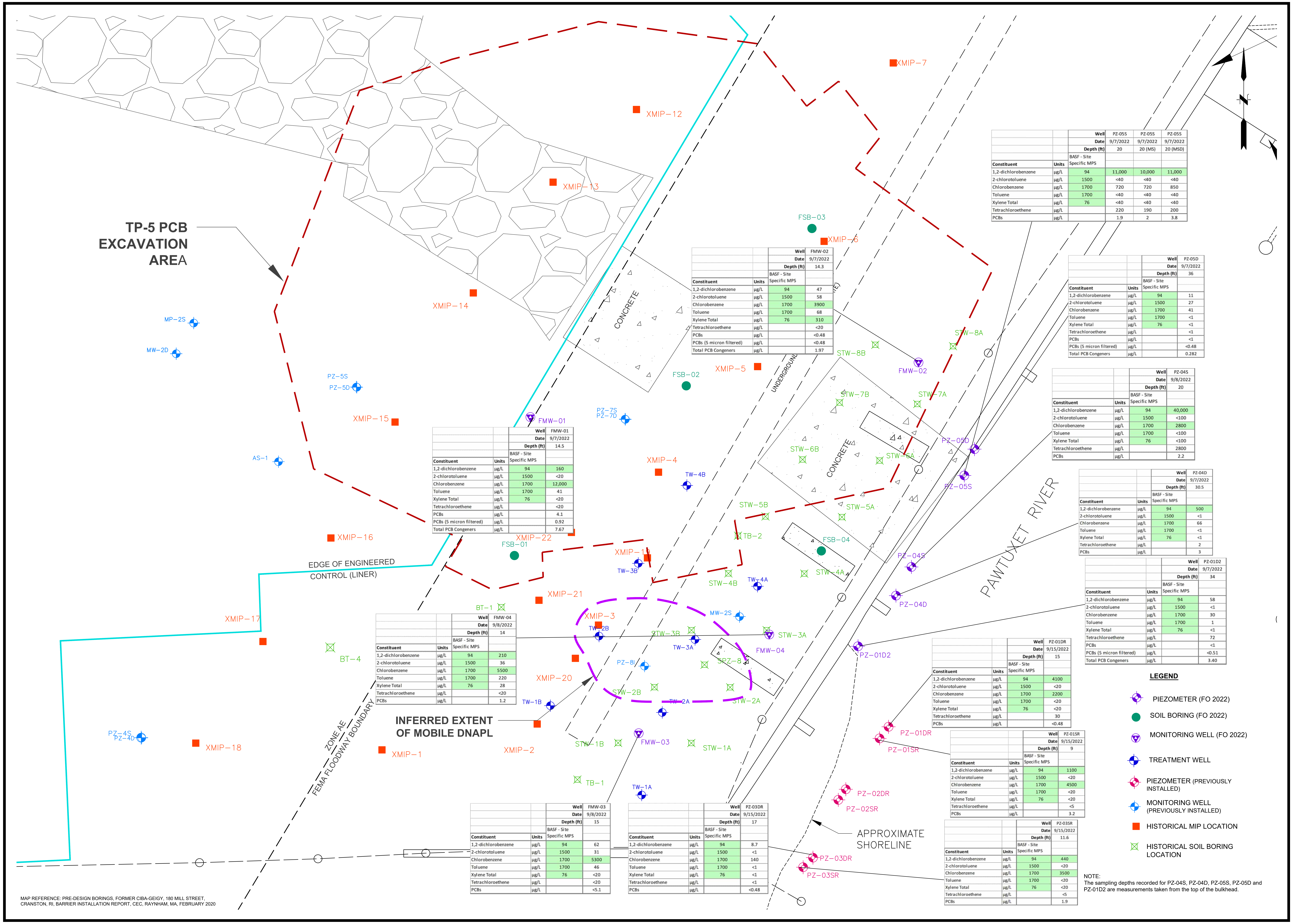
Y Scale: individual

Lat/Lng: 41.7661,-71.4118

Elevation Range: 13.8 - (-15.1) ft.

Depth Range: 0 - 29.0 ft.

Appendix A-3 Supplemental Investigation Report (Fuss & O’Neill, 2023)



		Well	PZ-05S	PZ-05S	PZ-05S
		Date	9/7/2022	9/7/2022	9/7/2022
		Depth (ft)	20	20 (MS)	20 (MSD)
Constituent	Units	BASF - Site Specific MPS			
1,2-dichlorobenzene	µg/L	94	11,000	10,000	11,000
2-chlorotoluene	µg/L	1500	<40	<40	<40
Chlorobenzene	µg/L	1700	720	720	850
Toluene	µg/L	1700	<40	<40	<40
Xylene Total	µg/L	76	<40	<40	<40
Tetrachloroethene	µg/L		220	190	200
PCBs	µg/L		1.9	2	3.8

		Well	FMW-02
		Date	9/7/2022
		Depth (ft)	14.3
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	47
2-chlorotoluene	µg/L	1500	58
Chlorobenzene	µg/L	1700	3900
Toluene	µg/L	1700	68
Xylene Total	µg/L	76	310
Tetrachloroethene	µg/L		<20
PCBs	µg/L		<0.48
PCBs (5 micron filtered)	µg/L		<0.48
Total PCB Congeners	µg/L		1.97

		Well	PZ-05D
		Date	9/7/2022
		Depth (ft)	36
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	11
2-chlorotoluene	µg/L	1500	27
Chlorobenzene	µg/L	1700	41
Toluene	µg/L	1700	<1
Xylene Total	µg/L	76	<1
Tetrachloroethene	µg/L		<1
PCBs	µg/L		<1
PCBs (5 micron filtered)	µg/L		<0.48
Total PCB Congeners	µg/L		0.282

		Well	PZ-04S
		Date	9/8/2022
		Depth (ft)	20
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	40,000
2-chlorotoluene	µg/L	1500	<100
Chlorobenzene	µg/L	1700	2800
Toluene	µg/L	1700	<100
Xylene Total	µg/L	76	<100
Tetrachloroethene	µg/L		2800
PCBs	µg/L		2.2

		Well	FMW-01
		Date	9/7/2022
		Depth (ft)	14.5
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	160
2-chlorotoluene	µg/L	1500	<20
Chlorobenzene	µg/L	1700	12,000
Toluene	µg/L	1700	41
Xylene Total	µg/L	76	<20
Tetrachloroethene	µg/L		<20
PCBs	µg/L		4.1
PCBs (5 micron filtered)	µg/L		0.92
Total PCB Congeners	µg/L		7.67

		Well	PZ-04D
		Date	9/7/2022
		Depth (ft)	30.5
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	500
2-chlorotoluene	µg/L	1500	<1
Chlorobenzene	µg/L	1700	66
Toluene	µg/L	1700	<1
Xylene Total	µg/L	76	<1
Tetrachloroethene	µg/L		2
PCBs	µg/L		3

		Well	PZ-01D2
		Date	9/7/2022
		Depth (ft)	34
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	58
2-chlorotoluene	µg/L	1500	<1
Chlorobenzene	µg/L	1700	30
Toluene	µg/L	1700	1
Xylene Total	µg/L	76	<1
Tetrachloroethene	µg/L		72
PCBs	µg/L		<1
PCBs (5 micron filtered)	µg/L		<0.51
Total PCB Congeners	µg/L		3.40

		Well	FMW-04
		Date	9/8/2022
		Depth (ft)	14
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	210
2-chlorotoluene	µg/L	1500	36
Chlorobenzene	µg/L	1700	5500
Toluene	µg/L	1700	220
Xylene Total	µg/L	76	28
Tetrachloroethene	µg/L		<20
PCBs	µg/L		1.2

		Well	PZ-01DR
		Date	9/15/2022
		Depth (ft)	15
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	4100
2-chlorotoluene	µg/L	1500	<20
Chlorobenzene	µg/L	1700	2200
Toluene	µg/L	1700	<20
Xylene Total	µg/L	76	<20
Tetrachloroethene	µg/L		30
PCBs	µg/L		<0.48

		Well	PZ-01SR
		Date	9/15/2022
		Depth (ft)	9
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	1100
2-chlorotoluene	µg/L	1500	<20
Chlorobenzene	µg/L	1700	4500
Toluene	µg/L	1700	<20
Xylene Total	µg/L	76	<20
Tetrachloroethene	µg/L		<5
PCBs	µg/L		3.2

		Well	FMW-03
		Date	9/8/2022
		Depth (ft)	15
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	62
2-chlorotoluene	µg/L	1500	31
Chlorobenzene	µg/L	1700	5300
Toluene	µg/L	1700	46
Xylene Total	µg/L	76	<20
Tetrachloroethene	µg/L		<20
PCBs	µg/L		<5.1

		Well	PZ-03DR
		Date	9/15/2022
		Depth (ft)	17
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	8.7
2-chlorotoluene	µg/L	1500	<1
Chlorobenzene	µg/L	1700	140
Toluene	µg/L	1700	<1
Xylene Total	µg/L	76	<1
Tetrachloroethene	µg/L		<1
PCBs	µg/L		<0.48

		Well	PZ-03SR
		Date	9/15/2022
		Depth (ft)	11.6
Constituent	Units	BASF - Site Specific MPS	
1,2-dichlorobenzene	µg/L	94	440
2-chlorotoluene	µg/L	1500	<20
Chlorobenzene	µg/L	1700	3500
Toluene	µg/L	1700	<20
Xylene Total	µg/L	76	<20
Tetrachloroethene	µg/L		<5
PCBs	µg/L		1.9

LEGEND

- PIEZOMETER (FO 2022)
- SOIL BORING (FO 2022)
- MONITORING WELL (FO 2022)
- TREATMENT WELL
- PIEZOMETER (PREVIOUSLY INSTALLED)
- MONITORING WELL (PREVIOUSLY INSTALLED)
- HISTORICAL MIP LOCATION
- HISTORICAL SOIL BORING LOCATION

NOTE:
The sampling depths recorded for PZ-04S, PZ-04D, PZ-05S, PZ-05D and PZ-01D2 are measurements taken from the top of the bulkhead.

MAP REFERENCE: PRE-DESIGN BORINGS, FORMER CIBA-GEIGY, 180 MILL STREET, CRANSTON, RI, BARRIER INSTALLATION REPORT, CEC, RAYNHAM, MA, FEBRUARY 2020

File: J:\DWG\P2020\1130\A10\Environmental\Plan\Figures Set 1-3-2023\20201130A10_SAM01_groundwater data PCBS VOCs rev 1-2023.dwg Layout: LAYOUT1-24X36-L (R-TBLK) Plotted: 2022-12-27 3:48 PM Saved: 2022-12-27 3:33 PM User: SRochelt
PC3: AUTOCAD PDF (HIGH QUALITY PRINT).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE:
HORZ.: 1" = 3'
VERT.:
DATUM:
HORZ.:
VERT.:
GRAPHIC SCALE
3 1.5 0 3

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PCBAND VOC (MPS VOCs & PCE) CONCENTRATIONS IN GROUNDWATER

180 MILL STREET

CRANSTON CONNECTICUT

PROJ. No.: 20201130.A10
DATE: JANUARY 2023

FIGURE 5

Table 3
Summary of Water Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			FMW-01	FMW-01	FMW-01	FMW-02	FMW-02	FMW-02	FMW-03	FMW-04
Sampled_Date_Time			9/7/2022	9/7/2022	9/8/2022	9/7/2022	9/7/2022	9/8/2022	9/8/2022	9/8/2022
Field_ID			1650220907-02	1650220907-02F	1650220908-17	1650220907-03	1650220907-03F	1650220908-18	1650220908-13	1650220908-11
Sample_Depth_Avg			14.5	14.5	15	14.3	14.3	15	15	14
Sample_Type			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards								
DissGasses_Total										
Methane	µg/L		**6270**	-	-	**8560**	-	-	-	-
DissOxygen_Dissolved										
Oxygen (Filtered)	mg/L		**0.73**	-	-	**0.36**	-	-	-	-
Field										
Depth to bottom of well	feet		15.67	-	17.61	15.82	-	16	16.15	15.75
DO (Field)	mg/L		0.69	-	0.4	0.19	-	0.16	0.45	0.32
ORP	mV		-120.9	-	-90.5	-286.4	-	-284.3	-243.4	-244.1
Turb (Field)	NTU		4.71	-	2.92	3.65	-	3.15	3.49	9.43
Temp (Field)	oC		17.8	-	19.7	18.5	-	19.5	18.3	19.3
Specific Conductivity (uS/cm) (Field)	uS/cm		585	-	610	736	-	710	637	605
pH (Field)	SU		6.43	-	6.43	6.72	-	6.62	6.73	6.82
Inorganics_Total										
Nitrogen Kjeldahl, total (as N)	mg/L		**3.15**	-	-	**11**	-	-	-	-
Orthophosphate	mg/L		<0.01U	-	-	**0.03**	-	-	-	-
TOC	mg/L		**13.4**	-	-	**27.5**	-	-	-	-
Total Dissolved Solids	mg/L		**340**	-	-	**410**	-	-	-	-
Ammonia	mg/L		**2.3**	-	-	**7.56**	-	-	-	-
Alkalinity	mg/L		**232**	-	-	**266**	-	-	-	-
Chloride	mg/L		**35.1**	-	-	**41.1**	-	-	-	-
Nitrate (as N)	mg/L		**0.06**	-	-	<0.02U	-	-	-	-
Sulphate	mg/L		**9.6**	-	-	**25.2**	-	-	-	-
Sulphide	mg/L		**0.48**	-	-	**4.63**	-	-	-	-
Metals_Dissolved										
Iron (Filtered)	mg/L		**19.1**	-	-	**2.14**	-	-	-	-
Manganese (Filtered)	mg/L		**3.09**	-	-	**0.424**	-	-	-	-
Metals_Total										
Iron	mg/L		**19.7**	-	-	**5.75**	-	-	-	-
Manganese	mg/L		**3.21**	-	-	**0.418**	-	-	-	-
PCBs_5-Micron-Filter										
Arochlor 1248 (Filtered)	µg/L		-	**0.92**	-	-	<0.48U	-	-	-
PCBs_Total										
Arochlor 1016	µg/L		<0.49U	-	-	**0.85**	-	-	<5.1U	<0.53U
Arochlor 1248	µg/L		**4.1**	-	-	<0.48U	-	-	<5.1U	**1.2**
pH_Total										
pH	su		7.36	-	-	7.6	-	-	-	-
Redox_Total										
Redox potential	mV		0.8	-	-	46	-	-	-	-
TPH_Total										
TPH	mg/L		**0.52**	-	<0.47U	<0.63U	-	**0.89**	-	-
Turbidity_Total										
Turbidity_	NTU		116	-	-	104	-	-	-	-
VOCs_Total										
M/P-xylenes	µg/L	***76***	<20U	-	-	***190***	-	-	<20U	**28**
1,1-dichloroethane	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
1,2,4-trichlorobenzene	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
1,2,4-trimethylbenzene	µg/L		<20U	-	-	**260**	-	-	<20U	**24**
1,2-dichlorobenzene	µg/L	***94***	**160**	-	-	**47**	-	-	**62**	**210**
1,2-dichloroethane	µg/L		<12U	-	-	<12U	-	-	<12U	<12U
1,3,5-trimethylbenzene	µg/L		<20U	-	-	**110**	-	-	<20U	<20U
1,3-dichlorobenzene	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
1,4-dichlorobenzene	µg/L		**51**	-	-	<20U	-	-	<20U	<20U
2-chlorotoluene	µg/L	***1500***	<20U	-	-	**58**	-	-	**31**	**36**
Benzene	µg/L		**670**	-	-	**270**	-	-	**81**	**67**
Bromomethane	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
Chlorobenzene	µg/L	***1700***	**12,000**	-	-	**3900**	-	-	**5300**	**5500**
Chloroethane	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
Chloroform	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
Chloromethane	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
cis-1,2-dichloroethene	µg/L		**410**	-	-	**4700**	-	-	**340**	**9800**
Dichloromethane	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
Naphthalene	µg/L		<20U	-	-	**68**	-	-	<20U	<20U
n-propylbenzene	µg/L		<20U	-	-	**23**	-	-	<20U	<20U
Trichloroethene	µg/L		<20U	-	-	<20U	-	-	<20U	**38**
Tetrachloroethene	µg/L		<20U	-	-	<20U	-	-	<20U	<20U
Toluene	µg/L	***1700***	**41**	-	-	**68**	-	-	**46**	**220**
Ethylbenzene	µg/L		<20U	-	-	**24**	-	-	<20U	<20U
trans-1,2-dichloroethene	µg/L		<20U	-	-	**67**	-	-	<20U	**66**
Vinyl chloride	µg/L		**210**	-	-	**1200**	-	-	**240**	**550**
Xylene (o)	µg/L	***76***	<20U	-	-	***120***	-	-	<20U	<20U
Xylene Total	µg/L	***76***	<20U	-	-	***310***	-	-	<20U	**28**

Notes:

Field_D = Field Duplicate

Trip_B -= Trip Blank

Units: ug=micrograms, mg=milligrams, L=liter

\- = not analyzed

< = constituent not detected at the specified laboratory reporting limit

Blank cell = no established criteria

Detected parameters for laboratory analyses (not field analyses) in bold.

Exceedances above criteria are highlighted.

Table 3
Summary of Water Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

		Location_Code	PZ-01SR	PZ-01DR	PZ-01D2	PZ-01D2	PZ-01D2	PZ-03SR	PZ-03DR	PZ-04S
		Sampled_Date_Time	9/15/2022	9/15/2022	9/7/2022	9/7/2022	9/8/2022	9/15/2022	9/15/2022	9/8/2022
		Field_ID	1650220915-06	1650220915-04	1650220907-04	1650220907-04F	1650220908-15	1650220915-07	1650220915-05	1650220908-10
		Sample_Depth_Avg	9	15	34	34	34	11.6	17	20
		Sample_Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards								
DissGasses_Total										
Methane	µg/L		-	-	**882**	-	-	-	-	-
DissOxygen_Dissolved										
Oxygen (Filtered)	mg/L		-	-	**2.42**	-	-	-	-	-
Field										
Depth to bottom of well	feet		10.78	16.71	35.4	-	35.55	11.76	17.42	22.39
DO (Field)	mg/L		0.28	7	0.49	-	0.63	1.97	2.16	0.48
ORP	mV		-120.9	-59.1	149.2	-	60.6	-79.1	-78.4	-64.2
Turb (Field)	NTU		32.18	259.67	30.3	-	27.6	389	75.7	12.83
Temp (Field)	oC		18.7	20	15.9	-	16.9	16.7	17.5	18.9
Specific Conductivity (uS/cm) (Field)	uS/cm		1314	2218	1582	-	1532	2177	1807	2394
pH (Field)	SU		6.46	6.36	4.75	-	4.67	6.36	6.4	6.12
Inorganics_Total										
Nitrogen Kjeldahl, total (as N)	mg/L		-	-	**0.87**	-	-	-	-	-
Orthophosphate	mg/L		-	-	<0.01U	-	-	-	-	-
TOC	mg/L		-	-	**2.2**	-	-	-	-	-
Total Dissolved Solids	mg/L		-	-	**1400**	-	-	-	-	-
Ammonia	mg/L		-	-	**0.66**	-	-	-	-	-
Alkalinity	mg/L		-	-	<20U	-	-	-	-	-
Chloride	mg/L		-	-	**94.5**	-	-	-	-	-
Nitrate (as N)	mg/L		-	-	<0.02U	-	-	-	-	-
Sulphate	mg/L		-	-	**727**	-	-	-	-	-
Sulphide	mg/L		-	-	<0.05U	-	-	-	-	-
Metals_Dissolved										
Iron (Filtered)	mg/L		-	-	**54.5**	-	-	-	-	-
Manganese (Filtered)	mg/L		-	-	**2.47**	-	-	-	-	-
Metals_Total										
Iron	mg/L		-	-	**59.2**	-	-	-	-	-
Manganese	mg/L		-	-	**2.73**	-	-	-	-	-
PCBs_5-Micron-Filter										
Arochlor 1248 (Filtered)	µg/L		-	-	-	<0.51U	-	-	-	-
PCBs_Total										
Arochlor 1016	µg/L		<0.48U	<0.48U	<1U	-	-	<0.51U	<0.48U	<0.47U
Arochlor 1248	µg/L		**3.2**	<0.48U	<1U	-	-	**1.9**	<0.48U	**2.2**
pH_Total										
pH	su		-	-	4.44	-	-	-	-	-
Redox_Total										
Redox potential	mV		-	-	222	-	-	-	-	-
TPH_Total										
TPH	mg/L		-	-	<0.5U	-	<0.49U	-	-	-
Turbidity_Total										
Turbidity_	NTU		-	-	36	-	-	-	-	-
VOCs_Total										
M/P-xylenes	µg/L	***76***	<20U	<20U	<1U	-	-	<20U	<1U	<100U
1,1-dichloroethane	µg/L		<20U	<20U	**1.1**	-	-	<20U	**1.2**	<100U
1,2,4-trichlorobenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
1,2,4-trimethylbenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
1,2-dichlorobenzene	µg/L	***94***	**1100**	**4100**	**58**	-	-	**440**	**8.7**	**40,000**
1,2-dichloroethane	µg/L		<5U	<5U	**0.7**	-	-	<5U	**0.61**	<60U
1,3,5-trimethylbenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
1,3-dichlorobenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
1,4-dichlorobenzene	µg/L		**24**	<20U	<1U	-	-	<20U	<1U	**120**
2-chlorotoluene	µg/L	***1500***	<20U	<20U	<1U	-	-	<20U	<1U	<100U
Benzene	µg/L		**390**	<5U	**3.2**	-	-	**270**	**6.4**	**85**
Bromomethane	µg/L		<20U	<20U	**1.1**	-	-	<20U	<1U	<100U
Chlorobenzene	µg/L	***1700***	**4500**	**2200**	**30**	-	-	**3500**	**140**	**2800**
Chloroethane	µg/L		<20U	<20U	**2.7**	-	-	<20U	**1.5**	<100U
Chloroform	µg/L		<20U	<20U	**1.9**	-	-	<20U	<1U	<100U
Chloromethane	µg/L		<20U	<20U	**13**	-	-	<20U	<1U	<100U
cis-1,2-dichloroethene	µg/L		**190**	**140**	**37**	-	-	**580**	**3.4**	**1800**
Dichloromethane	µg/L		<10U	<10U	**1.1!**	-	-	<10U	<1U	<100U
Naphthalene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
n-propylbenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
Trichloroethene	µg/L		<5U	**26**	**19**	-	-	<5U	<1U	**790**
Tetrachloroethene	µg/L		<5U	**30**	**72**	-	-	<5U	<1U	**2800**
Toluene	µg/L	***1700***	<20U	<20U	**1**	-	-	<20U	<1U	<100U
Ethylbenzene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
trans-1,2-dichloroethene	µg/L		<20U	<20U	<1U	-	-	<20U	<1U	<100U
Vinyl chloride	µg/L		**88**	**9.9**	**65**	-	-	**120**	**4.5**	**<100U**
Xylene (o)	µg/L	***76***	<20U	<20U	<1U	-	-	<20U	<1U	<100U
Xylene Total	µg/L	***76***	<20U	<20U	<1U	-	-	<20U	<1U	<100U

Notes:
Field_D = Field Duplicate
Trip_B -= Trip Blank
Units: ug=micrograms, mg=milligrams, L=liter
- = not analyzed
< = constituent not detected at the specified laboratory reporting limit
Blank cell = no established criteria
Detected parameters for laboratory analyses (not field analyses) in bold.
Exceedances above criteria are highlighted.

Table 3
Summary of Water Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			PZ-04D	PZ-05S	PZ-05S	PZ-05S	PZ-05D	PZ-05D	PZ-05D	PZ-08I
Sampled_Date_Time			9/7/2022	9/7/2022	9/7/2022	9/7/2022	9/7/2022	9/7/2022	9/8/2022	9/8/2022
Field_ID			1650220907-06	1650220907-07	1650220907-08	1650220907-09	1650220907-05	1650220907-05F	1650220908-16	1650220908-14
Sample_Depth_Avg			30.5	20	20	20	36	36	37.5	7.5
Sample_Type			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards								
DissGasses_Total										
Methane	µg/L		-	-	-	-	**281**	-	-	-
DissOxygen_Dissolved										
Oxygen (Filtered)	mg/L		-	-	-	-	**4.48**	-	-	-
Field										
Depth to bottom of well	feet		31.45	22.96	-	-	38.71	-	38.78	-
DO (Field)	mg/L		0.47	0.36	-	-	0.31	-	0.44	0.39
ORP	mV		-37.9	-103.3	-	-	-103.5	-	-135.4	8.5
Turb (Field)	NTU		18.9	16.25	-	-	19.12	-	9.43	159.92
Temp (Field)	oC		16.4	19.1	-	-	16.3	-	17.5	17
Specific Conductivity (uS/cm) (Field)	uS/cm		2403	665	-	-	604	-	573.7	588
pH (Field)	SU		5.95	6.61	-	-	6.46	-	6.49	6
Inorganics_Total										
Nitrogen Kjeldahl, total (as N)	mg/L		-	-	-	-	**0.26**	-	-	-
Orthophosphate	mg/L		-	-	-	-	<0.01U	-	-	-
TOC	mg/L		-	-	-	-	**1.1**	-	-	-
Total Dissolved Solids	mg/L		-	-	-	-	**390**	-	-	-
Ammonia	mg/L		-	-	-	-	**0.14**	-	-	-
Alkalinity	mg/L		-	-	-	-	**59**	-	-	-
Chloride	mg/L		-	-	-	-	**142**	-	-	-
Nitrate (as N)	mg/L		-	-	-	-	<0.02U	-	-	-
Sulphate	mg/L		-	-	-	-	**11.6**	-	-	-
Sulphide	mg/L		-	-	-	-	<0.05U	-	-	-
Metals_Dissolved										
Iron (Filtered)	mg/L		-	-	-	-	**1.51**	-	-	-
Manganese (Filtered)	mg/L		-	-	-	-	**3.87**	-	-	-
Metals_Total										
Iron	mg/L		-	-	-	-	**18.4**	-	-	-
Manganese	mg/L		-	-	-	-	**4.75**	-	-	-
PCBs_5-Micron-Filter										
Arochlor 1248 (Filtered)	µg/L		-	-	-	-	-	<0.48U	-	-
PCBs_Total										
Arochlor 1016	µg/L		<0.49U	<0.47U	<0.49U	<2.4U	<1U	-	-	<23U
Arochlor 1248	µg/L		**3**	**1.9**	**2**	**3.8**	<1U	-	-	**100**
pH_Total										
pH	su		-	-	-	-	6.88	-	-	-
Redox_Total										
Redox potential	mV		-	-	-	-	-6.6	-	-	-
TPH_Total										
TPH	mg/L		-	-	-	-	<0.47U	-	<0.49U	-
Turbidity_Total										
Turbidity_	NTU		-	-	-	-	42.5	-	-	-
VOCs_Total										
M/P-xylenes	µg/L	***76***	<1U	<40U	<40U	<40U	<1U	-	-	<100U
1,1-dichloroethane	µg/L		**1.1**	<40U	<40U	<40U	<1U	-	-	<100U
1,2,4-trichlorobenzene	µg/L		**2.2**	<40U	<40U	<40U	<1U	-	-	<100U
1,2,4-trimethylbenzene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
1,2-dichlorobenzene	µg/L	***94***	**500**	**11,000**	**10,000**	**11,000**	**11**	-	-	**30,000**
1,2-dichloroethane	µg/L		**1.7**	<24U	<24U	<24U	<0.6U	-	-	<60U
1,3,5-trimethylbenzene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
1,3-dichlorobenzene	µg/L		**1.4**	<40U	<40U	<40U	<1U	-	-	<100U
1,4-dichlorobenzene	µg/L		**4.7**	<40U	<40U	<40U	<1U	-	-	**230**
2-chlorotoluene	µg/L	***1500***	<1U	<40U	<40U	<40U	**27**	-	-	**130**
Benzene	µg/L		**6**	**66**	**68**	**57**	**2.3**	-	-	<70U
Bromomethane	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Chlorobenzene	µg/L	***1700***	**66**	**720**	**720**	**850**	**41**	-	-	**2700**
Chloroethane	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Chloroform	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Chloromethane	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
cis-1,2-dichloroethene	µg/L		**4.1**	**390**	**440**	**550**	<1U	-	-	**490**
Dichloromethane	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Naphthalene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
n-propylbenzene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Trichloroethene	µg/L		<1U	**130**	**120**	**130**	<1U	-	-	**310**
Tetrachloroethene	µg/L		**2**	**220**	**190**	**200**	<1U	-	-	**11,000**
Toluene	µg/L	***1700***	<1U	<40U	<40U	<40U	<1U	-	-	<100U
Ethylbenzene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
trans-1,2-dichloroethene	µg/L		<1U	<40U	<40U	<40U	<1U	-	-	<100U
Vinyl chloride	µg/L		**29**	<40U	<40U	<40U	**3.6**	-	-	<100U
Xylene (o)	µg/L	***76***	<1U	<40U	<40U	<40U	<1U	-	-	<100U
Xylene Total	µg/L	***76***	<1U	<40U	<40U	<40U	<1U	-	-	<100U

Notes:
Field_D = Field Duplicate
Trip_B -= Trip Blank
Units: ug=micrograms, mg=milligrams, L=liter
- = not analyzed
< = constituent not detected at the specified laboratory reporting limit
Blank cell = no established criteria
Detected parameters for laboratory analyses (not field analyses) in bold.
Exceedances above criteria are highlighted.

Table 3
Summary of Water Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			SW-01	SW-02
Sampled_Date_Time			9/15/2022	9/15/2022
Field_ID			1650220915-02	1650220915-03
Sample_Depth_Avg			0	0
Sample_Type			Normal	Normal
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards		
DissGasses_Total				
Methane	µg/L		-	-
DissOxygen_Dissolved				
Oxygen (Filtered)	mg/L		-	-
Field				
Depth to bottom of well	feet		-	-
DO (Field)	mg/L		-	-
ORP	mV		-	-
Turb (Field)	NTU		-	-
Temp (Field)	oC		-	-
Specific Conductivity (uS/cm) (Field)	uS/cm		-	-
pH (Field)	SU		-	-
Inorganics_Total				
Nitrogen Kjeldahl, total (as N)	mg/L		-	-
Orthophosphate	mg/L		-	-
TOC	mg/L		-	-
Total Dissolved Solids	mg/L		-	-
Ammonia	mg/L		-	-
Alkalinity	mg/L		-	-
Chloride	mg/L		-	-
Nitrate (as N)	mg/L		-	-
Sulphate	mg/L		-	-
Sulphide	mg/L		-	-
Metals_Dissolved				
Iron (Filtered)	mg/L		-	-
Manganese (Filtered)	mg/L		-	-
Metals_Total				
Iron	mg/L		-	-
Manganese	mg/L		-	-
PCBs_5-Micron-Filter				
Arochlor 1248 (Filtered)	µg/L		-	-
PCBs_Total				
Arochlor 1016	µg/L		<0.49U	<0.48U
Arochlor 1248	µg/L		<0.49U	<0.48U
pH_Total				
pH	su		-	-
Redox_Total				
Redox potential	mV		-	-
TPH_Total				
TPH	mg/L		-	-
Turbidity_Total				
Turbidity_	NTU		-	-
VOCs_Total				
M/P-xylenes	µg/L	***76***	<1U	<1U
1,1-dichloroethane	µg/L		<1U	<1U
1,2,4-trichlorobenzene	µg/L		<1U	<1U
1,2,4-trimethylbenzene	µg/L		<1U	<1U
1,2-dichlorobenzene	µg/L	***94***	<1U	<1U
1,2-dichloroethane	µg/L		<0.6U	<0.6U
1,3,5-trimethylbenzene	µg/L		<1U	<1U
1,3-dichlorobenzene	µg/L		<1U	<1U
1,4-dichlorobenzene	µg/L		<1U	<1U
2-chlorotoluene	µg/L	***1500***	<1U	<1U
Benzene	µg/L		<0.7U	<0.7U
Bromomethane	µg/L		<1U	<1U
Chlorobenzene	µg/L	***1700***	<1U	<1U
Chloroethane	µg/L		<1U	<1U
Chloroform	µg/L		<1U	<1U
Chloromethane	µg/L		<1U	<1U
cis-1,2-dichloroethene	µg/L		<1U	<1U
Dichloromethane	µg/L		<1U	<1U
Naphthalene	µg/L		<1U	<1U
n-propylbenzene	µg/L		<1U	<1U
Trichloroethene	µg/L		<1U	<1U
Tetrachloroethene	µg/L		<1U	<1U
Toluene	µg/L	***1700***	<1U	<1U
Ethylbenzene	µg/L		<1U	<1U
trans-1,2-dichloroethene	µg/L		<1U	<1U
Vinyl chloride	µg/L		<1U	<1U
Xylene (o)	µg/L	***76***	<1U	<1U
Xylene Total	µg/L	***76***	<1U	<1U

Notes:

Field_D = Field Duplicate

Trip_B -= Trip Blank

Units: ug=micrograms, mg=milligrams, L=liter

\- = not analyzed

< = constituent not detected at the specified laboratory reporting limit

Blank cell = no established criteria

Detected parameters for laboratory analyses (not field analyses) in bold.

Exceedances above criteria are highlighted.

Appendix B Historical Soil Data Figures and Tables

B.1 Supplemental Remedial Investigation (AECOM, 2016)

B.2 Barrier Installation and Monitoring Report (CEC, 2020)

B.3 Supplemental Investigation Report (Fuss & O’Neill, 2023)

Appendix B-1 Supplemental Remedial Investigation (AECOM, 2016)

Path: J:\Indl_Service\Project Files\BASF-0760\Cranston RI\7_Deliverables\1. GIS_Database\Projects\Figure_3-4_Chlorobenzene_in_Soil.mxd

AECOM

FORMER CIBA-GEIGY
CRANSTON, RI
60163799.8

CHLOROBENZENE IN SOIL

DATE: 10/17/12
DRWN: J.E.B.
FIGURE 4-2

Path: J:\Indl_Service\Project Files\BASF-0760\Cranston RI\7_Deliverables\1. GIS_Database\Projects\Figure_3-4_Chlorobenzene_in_Soil.mxd

AECOM

0 40 80
Feet

N
W E
S

FORMER CIBA-GEIGY
CRANSTON, RI
60163799.8

1,2-DICHLOROBENZENE IN SOIL

DATE: 10/17/12 DRWN: J.E.B.

FIGURE 4-3

Table 4-3 Soil Analytical Results
Former Ciba-Geigy Facility
180 Mill Street
Cranston, RI

			Location	MP-1D	MP-1D	MP-3D	MW-100D	MW-100D	MW-101D	MW-102D	SB101	SB101	SB102	SB102	SB103	SB103	SB104	SB104	SB105	SB105	SB106	SB106	SB107	SB107	SB108	SB108	SB109	SB109	SB109	SB110	SB110	SB111	SB111	SB112	SB112
			Date	5/23/2011	5/23/2011	5/19/2011	5/18/2011	5/18/2011	6/15/2011	6/15/2011	6/12/2012	7/26/2012	6/15/2012	7/26/2012	6/15/2012	7/27/2012	6/15/2012	7/27/2012	6/15/2012	7/26/2012	6/12/2012	7/25/2012	6/15/2012	7/24/2012	6/15/2012	7/23/2012	6/12/2012	6/12/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012
			sample_type_code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Start_depth	8	12	12	11	15	11	9	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	0	4	0	4	0	4	0	4
			End_depth	10	13	14	13	15	13	11	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	2	6	2	6	2	6	2	6
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																																
SW6010	ARSENIC	7.0	mg/kg	NA	NA	NA	NA	NA	NA	NA	6.0	NA	6.6	NA	< 2.4 U	NA	3.2	NA	2.2	NA	4.6	NA	2.8	NA	2.6	NA	< 2.5 U	2.3	NA	2.9	NA	3.1	NA	3.2	NA
SW6010	CADMIUM	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.53 U	NA	< 0.49 U	NA	< 0.48 U	NA	< 0.53 U	NA	< 0.41 U	NA	< 0.52 U	NA	< 0.50 U	NA	< 0.47 U	NA	< 0.51 U	< 0.46 U	NA	< 0.45 U	NA	< 0.42 U	NA	< 0.44 U	NA
SW6010	COPPER	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	15.5	NA	13.5	NA	8.6	NA	10.1	NA	5.6	NA	8.3	NA	10.5	NA	45.3	NA	4.1	4.3	NA	10.4	NA	17.2	NA	10.9	NA
SW6010	MANGANESE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	309	NA	148	NA	88.9	NA	187	NA	104	NA	179	NA	135	NA	106	NA	109	97.2	NA	126	NA	124	NA	146	NA
SW6010	NICKEL	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	12.1	NA	9.2	NA	3.3	NA	6.9	NA	3.5	NA	5.3	NA	6.4	NA	3.4	NA	4.2	3.5	NA	5.1	NA	5.0	NA	4.9	NA
SW6010	VANADIUM	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	13.4	NA	10.9	NA	7.0	NA	9.9	NA	8.2	NA	10.0	NA	7.9	NA	5.7	NA	4.9	4.1	NA	9.2	NA	9.1	NA	8.7	NA
SW6010	ZINC	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	64.0	NA	411	NA	43.0	NA	283	NA	59.1	NA	31.1	NA	257	NA	51.5	NA	38.3	34.9	NA	166	NA	305	NA	121	NA
SW7471	MERCURY	610	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.074	NA	0.248	NA	0.230	NA	0.185	NA	11.0	NA	0.054	NA	0.261	NA	0.313	NA	< 0.033 U	< 0.032 U	NA	0.250	NA	0.321	NA	0.175	NA
SW8081	1,1,1-TRICHLORO-2,2-BIS (P-METHOXPHENYL)-ETHANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.0074	NA	0.0246	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.0081	NA	0.0237	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	4,4-DDD	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	4,4-DDE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	0.0048	0.0039	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	4,4-DDT	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	0.0081	0.0068	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	ALDRIN	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	ALPHA-BHC	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	ALPHA-CHLORDANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0043	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	BETA-BHC	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0041	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	CAMPHECHLOR	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.143 U	NA	< 0.138 U	NA	< 0.130 U	NA	< 0.132 U	NA	< 0.130 U	NA	< 0.145 U	NA	< 0.133 U	NA	< 0.136 U	NA	< 0.132 U	< 0.135 U	NA	< 0.133 U	NA	< 0.135 U	NA	< 0.137 U	NA
SW8081	CHLORDANE	4.4	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0343 U	NA	< 0.0332 U	NA	< 0.0312 U	NA	< 0.0318 U	NA	< 0.0313 U	NA	< 0.0347 U	NA	< 0.0318 U	NA	< 0.0325 U	NA	< 0.0316 U	< 0.0324 U	NA	< 0.0320 U	NA	< 0.0324 U	NA	< 0.0329 U	NA
SW8081	DELTA-BHC	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	DIELDRIN	0.4	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	ENDOSULFAN I	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	0.0135	NA	0.0085	NA	0.0173	NA	0.0052	NA	0.0029	NA	0.0055	NA	0.0079	NA	< 0.0026 U	< 0.0027 U	NA	0.0315	NA	0.0291	NA	0.0213	NA
SW8081	ENDOSULFAN II	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	0.0264	NA	0.0142	NA	0.0416	NA	0.0115	NA	0.0054	NA	0.0124	NA	0.0115	NA	< 0.0026 U	< 0.0027 U	NA	0.0523	NA	0.0567	NA	0.0586	NA
SW8081	ENDOSULFAN SULFATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	0.0066	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0091	NA	< 0.0026 U	< 0.0027 U	NA	0.0033	NA	0.0032	NA	0.0045	NA
SW8081	ENDRIN	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0133	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	ENDRIN ALDEHYDE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	0.0183	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0045	NA	< 0.0026 U	< 0.0027 U	NA	0.0133	NA	0.0231	NA	< 0.0027 U	NA
SW8081	ENDRIN KETONE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	0.0194	NA	0.0759	NA	0.0141	NA	0.0053	NA	< 0.0029 U	NA	0.0037	NA	0.0079	NA	< 0.0026 U	< 0.0027 U	NA	0.0162	NA	0.0138	NA	0.0165	NA
SW8081	GAMMA-CHLORDANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	HEPTACHLOR	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	HEPTACHLOR EPOXIDE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	< 0.0028 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	HEXACHLOROBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0029 U	NA	0.0044	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	0.0077	NA	< 0.0026 U	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	NA
SW8081	LINDANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0017 U	NA	< 0.0017 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0017 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA
SW8082	AROCLOR-1262	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	AROCLOR-1268	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	PCB-1016	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	PCB-1221	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	PCB-1232	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	PCB-1242	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	< 0.0531 U	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	< 0.0570 U	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	< 0.0500 U	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	PCB-1248	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	< 0.0532 U	0.467	< 0.0508 U	< 0.0551 U	< 0.0503 U	< 0.0549 U	< 0.0546 U	< 0.0550 U	< 0.0614 U	< 0.0560 U	< 0.0513 U	0.780	< 0.0540 U	< 0.0537 U	< 0.0534 U	< 0.0486 U	3.82	< 0.0500 U	3.98	< 0.0526 U	2.36	< 0.0514 U
SW8082	PCB-1254	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.0861	< 0.0556 U	23.5	0.184	4.29	< 0.0508 U	7.02	0.349	1.39	1.57	1.54	< 0.0614 U	3.88	1.93	6.92	1.19	< 0.0537 U	0.0950	0.0724	16.5	0.272	19.6	0.325	8.29	< 0.0514 U
SW8082	PCB-1260	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0569 U	< 0.0556 U	< 2.83 U	0.0588	3.61	1.38	0.902	0.128	< 0.0549 U	0.434	< 0.0550 U	< 0.0614 U	< 0.0560 U	0.286	< 0.0570 U	0.290	< 0.0537 U	< 0.0534 U	< 0.0486 U	< 1.14 U	0.0659	< 2.85 U	< 0.0526 U	< 0.0549 U	< 0.0514 U
SW8082	Total PCB Aroclors	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.0861	< 0.0556 U	23.5	0.2428	8.367	1.38	7.922	0.477	1.39	2.004	1.54	< 0.0614 U	3.88	2.216	7.7	1.48	< 0.0537 U	0.095	0.0724	20.32	0.3379	23.58	0.325	10.65	< 0.0514 U
SW8100	TPH	2,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1,2-TETRACHLOROETHANE	220	mg/kg	< 0.278 U	< 0.178 U	< 0.217 U	< 0.0045 U	< 0.128 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1-TRICHLOROETHANE (TCA)	10,000	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1,2,2-TETRACHLOROETHANE	29	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1,2-TRICHLOROETHANE	100	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1-DICHLOROETHANE	10,000	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1-DICHLOROETHENE	10	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,1-DICHLOROPROPENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,3-TRICHLOROBENZENE	--	mg/kg	< 0.139 U	0.0857 J	0.0522 J	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2,3-TRICHLOROPROPANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,4-TRICHLOROBENZENE	10,000	mg/kg	< 0.139 U	0.826	0.270	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2,4-TRIMETHYLBENZENE	--	mg/kg	0.181	0.0767 J	0.228	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	4	mg/kg	< 0.834 U	< 0.535 U	< 0.652 U	< 0.0045 U	< 0.383 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2-DIBROMOETHANE (EDB)	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2-DICHLOROBENZENE	10,000	mg/kg	4.26	50.2	119	< 0.0045 U	0.0919	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2-DICHLOROETHANE	63	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,2-DICHLOROPROPANE	84	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,3,5-TRIMETHYLBENZENE	--	mg/kg	0.167	0.0535 J	0.111	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,3-DICHLOROBENZENE	10,000	mg/kg	0.0195 J	0.136	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,3-DICHLOROPROPANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,4-DICHLOROBENZENE	240	mg/kg	0.539	1.00	0.878	< 0.0045 U	0.0268 J	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	1,4-Dioxane	--	mg/kg	< 13.9 U	< 8.92 U	< 10.9 U	< 0.0897 U	< 6.38 U	NA	NA	< 0.104 U	NA	< 0.0722 U	NA	< 0.0668 U	NA	< 0.0649 U	NA	< 0.0867 U	NA	< 0.107 U	NA	< 0.0725 U	NA	< 0.0868 U	NA	< 0.106 U	< 0.109 U	NA	< 0.0820 U	NA	< 0.0942 U	NA	< 0.0706 U	NA
SW8260B	1-Chlorohexane	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2,2-DICHLOROPROPANE	--	mg/kg	< 0.278 U	< 0.178 U	< 0.217 U	< 0.0045 U	< 0.128 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2-BUTANONE (MEK)	--	mg/kg	< 3.47 U	< 2.23 U	< 2.72 U	< 0.0448 U	< 1.59 U	NA	NA	< 0.0518 U	NA	< 0.0361 U	NA	< 0.0334 U	NA	< 0.0324 U	NA	< 0.0434 U	NA	< 0.0534 U	NA	< 0.0362 U	NA	< 0.0434 U	NA	< 0.0531 U	< 0.0543 U	NA	< 0.0410 U	NA	0.710	NA	< 0.0353 U	NA
SW8260B	2-CHLOROTOLUENE	--	mg/kg	< 0.139 U	0.112	0.0848 J	< 0.0045 U	2.27	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	0.0300	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	2-HEXANONE	--	mg/kg	< 1.39 U	< 0.892 U	< 1.09 U	< 0.0448 U	< 0.638 U	NA	NA	< 0.0518 U	NA	< 0.0361 U	NA	< 0.0334 U	NA	< 0.0324 U	NA	< 0.0434 U	NA	< 0.0534 U	NA	< 0.0362 U	NA	< 0.0434 U	NA	< 0.0531 U	< 0.0543 U	NA	< 0.0410 U	NA	< 0.0471 U	NA	< 0.0353 U	NA
SW8260B	2-PHENYLBUTANE	--	mg/kg	< 0.139 U	< 0.0892 U	0.0239 J	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-CHLOROTOLUENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	0.137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-METHYL-2-PENTANONE (MIBK)	10,000	mg/kg	< 1.39 U	< 0.892 U	< 1.09 U	< 0.0448 U	< 0.638 U	NA	NA	< 0.0518 U	NA	< 0.0361 U	NA	< 0.0334 U	NA	< 0.0324 U	NA	< 0.0434 U	NA	< 0.0534 U	NA	< 0.0362 U	NA	< 0.0434 U	NA	< 0.0531 U	< 0.0543 U	NA	< 0.0410 U	NA	< 0.0471 U	NA	< 0.0353 U	NA
SW8260B	ACETONE	10,000	mg/kg	< 3.47 U	< 2.23 U	< 2.72 U	0.0585	< 1.59 U	NA	NA	< 0.0518 U	NA	< 0.0361 U	NA	< 0.0334 U	NA	< 0.0324 U	NA	< 0.0434 U	NA	< 0.0534 U	NA	< 0.0362 U	NA	< 0.0434 U	NA	< 0.0531 U	< 0.0543 U	NA	0.0627	NA	0.933	NA	0.0649	NA
SW8260B	BENZENE	200	mg/kg	0.414	< 0.0892 U	0.628	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	BROMOBENZENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	BROMODICHLOROMETHANE	92	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	BROMOFORM	720	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	BROMOMETHANE	2,900	mg/kg	< 0.278 U	< 0.178 U	< 0.217 U	< 0.0090 U	< 0.128 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	CARBON DISULFIDE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CARBON TETRACHLORIDE	44	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CHLOROBENZENE	10,000	mg/kg	210	33.7	39.2	0.105	4.75	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CHLOROBROMOMETHANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CHLOROETHANE	--	mg/kg	< 0.278 U	< 0.178 U	< 0.217 U	< 0.0090 U	< 0.128 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	CHLOROFORM	940	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CHLOROMETHANE	--	mg/kg	< 0.278 U	< 0.178 U	< 0.217 U	< 0.0090 U	< 0.128 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	CIS-1,2-DICHLOROETHENE	10,000	mg/kg	< 0.139 U	< 0.0892 U	1.39	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CIS-1,3-DICHLOROPROPENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CYCLOHEXANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	CYMENE	--	mg/kg	0.114 J	0.195	0.0739 J	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIBROMOCHLOROMETHANE	68	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	DIBROMOMETHANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DICHLORODIFLUOROMETHANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0090 U	< 0.0638 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	Diethyl ether	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIISOPROPYL ETHER	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ETHYLBENZENE	10,000	mg/kg	1.51	0.0749 J	0.906	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	Ethyltertiarybutylether	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	HEXACHLORO-1,3-BUTADIENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ISOPROPYLBENZENE	10,000	mg/kg	0.114 J	< 0.0892 U	0.0370 J	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	METHYL ACETATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	METHYL TERT-BUTYL ETHER	10,000	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	METHYLCYCLOHEXANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	METHYLENE CHLORIDE	760	mg/kg	0.0778 J	0.0250 J	0.0761 J	< 0.0224 U	0.0408 J	NA	NA	< 0.0259 U	NA	< 0.0180 U	NA	< 0.0167 U	NA	< 0.0162 U	NA	< 0.0217 U	NA	< 0.0267 U	NA	< 0.0181 U	NA	< 0.0217 U	NA	< 0.0266 U	< 0.0271 U	NA	< 0.0205 U	NA	< 0.0235 U	NA	< 0.0176 U	NA
SW8260B	m-Xylene & p-Xylene	--	mg/kg	1.11	0.0892 J	1.84	< 0.0090 U	< 0.128 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	NAPHTHALENE	--	mg/kg	2.24	1.39	2.38	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-BUTYLBENZENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-PROPYLBENZENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	O-XYLENE	--	mg/kg	2.19	0.0660 J	1.26	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA

Table 4-3 Soil Analytical Results
Former Ciba-Geigy Facility
180 Mill Street
Cranston, RI

			Location	MP-1D	MP-1D	MP-3D	MW-100D	MW-100D	MW-101D	MW-102D	SB101	SB101	SB102	SB102	SB103	SB103	SB104	SB104	SB105	SB105	SB106	SB106	SB107	SB107	SB108	SB108	SB109	SB109	SB109	SB110	SB110	SB111	SB111	SB112	SB112
			Date	5/23/2011	5/23/2011	5/19/2011	5/18/2011	5/18/2011	6/15/2011	6/15/2011	6/12/2012	7/26/2012	6/15/2012	7/26/2012	6/15/2012	7/27/2012	6/15/2012	7/27/2012	6/15/2012	7/26/2012	6/12/2012	7/25/2012	6/15/2012	7/24/2012	6/15/2012	7/23/2012	6/12/2012	6/12/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012
			sample_type_code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Start_depth	8	12	12	11	15	11	9	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	0	4	0	4	0	4	0	4
			End_depth	10	13	14	13	15	13	11	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	2	6	2	6	2	6	2	6
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																																
SW8260B	STYRENE	190	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	tert-Butylbenzene	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	tertiaryAmylmethylether	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TETRACHLOROETHENE (PCE)	110	mg/kg	< 0.139 U	0.0964	0.128	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	0.0328	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	TETRAHYDROFURAN	--	mg/kg	< 1.39 U	< 0.892 U	< 1.09 U	< 0.0045 U	< 0.638 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TOLUENE	10,000	mg/kg	0.270	0.0232 J	15.6	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	0.0111	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	TRANS-1,2-DICHLOROETHENE	10,000	mg/kg	< 0.139 U	< 0.0892 U	0.0522 J	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	TRANS-1,3-DICHLOROPROPENE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	TRICHLOROETHYLENE	520	mg/kg	< 0.139 U	< 0.0892 U	0.0609 J	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	TRICHLOROFLUOROMETHANE	--	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0045 U	< 0.0638 U	NA	NA	< 0.0052 U	NA	< 0.0036 U	NA	< 0.0033 U	NA	< 0.0032 U	NA	< 0.0043 U	NA	< 0.0053 U	NA	< 0.0036 U	NA	< 0.0043 U	NA	< 0.0053 U	< 0.0054 U	NA	< 0.0041 U	NA	< 0.0047 U	NA	< 0.0035 U	NA
SW8260B	VINYL ACETATE	--	mg/kg	< 0.695 U	< 0.446 U	< 0.543 U	< 0.0045 U	< 0.319 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	VINYL CHLORIDE	3.0	mg/kg	< 0.139 U	< 0.0892 U	< 0.109 U	< 0.0090 U	< 0.0638 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8260B	Xylene (Total)	10,000	mg/kg	3.3	0.1552	3.1	< 0.009 U	< 0.128 U	NA	NA	< 0.0104 U	NA	< 0.0072 U	NA	< 0.0067 U	NA	< 0.0065 U	NA	< 0.0087 U	NA	< 0.0107 U	NA	< 0.0072 U	NA	< 0.0087 U	NA	< 0.0106 U	< 0.0109 U	NA	< 0.0082 U	NA	< 0.0094 U	NA	< 0.0071 U	NA
SW8270C	1,2,4,5-TETRACHLOROBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	1,2-BENZPHENANTHRACENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.268	NA	< 0.178 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.345 U	NA	1.34	NA	0.469	NA	0.394	NA	< 0.174 U	< 0.179 U	NA	0.453	NA	< 0.187 U	NA	1.07	NA
SW8270C	2,2-OXYBIS(1-CHLOROPROPANE)	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,4,5-TRICHLOROPHENOL	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,4,6-TRICHLOROPHENOL	520	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,4-DICHLOROPHENOL	6,100	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,4-DIMETHYLPHENOL	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,4-DINITROPHENOL	4,100	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	2,4-DINITROTOLUENE	8.4	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2,6-DINITROTOLUENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-CHLORONAPHTHALENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-CHLOROPHENOL	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-METHYLNAPHTHALENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-METHYLPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-NITROANILINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	0.553	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	2-NITROPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	3,3'-DICHLOROBENZIDINE	13	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.723 U	NA	< 0.713 U	NA	< 0.668 U	NA	< 0.691 U	NA	< 1.38 U	NA	< 0.722 U	NA	< 0.706 U	NA	< 0.746 U	NA	< 0.695 U	< 0.714 U	NA	< 0.714 U	NA	< 0.746 U	NA	< 0.693 U	NA
SW8270C	3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	3-NITROANILINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	4,6-DINITRO-2-METHYLPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	4-BROMOPHENYL PHENYL ETHER	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	4-CHLORO-3-METHYLPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	4-CHLOROPHENYL PHENYL ETHER	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	4-METHYLPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.723 U	NA	< 0.713 U	NA	0.865	NA	< 0.691 U	NA	< 1.38 U	NA	< 0.722 U	NA	< 0.706 U	NA	< 0.746 U	NA	< 0.695 U	< 0.714 U	NA	< 0.714 U	NA	< 0.746 U	NA	< 0.693 U	NA
SW8270C	4-NITROPHENOL	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	ACENAPHTHENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	ACENAPHTHYLENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	ACETOPHENONE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.723 U	NA	< 0.713 U	NA	< 0.668 U	NA	< 0.691 U	NA	< 1.38 U	NA	< 0.722 U	NA	< 0.706 U	NA	< 0.746 U	NA	< 0.695 U	< 0.714 U	NA	< 0.714 U	NA	< 0.746 U	NA	< 0.693 U	NA
SW8270C	ANTHRACENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	0.438	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	0.449	NA
SW8270C	ATRAZINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	BENZALDEHYDE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	BENZO[A]ANTHRACENE	7.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	1.36	NA	0.510	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	0.468	NA	< 0.372 U	NA	1.07	NA
SW8270C	BENZO[A]PYRENE	0.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.226	NA	< 0.178 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.345 U	NA	1.06	NA	0.499	NA	0.386	NA	< 0.174 U	< 0.179 U	NA	0.379	NA	< 0.187 U	NA	0.825	NA
SW8270C	BENZO[B]FLUORANTHENE	7.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	1.30	NA	0.629	NA	0.475	NA	< 0.347 U	< 0.356 U	NA	0.443	NA	< 0.372 U	NA	0.980	NA
SW8270C	BENZO[G,H,I]PERYLENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	0.711	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	0.501	NA
SW8270C	BENZO[K]FLUORANTHENE	78	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	0.528	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	0.403	NA
SW8270C	BENZYL BUTYL PHTHALATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	0.506	NA	1.12	NA	0.797	NA
SW8270C	Biphenyl	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	BIS(2-CHLOROETHOXY)METHANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	BIS(2-CHLOROETHYL)ETHER	5.2	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	BIS(2-ETHYLHEXYL)PHTHALATE	410	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	0.392	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	1.29	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	0.384	NA	0.541	NA
SW8270C	CAPROLACTAM	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	CARBAZOLE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	CHLOROPHENOLS	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	DIBENZO[A,H]ANTHRACENE	0.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.181 U	NA	< 0.178 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.345 U	NA	0.305	NA	< 0.177 U	NA	< 0.187 U	NA	< 0.174 U	< 0.179 U	NA	< 0.179 U	NA	< 0.187 U	NA	0.223	NA
SW8270C	DIBENZOFURAN	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	DIETHYL PHTHALATE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	DIMETHYL PHTHALATE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	DI-N-BUTYLPHTHALATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	DI-N-OCTYLPHTHALATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	FLUORANTHENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.546	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	2.63	NA	0.835	NA	0.653	NA	< 0.347 U	< 0.356 U	NA	0.999	NA	< 0.372 U	NA	2.36	NA
SW8270C	FLUORENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	HEXACHLORO-1,3-BUTADIENE	73	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	HEXACHLOROBENZENE	3.6	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.181 U	NA	< 0.178 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.345 U	NA	< 0.181 U	NA	< 0.177 U	NA	< 0.187 U	NA	< 0.174 U	< 0.179 U	NA	< 0.179 U	NA	< 0.187 U	NA	< 0.173 U	NA
SW8270C	HEXACHLOROCYCLOPENTADIENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	HEXACHLOROETHANE	410	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	INDENO[1,2,3-CD]PYRENE	8	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	0.578	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	0.462	NA
SW8270C	NAPHTHALENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	NITROBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	N-NITROSO-DI-N-PROPYLAMINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	N-NITROSODIPHENYLAMINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	P-CHLOROANILINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.723 U	NA	< 0.713 U	NA	< 0.668 U	NA	< 0.691 U	NA	< 1.38 U	NA	< 0.722 U	NA	< 0.706 U	NA	< 0.746 U	NA	< 0.695 U	< 0.714 U	NA	1.64	NA	< 0.746 U	NA	< 0.693 U	NA
SW8270C	PENTACHLOROPHENOL	48	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.81 U	NA	< 1.78 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 3.45 U	NA	< 1.81 U	NA	< 1.77 U	NA	< 1.87 U	NA	< 1.74 U	< 1.79 U	NA	< 1.79 U	NA	< 1.87 U	NA	< 1.73 U	NA
SW8270C	PHENANTHRENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.382	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	1.58	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	0.806	NA	< 0.372 U	NA	1.48	NA
SW8270C	PHENOL	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	P-NITROANILINE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 0.361 U	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	< 0.360 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.347 U	< 0.356 U	NA	< 0.356 U	NA	< 0.372 U	NA	< 0.346 U	NA
SW8270C	PYRENE	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.436	NA	< 0.356 U	NA	< 0.334 U	NA	< 0.345 U	NA	< 0.689 U	NA	2.14	NA	0.671	NA	0.597	NA	< 0.347 U	< 0.356 U	NA	0.758	NA	< 0.372 U	NA	1.82	NA
SW9014	CYANIDE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	< 1.02 U	NA	< 1.03 U	NA	< 1.00 U	NA	< 1.03 U	NA	< 1.06 U	NA	< 1.04 U	NA	< 1.01 U	NA	< 1.06 U	NA	< 0.96 U	< 0.97 U	NA	< 1.00 U	NA	< 1.07 U	NA	< 1.02 U	NA
TOC.LK	TOTAL ORGANIC CARBON	NA	mg/kg	NA	NA	NA	NA	NA	< 1000 U	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
mg/kg = millgram per kilogram
U = not detected above report detection limit
J = estimated value
NA = Not analyzed
all depth units are in feet

Table 4-3 Soil Analytical Results
Former Ciba-Geigy Facility
180 Mill Street
Cranston, RI

			Location	SB112	SB113	SB113	SB114	SB114	SB115	SB115	SB115	SB116	SB116	SB117	SB117	SB118	SB118	SB118	SB119	SB119	SB120	SB120	SB121	SB121	SB122	SB122	SB123	SB123	SB124	SB124	SB125	SB125	SB126	SB126	SB127
			Date	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	6/15/2012	7/25/2012	6/15/2012	7/26/2012	6/12/2012	7/26/2012	6/12/2012	6/15/2012	7/26/2012	6/12/2012	7/25/2012	6/15/2012	7/24/2012	6/15/2012	7/24/2012	6/15/2012	7/24/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	6/12/2012	7/25/2012	6/12/2012	7/25/2012	7/23/2012
			sample_type_code	FD	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Start_depth	4	0	4	0	4	0	0	4	0	4	0	4	0	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	4
			End_depth	6	2	6	2	6	2	2	6	2	6	2	6	2	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	6
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																																
SW6010	ARSENIC	7.0	mg/kg	NA	3.7	NA	3.7	NA	3.0	3.3	NA	4.4	NA	5.2	NA	2.2	< 2.3 U	NA	2.5	NA	< 2.4 U	NA	2.9	NA	< 2.5 U	NA	< 2.3 U	NA	< 2.3 U	NA	< 2.6 U	NA	< 2.6 U	NA	NA
SW6010	CADMIUM	1,000	mg/kg	NA	< 0.45 U	NA	0.53	NA	< 0.38 U	< 0.51 U	NA	0.99	NA	< 0.55 U	NA	< 0.43 U	2.78	NA	< 0.46 U	NA	< 0.48 U	NA	< 0.48 U	NA	< 0.50 U	NA	NA	NA	NA	NA	< 0.52 U	NA	< 0.51 U	NA	NA
SW6010	COPPER	10,000	mg/kg	NA	15.1	NA	17.4	NA	8.8	9.4	NA	16.9	NA	18.1	NA	9.4	6.7	NA	43.6	NA	10.9	NA	5.9	NA	4.5	NA	< 2.3 U	NA	6.2	NA	3.7	NA	5.5	NA	NA
SW6010	MANGANESE	10,000	mg/kg	NA	195	NA	NA	NA	161	161	NA	193	NA	287	NA	299	137	NA	163	NA	108	NA	158	NA	203	NA	34.5	NA	66.2	NA	84.2	NA	120	NA	NA
SW6010	NICKEL	10,000	mg/kg	NA	7.1	NA	5.6	NA	6.7	6.6	NA	9.2	NA	10.7	NA	7.3	3.7	NA	22.2	NA	4.0	NA	3.8	NA	< 2.5 U	NA	< 2.3 U	NA	< 2.3 U	NA	< 2.6 U	NA	4.2	NA	NA
SW6010	VANADIUM	10,000	mg/kg	NA	10.0	NA	10.1	NA	12.3	15.7	NA	37.0	NA	12.0	NA	12.5	11.8	NA	108	NA	5.2	NA	6.9	NA	4.0	NA	< 0.9 U	NA	2.3	NA	4.5	NA	5.7	NA	NA
SW6010	ZINC	10,000	mg/kg	NA	123	NA	140	NA	85.6	107	NA	150	NA	75.1	NA	82.2	59.3	NA	131	NA	91.6	NA	71.4	NA	35.0	NA	7.5	NA	46.9	NA	21.1	NA	23.7	NA	NA
SW7471	MERCURY	610	mg/kg	NA	0.416	NA	0.536	NA	0.137	0.186	NA	2.22	NA	0.132	NA	0.097	0.282	NA	0.940	NA	0.055	NA	0.373	NA	< 0.030 U	NA	< 0.028 U	NA	0.062	NA	0.049	NA	0.067	NA	NA
SW8081	1,1,1-TRICHLORO-2,2-BIS (P-METHOXPHENYL)-ETHANE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	0.0061	NA	0.0578	< 0.0025 U	NA	< 0.0029 U	NA	0.0147	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	4,4-DDD	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	4,4-DDE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.118	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	4,4-DDT	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ALDRIN	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ALPHA-BHC	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ALPHA-CHLORDANE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	BETA-BHC	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	CAMPHECHLOR	--	mg/kg	NA	< 0.133 U	NA	< 0.135 U	NA	< 0.134 U	< 0.131 U	NA	< 0.139 U	NA	< 0.141 U	NA	< 0.132 U	< 0.126 U	NA	< 0.143 U	NA	< 0.134 U	NA	< 0.136 U	NA	< 0.131 U	NA	< 0.131 U	NA	< 0.131 U	NA	< 0.136 U	NA	< 0.137 U	NA	NA
SW8081	CHLORDANE	4.4	mg/kg	NA	< 0.0318 U	NA	< 0.0324 U	NA	< 0.0322 U	< 0.0315 U	NA	< 0.0334 U	NA	< 0.0339 U	NA	< 0.0318 U	< 0.0303 U	NA	< 0.0344 U	NA	< 0.0321 U	NA	< 0.0326 U	NA	< 0.0314 U	NA	< 0.0314 U	NA	< 0.0314 U	NA	< 0.0326 U	NA	< 0.0329 U	NA	NA
SW8081	DELTA-BHC	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	DIELDRIN	0.4	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.0156	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDOSULFAN I	--	mg/kg	NA	0.0361	NA	0.0477	NA	0.0138	0.0118	NA	0.0238	NA	< 0.0028 U	NA	< 0.0026 U	0.0071	NA	0.0151	NA	0.0111	NA	0.0050	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.0054	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDOSULFAN II	--	mg/kg	NA	0.0544	NA	0.0756	NA	0.0390	0.0211	NA	0.0437	NA	< 0.0028 U	NA	< 0.0026 U	0.0146	NA	0.0388	NA	0.0066	NA	0.0113	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.0118	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDOSULFAN SULFATE	--	mg/kg	NA	0.0061	NA	0.0044	NA	< 0.0027 U	< 0.0026 U	NA	0.0043	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDRIN	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	0.0454	NA	0.0072	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	0.0143	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDRIN ALDEHYDE	--	mg/kg	NA	< 0.0027 U	NA	0.0263	NA	0.0154	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	0.0168	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	ENDRIN KETONE	--	mg/kg	NA	0.0243	NA	0.0220	NA	0.0118	0.0062	NA	0.0317	NA	< 0.0028 U	NA	< 0.0026 U	0.0767	NA	0.0133	NA	0.0112	NA	0.0028	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	GAMMA-CHLORDANE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	HEPTACHLOR	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	HEPTACHLOR EPOXIDE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	< 0.0028 U	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	< 0.0029 U	NA	0.0033	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	HEXACHLOROBENZENE	--	mg/kg	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0027 U	< 0.0026 U	NA	0.0087	NA	< 0.0028 U	NA	< 0.0026 U	< 0.0025 U	NA	0.0043	NA	< 0.0027 U	NA	< 0.0027 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0026 U	NA	< 0.0027 U	NA	< 0.0027 U	NA	NA
SW8081	LINDANE	--	mg/kg	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	< 0.0016 U	NA	< 0.0017 U	NA	< 0.0017 U	NA	< 0.0016 U	< 0.0015 U	NA	< 0.0017 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	< 0.0016 U	NA	NA
SW8082	AROCLOR-1262	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	AROCLOR-1268	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1016	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1221	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1232	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1242	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	< 2.73 U	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1248	10	mg/kg	< 0.0502 U	< 2.76 U	< 0.0529 U	7.44	< 0.0509 U	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	< 0.0543 U	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	0.943	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	< 0.0518 U	< 0.0526 U	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1254	10	mg/kg	< 0.0502 U	19.3	2.40	29.3	0.731	8.54	5.41	< 0.0537 U	16.4	10.7	0.295	0.0908	0.187	7.39	< 0.0503 U	13.2	71.8	1.79	< 0.0622 U	10.8	< 0.0605 U	0.162	11.6	< 0.0498 U	< 0.0510 U	0.791	0.454	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	PCB-1260	10	mg/kg	< 0.0502 U	< 2.76 U	0.370	< 2.73 U	0.238	< 0.0566 U	< 0.0555 U	< 0.0537 U	< 1.16 U	< 1.03 U	< 0.0562 U	< 0.0538 U	0.0901	< 0.0529 U	< 0.0503 U	< 2.79 U	< 5.64 U	< 0.0546 U	< 0.0622 U	< 1.10 U	< 0.0605 U	< 0.0537 U	< 1.09 U	< 0.0498 U	< 0.0510 U	0.148	0.0890	< 0.0540 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8082	Total PCB Aroclors	10	mg/kg	< 0.0502 U	19.3	2.77	36.74	0.969	8.54	5.41	< 0.0537 U	16.4	10.7	0.295	0.0908	0.2771	7.39	< 0.0503 U	13.2	71.8	2.733	< 0.0622 U	10.8	< 0.0605 U	0.162	11.6	< 0.0498 U	< 0.051 U	0.939	0.543	< 0.054 U	< 0.0521 U	< 0.0532 U	< 0.0531 U	< 0.0498 U
SW8100	TPH	2,500	mg/kg	NA	NA	NA	NA	NA	57.7	43.0	NA	379	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1,2-TETRACHLOROETHANE	220	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1-TRICHLOROETHANE (TCA)	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1,2,2-TETRACHLOROETHANE	29	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1,2-TRICHLOROETHANE	100	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1-DICHLOROETHANE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1-DICHLOROETHENE	10	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,1-DICHLOROPROPENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,3-TRICHLOROBENZENE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2,3-TRICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,4-TRICHLOROBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2,4-TRIMETHYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	4	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2-DIBROMOETHANE (EDB)	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2-DICHLOROBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2-DICHLOROETHANE	63	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,2-DICHLOROPROPANE	84	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,3,5-TRIMETHYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,3-DICHLOROBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,3-DICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,4-DICHLOROBENZENE	240	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	1,4-Dioxane	--	mg/kg	NA	< 0.0811 U	NA	< 0.102 U	NA	< 0.0931 U	< 0.0744 U	NA	< 0.0952 U	NA	< 0.104 U	NA	< 0.100 U	< 0.0706 U	NA	< 0.116 U	NA	< 0.0757 U	NA	< 0.0727 U	NA	< 0.0694 U	NA	< 0.0836 U	NA	< 0.0631 U	NA	< 0.117 U	NA	< 0.107 U	NA	NA
SW8260B	1-Chlorohexane	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2,2-DICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2-BUTANONE (MEK)	--	mg/kg	NA	< 0.0406 U	NA	< 0.0511 U	NA	< 0.0466 U	< 0.0372 U	NA	0.132	NA	< 0.0520 U	NA	< 0.0502 U	< 0.0353 U	NA	< 0.0579 U	NA	< 0.0379 U	NA	< 0.0363 U	NA	< 0.0347 U	NA	< 0.0418 U	NA	< 0.0316 U	NA	< 0.0585 U	NA	< 0.0537 U	NA	NA
SW8260B	2-CHLOROTOLUENE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	2-HEXANONE	--	mg/kg	NA	< 0.0406 U	NA	< 0.0511 U	NA	< 0.0466 U	< 0.0372 U	NA	< 0.0476 U	NA	< 0.0520 U	NA	< 0.0502 U	< 0.0353 U	NA	< 0.0579 U	NA	< 0.0379 U	NA	< 0.0363 U	NA	< 0.0347 U	NA	< 0.0418 U	NA	< 0.0316 U	NA	< 0.0585 U	NA	< 0.0537 U	NA	NA
SW8260B	2-PHENYLBUTANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-CHLOROTOLUENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-METHYL-2-PENTANONE (MIBK)	10,000	mg/kg	NA	< 0.0406 U	NA	< 0.0511 U	NA	< 0.0466 U	< 0.0372 U	NA	< 0.0476 U	NA	< 0.0520 U	NA	< 0.0502 U	< 0.0353 U	NA	< 0.0579 U	NA	< 0.0379 U	NA	< 0.0363 U	NA	< 0.0347 U	NA	< 0.0418 U	NA	< 0.0316 U	NA	< 0.0585 U	NA	< 0.0537 U	NA	NA
SW8260B	ACETONE	10,000	mg/kg	NA	< 0.0406 U	NA	< 0.0511 U	NA	0.0758	< 0.0372 U	NA	0.262	NA	< 0.0520 U	NA	< 0.0502 U	< 0.0353 U	NA	< 0.0579 U	NA	< 0.0379 U	NA	< 0.0363 U	NA	< 0.0347 U	NA	< 0.0418 U	NA	< 0.0316 U	NA	< 0.0585 U	NA	< 0.0537 U	NA	NA
SW8260B	BENZENE	200	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	BROMOBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	BROMODICHLOROMETHANE	92	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	BROMOFORM	720	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	BROMOMETHANE	2,900	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	CARBON DISULFIDE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CARBON TETRACHLORIDE	44	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CHLOROBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CHLOROBROMOMETHANE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CHLOROETHANE	--	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	CHLOROFORM	940	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CHLOROMETHANE	--	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	CIS-1,2-DICHLOROETHENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CIS-1,3-DICHLOROPROPENE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CYCLOHEXANE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	CYMENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIBROMOCHLOROMETHANE	68	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	DIBROMOMETHANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DICHLORODIFLUOROMETHANE	--	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	Diethyl ether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIISOPROPYL ETHER	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ETHYLBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	Ethyltertiarybutylether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	HEXACHLORO-1,3-BUTADIENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ISOPROPYLBENZENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	METHYL ACETATE	--	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	METHYL TERT-BUTYL ETHER	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	METHYLCYCLOHEXANE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	METHYLENE CHLORIDE	760	mg/kg	NA	< 0.0203 U	NA	< 0.0255 U	NA	< 0.0233 U	< 0.0186 U	NA	< 0.0238 U	NA	< 0.0260 U	NA	< 0.0251 U	< 0.0177 U	NA	< 0.0289 U	NA	< 0.0189 U	NA	< 0.0182 U	NA	< 0.0174 U	NA	< 0.0209 U	NA	< 0.0158 U	NA	< 0.0292 U	NA	< 0.0269 U	NA	NA
SW8260B	m-Xylene & p-Xylene	--	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	NAPHTHALENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-BUTYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-PROPYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	O-XYLENE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA

Table 4-3 Soil Analytical Results
Former Ciba-Geigy Facility
180 Mill Street
Cranston, RI

			Location	SB112	SB113	SB113	SB114	SB114	SB115	SB115	SB115	SB116	SB116	SB117	SB117	SB118	SB118	SB118	SB119	SB119	SB120	SB120	SB121	SB121	SB122	SB122	SB123	SB123	SB124	SB124	SB125	SB125	SB126	SB126	SB127
			Date	7/23/2012	6/15/2012	7/23/2012	6/15/2012	7/23/2012	6/15/2012	6/15/2012	7/25/2012	6/15/2012	7/26/2012	6/12/2012	7/26/2012	6/12/2012	6/15/2012	7/26/2012	6/12/2012	7/25/2012	6/15/2012	7/24/2012	6/15/2012	7/24/2012	6/15/2012	7/24/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	6/12/2012	7/25/2012	6/12/2012	7/25/2012	7/23/2012
			sample_type_code	FD	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Start_depth	4	0	4	0	4	0	0	4	0	4	0	4	0	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	4
			End_depth	6	2	6	2	6	2	2	6	2	6	2	6	2	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	6
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																																
SW8260B	STYRENE	190	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	tert-Butylbenzene	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	tertiaryAmylmethylether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TETRACHLOROETHENE (PCE)	110	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	TETRAHYDROFURAN	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TOLUENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	0.0161	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	TRANS-1,2-DICHLOROETHENE	10,000	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	TRANS-1,3-DICHLOROPROPENE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	TRICHLOROETHYLENE	520	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	TRICHLOROFLUOROMETHANE	--	mg/kg	NA	< 0.0041 U	NA	< 0.0051 U	NA	< 0.0047 U	< 0.0037 U	NA	< 0.0048 U	NA	< 0.0052 U	NA	< 0.0050 U	< 0.0035 U	NA	< 0.0058 U	NA	< 0.0038 U	NA	< 0.0036 U	NA	< 0.0035 U	NA	< 0.0042 U	NA	< 0.0032 U	NA	< 0.0058 U	NA	< 0.0054 U	NA	NA
SW8260B	VINYL ACETATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	VINYL CHLORIDE	3.0	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.0100 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8260B	Xylene (Total)	10,000	mg/kg	NA	< 0.0081 U	NA	< 0.0102 U	NA	< 0.0093 U	< 0.0074 U	NA	< 0.0095 U	NA	< 0.0104 U	NA	< 0.01 U	< 0.0071 U	NA	< 0.0116 U	NA	< 0.0076 U	NA	< 0.0073 U	NA	< 0.0069 U	NA	< 0.0084 U	NA	< 0.0063 U	NA	< 0.0117 U	NA	< 0.0107 U	NA	NA
SW8270C	1,2,4,5-TETRACHLOROBENZENE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	1,2-BENZPHENANTHRACENE	--	mg/kg	NA	0.195	NA	0.415	NA	< 0.180 U	< 0.177 U	NA	0.225	NA	< 0.186 U	NA	< 0.179 U	< 0.168 U	NA	0.197	NA	< 0.182 U	NA	< 0.172 U	NA	< 0.174 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.175 U	NA	< 0.172 U	NA	NA
SW8270C	2,2-OXYBIS(1-CHLOROPROPANE)	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,4,5-TRICHLOROPHENOL	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,4,6-TRICHLOROPHENOL	520	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,4-DICHLOROPHENOL	6,100	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,4-DIMETHYLPHENOL	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,4-DINITROPHENOL	4,100	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	2,4-DINITROTOLUENE	8.4	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2,6-DINITROTOLUENE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-CHLORONAPHTHALENE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-CHLOROPHENOL	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-METHYLNAPHTHALENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-METHYLPHENOL	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-NITROANILINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	2-NITROPHENOL	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	3,3'-DICHLOROBENZIDINE	13	mg/kg	NA	< 0.697 U	NA	< 0.770 U	NA	< 0.719 U	< 0.706 U	NA	< 0.707 U	NA	< 0.744 U	NA	< 0.714 U	< 0.670 U	NA	< 0.722 U	NA	< 0.727 U	NA	< 0.685 U	NA	< 0.695 U	NA	< 0.667 U	NA	< 0.692 U	NA	< 0.697 U	NA	< 0.688 U	NA	NA
SW8270C	3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	3-NITROANILINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	4,6-DINITRO-2-METHYLPHENOL	--	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	4-BROMOPHENYL PHENYL ETHER	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	4-CHLORO-3-METHYLPHENOL	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	4-CHLOROPHENYL PHENYL ETHER	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	4-METHYLPHENOL	--	mg/kg	NA	< 0.697 U	NA	< 0.770 U	NA	< 0.719 U	< 0.706 U	NA	< 0.707 U	NA	< 0.744 U	NA	< 0.714 U	< 0.670 U	NA	< 0.722 U	NA	< 0.727 U	NA	< 0.685 U	NA	< 0.695 U	NA	< 0.667 U	NA	< 0.692 U	NA	< 0.697 U	NA	< 0.688 U	NA	NA
SW8270C	4-NITROPHENOL	--	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	ACENAPHTHENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	ACENAPHTHYLENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	ACETOPHENONE	--	mg/kg	NA	< 0.697 U	NA	< 0.770 U	NA	< 0.719 U	< 0.706 U	NA	< 0.707 U	NA	< 0.744 U	NA	< 0.714 U	< 0.670 U	NA	< 0.722 U	NA	< 0.727 U	NA	< 0.685 U	NA	< 0.695 U	NA	< 0.667 U	NA	< 0.692 U	NA	< 0.697 U	NA	< 0.688 U	NA	NA
SW8270C	ANTHRACENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	ATRAZINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZALDEHYDE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	1.04	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZO[A]ANTHRACENE	7.8	mg/kg	NA	< 0.348 U	NA	0.396	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZO[A]PYRENE	0.8	mg/kg	NA	0.188	NA	0.362	NA	< 0.180 U	< 0.177 U	NA	0.198	NA	< 0.186 U	NA	< 0.179 U	< 0.168 U	NA	0.202	NA	< 0.182 U	NA	< 0.172 U	NA	< 0.174 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.175 U	NA	< 0.172 U	NA	NA
SW8270C	BENZO[B]FLUORANTHENE	7.8	mg/kg	NA	< 0.348 U	NA	0.418	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZO[G,H,I]PERYLENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZO[K]FLUORANTHENE	78	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BENZYL BUTYL PHTHALATE	--	mg/kg	NA	1.40	NA	0.830	NA	< 0.359 U	< 0.353 U	NA	2.10	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	Biphenyl	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BIS(2-CHLOROETHOXY)METHANE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BIS(2-CHLOROETHYL)ETHER	5.2	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	BIS(2-ETHYLHEXYL)PHTHALATE	410	mg/kg	NA	0.971	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	CAPROLACTAM	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	CARBAZOLE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	CHLOROPHENOLS	--	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	DIBENZO[A,H]ANTHRACENE	0.8	mg/kg	NA	< 0.175 U	NA	< 0.193 U	NA	< 0.180 U	< 0.177 U	NA	< 0.177 U	NA	< 0.186 U	NA	< 0.179 U	< 0.168 U	NA	< 0.181 U	NA	< 0.182 U	NA	< 0.172 U	NA	< 0.174 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.175 U	NA	< 0.172 U	NA	NA
SW8270C	DIBENZOFURAN	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	DIETHYL PHTHALATE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	DIMETHYL PHTHALATE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	DI-N-BUTYLPHTHALATE	--	mg/kg	NA	0.426	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	DI-N-OCTYLPHTHALATE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	FLUORANTHENE	10,000	mg/kg	NA	0.352	NA	0.821	NA	< 0.359 U	< 0.353 U	NA	0.407	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	0.381	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	FLUORENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	HEXACHLORO-1,3-BUTADIENE	73	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	HEXACHLOROBENZENE	3.6	mg/kg	NA	< 0.175 U	NA	< 0.193 U	NA	< 0.180 U	< 0.177 U	NA	< 0.177 U	NA	< 0.186 U	NA	< 0.179 U	< 0.168 U	NA	< 0.181 U	NA	< 0.182 U	NA	< 0.172 U	NA	< 0.174 U	NA	< 0.167 U	NA	< 0.173 U	NA	< 0.175 U	NA	< 0.172 U	NA	NA
SW8270C	HEXACHLOROCYCLOPENTADIENE	--	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	HEXACHLOROETHANE	410	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	INDENO[1,2,3-CD]PYRENE	8	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	NAPHTHALENE	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	NITROBENZENE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	N-NITROSO-DI-N-PROPYLAMINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	N-NITROSODIPHENYLAMINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	P-CHLOROANILINE	--	mg/kg	NA	< 0.697 U	NA	< 0.770 U	NA	< 0.719 U	< 0.706 U	NA	< 0.707 U	NA	< 0.744 U	NA	< 0.714 U	< 0.670 U	NA	0.986	NA	0.869	NA	< 0.685 U	NA	< 0.695 U	NA	< 0.667 U	NA	< 0.692 U	NA	< 0.697 U	NA	< 0.688 U	NA	NA
SW8270C	PENTACHLOROPHENOL	48	mg/kg	NA	< 1.75 U	NA	< 1.93 U	NA	< 1.80 U	< 1.77 U	NA	< 1.77 U	NA	< 1.86 U	NA	< 1.79 U	< 1.68 U	NA	< 1.81 U	NA	< 1.82 U	NA	< 1.72 U	NA	< 1.74 U	NA	< 1.67 U	NA	< 1.73 U	NA	< 1.75 U	NA	< 1.72 U	NA	NA
SW8270C	PHENANTHRENE	10,000	mg/kg	NA	< 0.348 U	NA	0.596	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	PHENOL	10,000	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	1.28	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	P-NITROANILINE	--	mg/kg	NA	< 0.348 U	NA	< 0.384 U	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW8270C	PYRENE	10,000	mg/kg	NA	< 0.348 U	NA	0.596	NA	< 0.359 U	< 0.353 U	NA	< 0.353 U	NA	< 0.372 U	NA	< 0.357 U	< 0.334 U	NA	< 0.360 U	NA	< 0.363 U	NA	< 0.342 U	NA	< 0.347 U	NA	< 0.333 U	NA	< 0.346 U	NA	< 0.348 U	NA	< 0.344 U	NA	NA
SW9014	CYANIDE	--	mg/kg	NA	< 1.01 U	NA	< 1.03 U	NA	< 1.08 U	< 1.04 U	NA	< 1.05 U	NA	< 1.03 U	NA	< 1.06 U	< 0.95 U	NA	< 1.05 U	NA	< 1.00 U	NA	< 1.03 U	NA	< 1.02 U	NA	< 0.93 U	NA	< 0.99 U	NA	< 1.03 U	NA	< 1.04 U	NA	NA
TOC.LK	TOTAL ORGANIC CARBON	NA	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
mg/kg = millgram per kilogram
U = not detected above report detection limit
J = estimated value
NA = Not analyzed
all depth units are in feet

			Location	SB127	SB127	SB127	SB128	SB128	SB129	SB129	SB130	SB131	SB132	SB133	SB134	SB135	SB136	SB136	SB137
			Date	7/24/2012	7/26/2012	7/26/2012	7/25/2012	7/25/2012	7/25/2012	7/25/2012	7/27/2012	7/26/2012	7/26/2012	7/26/2012	7/26/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012
			sample_type_code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Start_depth	0	4	10	0	4	0	4	19	19	20	19	20	20	20	20	22
			End_depth	2	6	12	2	6	2	6	21	21	22	21	22	22	22	22	24
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																
SW6010	ARSENIC	7.0	mg/kg	< 2.4 U	NA	NA	5.5	NA	< 2.3 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	CADMIUM	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	COPPER	10,000	mg/kg	9.3	NA	NA	11.9	NA	8.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	MANGANESE	10,000	mg/kg	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	NICKEL	10,000	mg/kg	4.9	NA	NA	6.5	NA	4.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	VANADIUM	10,000	mg/kg	5.5	NA	NA	12.1	NA	7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW6010	ZINC	10,000	mg/kg	19.1	NA	NA	42.9	NA	44.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW7471	MERCURY	610	mg/kg	< 0.032 U	NA	NA	0.124	NA	0.457	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	1,1,1-TRICHLORO-2,2-BIS (P-METHOXPHENYL)-ETHANE	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	4,4-DDD	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	4,4-DDE	--	mg/kg	< 0.0027 U	NA	NA	0.0178	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	4,4-DDT	--	mg/kg	< 0.0027 U	NA	NA	0.0847	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ALDRIN	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ALPHA-BHC	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ALPHA-CHLORDANE	--	mg/kg	< 0.0027 U	NA	NA	0.0241	NA	0.0032	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	BETA-BHC	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	CAMPHECHLOR	--	mg/kg	< 0.135 U	NA	NA	< 0.130 U	NA	< 0.139 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	CHLORDANE	4.4	mg/kg	< 0.0324 U	NA	NA	0.163	NA	< 0.0334 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	DELTA-BHC	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	DIELDRIN	0.4	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDOSULFAN I	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDOSULFAN II	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDOSULFAN SULFATE	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDRIN	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDRIN ALDEHYDE	--	mg/kg	< 0.0027 U	NA	NA	0.0070	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	ENDRIN KETONE	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	GAMMA-CHLORDANE	--	mg/kg	< 0.0027 U	NA	NA	0.0139	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	HEPTACHLOR	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	HEPTACHLOR EPOXIDE	--	mg/kg	< 0.0027 U	NA	NA	0.0131	NA	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	HEXACHLOROBENZENE	--	mg/kg	< 0.0027 U	NA	NA	< 0.0026 U	NA	< 0.0028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8081	LINDANE	--	mg/kg	< 0.0016 U	NA	NA	< 0.0016 U	NA	< 0.0017 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	AROCLOR-1262	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	AROCLOR-1268	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1016	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1221	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1232	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1242	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1248	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1254	10	mg/kg	< 0.0506 U	NA	NA	< 0.0534 U	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	PCB-1260	10	mg/kg	< 0.0506 U	NA	NA	0.0541	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082	Total PCB Aroclors	10	mg/kg	< 0.0506 U	NA	NA	0.0541	< 0.0554 U	< 0.0551 U	< 0.0515 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8100	TPH	2,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1,2-TETRACHLOROETHANE	220	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,1,1-TRICHLOROETHANE (TCA)	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1,2,2-TETRACHLOROETHANE	29	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1,2-TRICHLOROETHANE	100	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1-DICHLOROETHANE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1-DICHLOROETHENE	10	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,1-DICHLOROPROPENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,3-TRICHLOROBENZENE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,2,3-TRICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2,4-TRICHLOROBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	0.0540 D J	< 0.0552 D U	0.0232 D J	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,2,4-TRIMETHYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	4	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.305 D U	< 0.386 D U	< 0.331 D U	< 0.331 D U	< 0.0041 U	< 0.366 D U	< 0.378 D U	< 0.332 D U
SW8260B	1,2-DIBROMOETHANE (EDB)	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,2-DICHLOROBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	0.384 D	0.0618 D	0.0751 D	< 0.0041 U	0.0268 D J	0.0315 D J	0.152 D
SW8260B	1,2-DICHLOROETHANE	63	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,2-DICHLOROPROPANE	84	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,3,5-TRIMETHYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,3-DICHLOROBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,3-DICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	1,4-DICHLOROBENZENE	240	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	0.0244 D J	0.0232 D J	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	1,4-Dioxane	--	mg/kg	< 0.0822 U	< 0.0729 U	< 0.0803 U	< 0.0845 U	NA	< 0.0960 U	NA	< 0.0745 U	< 5.09 D U	< 6.43 D U	< 5.52 D U	< 5.52 D U	< 0.0812 U	< 6.10 D U	< 6.29 D U	< 5.54 D U
SW8260B	1-Chlorohexane	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2,2-DICHLOROPROPANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	2-BUTANONE (MEK)	--	mg/kg	< 0.0411 U	< 0.0364 U	< 0.0401 U	< 0.0423 U	NA	< 0.0480 U	NA	< 0.0372 U	< 1.27 D U	< 1.61 D U	< 1.38 D U	< 1.38 D U	< 0.0406 U	< 1.53 D U	< 1.57 D U	< 1.38 D U
SW8260B	2-CHLOROTOLUENE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	0.518 D	112 D	3.25 D	4.22 D	0.161	3.59 D	4.17 D	< 0.0554 D U
SW8260B	2-HEXANONE	--	mg/kg	< 0.0411 U	< 0.0364 U	< 0.0401 U	< 0.0423 U	NA	< 0.0480 U	NA	< 0.0372 U	< 0.509 D U	< 0.643 D U	< 0.552 D U	< 0.552 D U	< 0.0406 U	< 0.610 D U	< 0.629 D U	< 0.554 D U
SW8260B	2-PHENYLBUTANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-CHLOROTOLUENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	4-METHYL-2-PENTANONE (MIBK)	10,000	mg/kg	< 0.0411 U	< 0.0364 U	< 0.0401 U	< 0.0423 U	NA	< 0.0480 U	NA	< 0.0372 U	< 0.509 D U	< 0.643 D U	< 0.552 D U	< 0.552 D U	< 0.0406 U	< 0.610 D U	< 0.629 D U	< 0.554 D U
SW8260B	ACETONE	10,000	mg/kg	< 0.0411 U	< 0.0364 U	< 0.0401 U	< 0.0423 U	NA	< 0.0480 U	NA	< 0.0372 U	< 1.27 D U	< 1.61 D U	< 1.38 D U	< 1.38 D U	< 0.0406 U	< 1.53 D U	< 1.57 D U	< 1.38 D U
SW8260B	BENZENE	200	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	0.369 D	< 0.0643 D U	0.224 D	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	0.0255 D J
SW8260B	BROMOBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	BROMODICHLOROMETHANE	92	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	BROMOFORM	720	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	BROMOMETHANE	2,900	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	< 0.102 D U	< 0.129 D U	< 0.110 D U	< 0.110 D U	< 0.0081 U	< 0.122 D U	< 0.126 D U	< 0.111 D U
SW8260B	CARBON DISULFIDE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CARBON TETRACHLORIDE	44	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CHLOROBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	16.4 D	0.159 D	1.42 D	1.46 D	0.0641	7.95 D	7.27 D	16.6 D
SW8260B	CHLOROBROMOMETHANE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CHLOROETHANE	--	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	< 0.102 D U	< 0.129 D U	< 0.110 D U	< 0.110 D U	< 0.0081 U	< 0.122 D U	< 0.126 D U	< 0.111 D U
SW8260B	CHLOROFORM	940	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CHLOROMETHANE	--	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	< 0.102 D U	< 0.129 D U	< 0.110 D U	< 0.110 D U	< 0.0081 U	< 0.122 D U	< 0.126 D U	< 0.111 D U
SW8260B	CIS-1,2-DICHLOROETHENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CIS-1,3-DICHLOROPROPENE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CYCLOHEXANE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	CYMENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIBROMOCHLOROMETHANE	68	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	DIBROMOMETHANE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DICHLORODIFLUOROMETHANE	--	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0081 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	Diethyl ether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	DIISOPROPYL ETHER	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ETHYLBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	0.375 D	0.456 D	0.178 D	< 0.0552 D U	< 0.0041 U	0.0171 D J	0.0176 D J	0.0177 D J
SW8260B	Ethyltertiarybutylether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	HEXACHLORO-1,3-BUTADIENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	ISOPROPYLBENZENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	0.0180 D J	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	METHYL ACETATE	--	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	0.0915 D J	< 0.643 D U	< 0.552 D U	< 0.552 D U	< 0.0081 U	< 0.610 D U	< 0.629 D U	< 0.554 D U
SW8260B	METHYL TERT-BUTYL ETHER	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	METHYLCYCLOHEXANE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	0.0758 D	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	METHYLENE CHLORIDE	760	mg/kg	< 0.0206 U	< 0.0182 U	< 0.0201 U	< 0.0211 U	NA	< 0.0240 U	NA	< 0.0186 U	< 0.254 D U	< 0.321 D U	< 0.276 D U	< 0.276 D U	< 0.0203 U	< 0.305 D U	< 0.315 D U	< 0.277 D U
SW8260B	m-Xylene & p-Xylene	--	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	0.252 D	1.57 D	0.703 D	0.0265 D J	< 0.0081 U	0.0586 D J	0.0617 D J	< 0.111 D U
SW8260B	NAPHTHALENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-BUTYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	N-PROPYLBENZENE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	O-XYLENE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	0.229 D	0.366 D	0.147 D	0.0121 D J	< 0.0041 U	0.0378 D J	0.0365 D J	< 0.0554 D U

Table 4-3 Soil Analytical Results
Former Ciba-Geigy Facility
180 Mill Street
Cranston, RI

			Location	SB127	SB127	SB127	SB128	SB128	SB129	SB129	SB130	SB131	SB132	SB133	SB134	SB135	SB136	SB136	SB137
			Date	7/24/2012	7/26/2012	7/26/2012	7/25/2012	7/25/2012	7/25/2012	7/25/2012	7/27/2012	7/26/2012	7/26/2012	7/26/2012	7/26/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012
			sample_type_code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Start_depth	0	4	10	0	4	0	4	19	19	20	19	20	20	20	20	22
			End_depth	2	6	12	2	6	2	6	21	21	22	21	22	22	22	22	24
Analytical method	Chemical Name	RI Ind/Comm (mg/kg)	Unit																
SW8260B	STYRENE	190	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	tert-Butylbenzene	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	tertiaryAmylmethylether	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TETRACHLOROETHENE (PCE)	110	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	TETRAHYDROFURAN	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	TOLUENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	0.0163 D J	6.32 D	4.67 D	0.0265 D J	< 0.0041 U	0.0244 D J	0.0290 D J	0.411 D
SW8260B	TRANS-1,2-DICHLOROETHENE	10,000	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	TRANS-1,3-DICHLOROPROPENE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	TRICHLOROETHYLENE	520	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	TRICHLOROFLUOROMETHANE	--	mg/kg	< 0.0041 U	< 0.0036 U	< 0.0040 U	< 0.0042 U	NA	< 0.0048 U	NA	< 0.0037 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0041 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	VINYL ACETATE	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8260B	VINYL CHLORIDE	3.0	mg/kg	< 0.0082 U	< 0.0073 U	< 0.0080 U	< 0.0085 U	NA	< 0.0096 U	NA	< 0.0074 U	< 0.0509 D U	< 0.0643 D U	< 0.0552 D U	< 0.0552 D U	< 0.0081 U	< 0.0610 D U	< 0.0629 D U	< 0.0554 D U
SW8260B	Xylene (Total)	10,000	mg/kg	< 0.0082 U	< 0.0073 U	< 0.008 U	< 0.0085 U	NA	< 0.0096 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	1,2,4,5-TETRACHLOROBENZENE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	1,2-BENZPHENANTHRACENE	--	mg/kg	< 0.186 U	NA	NA	6.99	NA	0.552	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,2-OXYBIS(1-CHLOROPROPANE)	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4,5-TRICHLOROPHENOL	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4,6-TRICHLOROPHENOL	520	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4-DICHLOROPHENOL	6,100	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4-DIMETHYLPHENOL	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4-DINITROPHENOL	4,100	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,4-DINITROTOLUENE	8.4	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2,6-DINITROTOLUENE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-CHLORONAPHTHALENE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-CHLOROPHENOL	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-METHYLNAPHTHALENE	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-METHYLPHENOL	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-NITROANILINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	2-NITROPHENOL	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	3,3'-DICHLOROBENZIDINE	13	mg/kg	< 0.742 U	NA	NA	< 0.649 U	NA	< 0.694 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	3-NITROANILINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4,6-DINITRO-2-METHYLPHENOL	--	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4-BROMOPHENYL PHENYL ETHER	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4-CHLORO-3-METHYLPHENOL	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4-CHLOROPHENYL PHENYL ETHER	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4-METHYLPHENOL	--	mg/kg	< 0.742 U	NA	NA	< 0.649 U	NA	< 0.694 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	4-NITROPHENOL	--	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	ACENAPHTHENE	10,000	mg/kg	< 0.370 U	NA	NA	0.369	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	ACENAPHTHYLENE	10,000	mg/kg	< 0.370 U	NA	NA	1.28	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	ACETOPHENONE	--	mg/kg	< 0.742 U	NA	NA	< 0.649 U	NA	< 0.694 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	ANTHRACENE	10,000	mg/kg	< 0.370 U	NA	NA	2.09	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	ATRAZINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZALDEHYDE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZO[A]ANTHRACENE	7.8	mg/kg	< 0.370 U	NA	NA	6.07	NA	0.521	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZO[A]PYRENE	0.8	mg/kg	< 0.186 U	NA	NA	5.14	NA	0.473	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZO[B]FLUORANTHENE	7.8	mg/kg	< 0.370 U	NA	NA	6.60	NA	0.608	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZO[G,H,I]PERYLENE	10,000	mg/kg	< 0.370 U	NA	NA	3.20	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZO[K]FLUORANTHENE	78	mg/kg	< 0.370 U	NA	NA	2.24	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BENZYL BUTYL PHTHALATE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	Biphenyl	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BIS(2-CHLOROETHOXY)METHANE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BIS(2-CHLOROETHYL)ETHER	5.2	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	BIS(2-ETHYLHEXYL)PHTHALATE	410	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	CAPROLACTAM	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	CARBAZOLE	--	mg/kg	< 0.370 U	NA	NA	0.801	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	CHLOROPHENOLS	--	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DIBENZO[A,H]ANTHRACENE	0.8	mg/kg	< 0.186 U	NA	NA	1.34	NA	< 0.174 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DIBENZOFURAN	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DIETHYL PHTHALATE	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DIMETHYL PHTHALATE	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DI-N-BUTYLPHTHALATE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	DI-N-OCTYLPHTHALATE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	FLUORANTHENE	10,000	mg/kg	< 0.370 U	NA	NA	13.8	NA	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	FLUORENE	10,000	mg/kg	< 0.370 U	NA	NA	0.644	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	HEXACHLORO-1,3-BUTADIENE	73	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	HEXACHLOROBENZENE	3.6	mg/kg	< 0.186 U	NA	NA	< 0.162 U	NA	< 0.174 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	HEXACHLOROCYCLOPENTADIENE	--	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	HEXACHLOROETHANE	410	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	INDENO[1,2,3-CD]PYRENE	8	mg/kg	< 0.370 U	NA	NA	2.94	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	NAPHTHALENE	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	NITROBENZENE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	N-NITROSO-DI-N-PROPYLAMINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	N-NITROSODIPHENYLAMINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	P-CHLOROANILINE	--	mg/kg	< 0.742 U	NA	NA	< 0.649 U	NA	< 0.694 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	PENTACHLOROPHENOL	48	mg/kg	< 1.86 U	NA	NA	< 1.62 U	NA	< 1.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	PHENANTHRENE	10,000	mg/kg	< 0.370 U	NA	NA	7.10	NA	0.503	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	PHENOL	10,000	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	P-NITROANILINE	--	mg/kg	< 0.370 U	NA	NA	< 0.324 U	NA	< 0.347 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8270C	PYRENE	10,000	mg/kg	< 0.370 U	NA	NA	11.9	NA	0.942	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW9014	CYANIDE	--	mg/kg	< 0.96 U	NA	NA	< 0.98 U	NA	< 1.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC.LK	TOTAL ORGANIC CARBON	NA	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
mg/kg = millgram per kilogram
U = not detected above report detection limit
J = estimated value
NA = Not analyzed
all depth units are in feet

Appendix B-2 Barrier Installation and Monitoring Report (CEC, 2020)

Table 2 provides a summary of the soil analytical data from cores collected from XMIP-3 and XMIP-12 (these soils were subsequently used for the Bench Study, discussed in the next Section).

Table 2
Soil Sampling MPS Compounds and PCB Data Summary [mg/kg]
Ciba-Geigy RCRA Closure Project

Compound	XMIP-3 (15-18 feet bgs)	XMIP-12 (9 to 12 feet bgs)
1,2-Dichlorobenzene	3,200	11
2-Chlorotoluene	16	0.13
Chlorobenzene	130	91
Total Xylene	4.5 U	0.85
Toluene	3	0.44
PCB total	980	2.3

bgs – Below Ground Surface
Depth rounded to the nearest foot
U - Analyte not detected at Method Detection Limit (MDL)
All concentrations in milligrams per kilogram (mg/kg)

Of particular importance with respect to PRB design, based on the HPT data and following cores at locations XMIP-3 and XMIP-12, there is an extensive coarse granular layer at 14 to 17 feet bgs[4]. This layer is bounded above and below by fine silty and sandy material. Liquid DNAPL is observed at XMIP-3 at the base of this unit, bound to the west (upland side) by XMIP-21 and 22, to the north (downstream side) by XMIP-4, and the south (upstream side) by XMIP-20. The DNAPL consists primarily of mono- and di-chlorobenzene with PCB present (**Table 2**). It is noted that the composition and magnitude of the VOCs observed at XMIP-03 is remarkably different from that at XMIP-12, where 1,2-DCB and PCB dominate at XMIP-03 and CB dominates at XMIP-12 with marginal PCB.

The XMIP-03 composition and location are consistent with the operation of the former Jet Sump that was housed in Building 16 and was known to have been compromised at some time in the past (AECOM, 2016a). Residual staining extends further than DNAPL indicators, where all recovered

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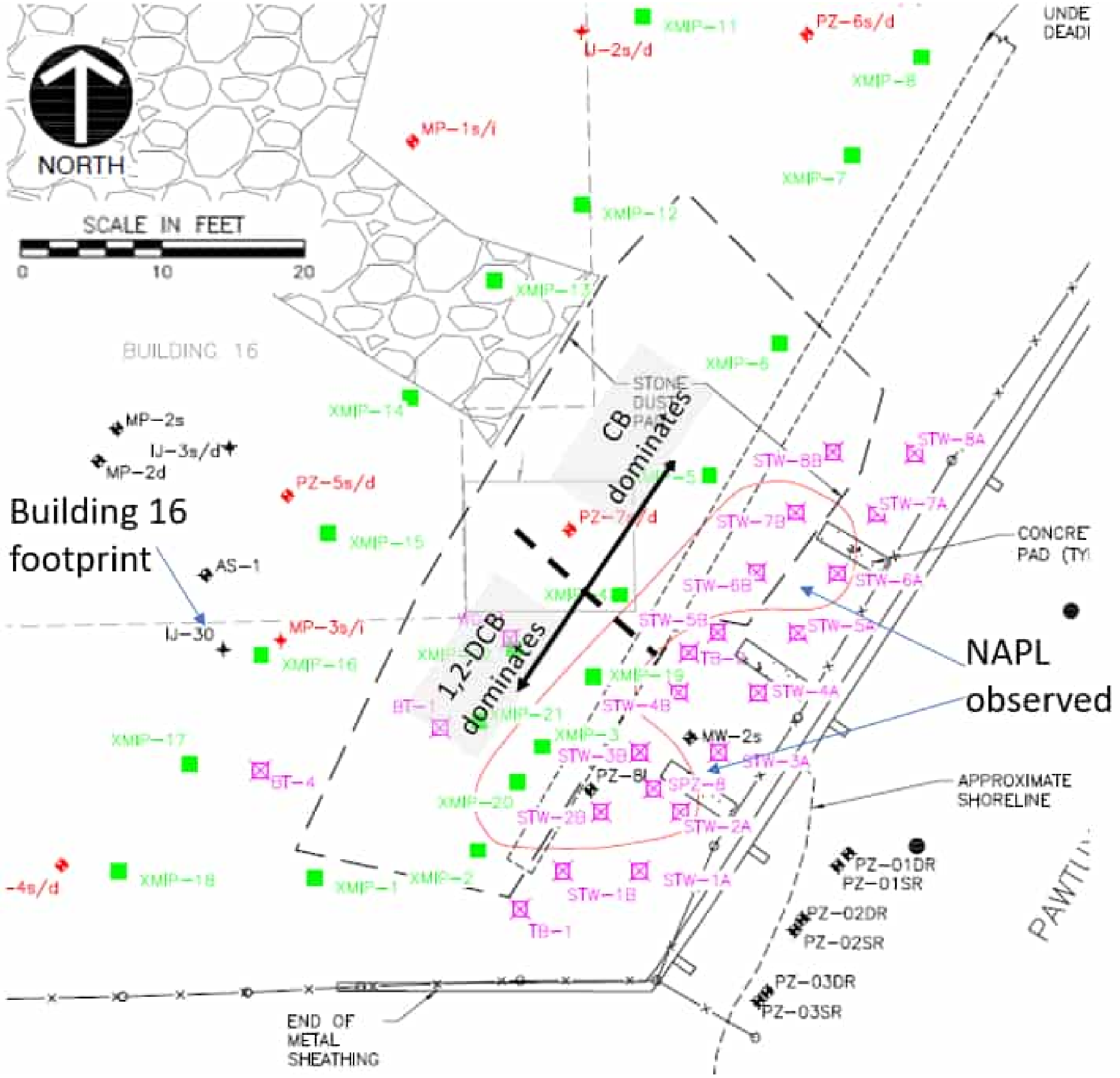
[4] Additional subsurface characterization supporting this statement was subsequently conducted during a focused boring program to support PRB placement downgradient of the MiHpt transects, reported in Section 5.

Figure 5
Extent of NAPL in Soil
Ciba-Geigy RCRA Closure Project



Borings with observed impacts indicative of the presence of NAPL. The measured impact is primarily composed of 1,2-DCB and CB, and the figure provides the spatial transition of the dominant compound. This observation is consistent with the data and interpretation provided in AECOM (2016a) [see also **Figures 6, 7, 8 and 9**].

Table 4
Soil Boring and Soil Sampling Details
Ciba-Geigy RCRA Closure Project

Boring	Depth (Feet bgs)	Sampling Interval (feet bgs)	Analysis
STW-1A	30	15 – 17	VOCs, PCBs
		20 – 25	VOCs
STW-1B	30	15 – 17	VOCs, PCBs
		20 – 25	VOCs
STW-2A	20	None	None
STW-2B	20	None	None
STW-3A	20	15 – 17	VOCs, PCBs
		19 - 20	VOCs
STW-3B	18	None	None
STW-4A	17	16 – 18	VOCs, PCBs
STW-4B	25	15 – 17	VOCs, PCBs
STW-5A	18	14 – 16	VOCs, PCBs
STW-5B	18	14 – 16	VOCs, PCBs
STW-6A	18	14 – 16	VOCs, PCBs
STW-6B	18	None	None
STW-7A	18	14 – 16	VOCs, PCBs
STW-7B	18	None	None
STW-8A	18	14 – 16	VOCs, PCBs
STW-8B	18	None	None
SPZ-8	20	None	None

Note:

VOC Analysis completed using USEPA Method 8260C
PCB Analysis completed using USEPA Method 8082

A total of 13 soil samples were analyzed for VOCs and 10 samples analyzed for PCB Aroclors and the analytical results are provided in **Table 5**.

If DNAPL was observed in the coarse sand target-sampling interval of 14 to 17 feet bgs, a soil sample of the sandy layer was not collected. In addition, the soil boring locations with DNAPL were not extended through the silty layer to prevent potential DNAPL migration. Consistent with previously collected soil data, the primary COCs on a mass basis are 1,2-DCB and CB (both less than 100 mg/kg), and these compounds were co-located with PCB Aroclors.

Table 5

Soil Sampling Analytical Data

Ciba-Geigy RCRA Closure Project

Sample Name	**STW-1A**	**STW-1A**	**STW-1B**	**STW-1B**	**STW-3A**	**STW-3A**
Sample Depth (feet)	**15-17**	**20-25**	**15-17**	**20-25**	**15-17**	**19-20**
Sample Date	**08/30/2019**	**08/30/2019**	**08/30/2019**	**08/30/2019**	**09/03/2019**	**09/03/2019**
PID Reading (ppmv):	**0.9**	**0.0**	**1.4**	**0.0**	**6.9**	**12.1**
Laboratory Sample ID:	**19I0275-01**	**19I0275-02**	**19I0275-03**	**19I0275-04**	**19I0275-05**	**19I0275-06**
VOCs (mg/kg)						
1,2-Dichlorobenzene	**0.0415 J**	**0.0492 J**	**0.245**	**0.0723 J**	**0.100 J**	**12.6**
2-Chlorotoluene	0.159 U	0.182 U	**0.0237 J**	0.185 U	**0.0197 J**	**0.021 J**
Chlorobenzene	**0.872**	0.182 U	**2.43**	**0.386**	**2.39**	**24.4**
Toluene	0.159 U	0.182 U	**0.0947 J**	**0.0334 J**	**0.064 J**	0.175 U
Xylene O	0.159 U	0.182 U	0.158 U	0.185 U	0.164 U	**0.0246 J**
Xylene P,M	0.319 U	0.365 U	**0.0331 J**	0.371 U	0.328 U	0.351 U
Total Xylene	0.319 U	0.365 U	**0.0331 J**	0.371 U	0.328 U	**0.0246 J**
PCBs (mg/kg)						
Aroclor 1016	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1221	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1232	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1242	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1248	0.06 U	-	**1.6**	-	**0.4**	-
Aroclor 1254	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1260	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1262	0.06 U	-	0.06 U	-	0.06 U	-
Aroclor 1268	0.06 U	-	0.06 U	-	0.06 U	-

Notes:

VOCs = volatile organic compounds; PCBs = Polychlorinated biphenyl; PID = photoionization detector, ppmv = parts per million by volume

mg/kg = milligrams per kilograms

Only selected MPS (Media Protection Standards) are reported

U = Analytes below laboratory method detection limits

Total Xylenes = Sum of O, P&M Xylene.

Bold = Detected above the Method Detection Limit (MDL)

J = estimated value below the MDL but above the RL

Table 5

Soil Sampling Analytical Data

Ciba-Geigy RCRA Closure Project

STW-4A	**STW-4B**	**STW-5A**	**STW-5B**	**STW-6A**	**STW-7A**	**STW-8A**
16-18	**15-17**	**14-16**	**14-16**	**14-16**	**14-16**	**14-16**
09/03/2019	**09/03/2019**	**09/03/2019**	**09/03/2019**	**09/03/2019**	**09/04/2019**	**09/04/2019**
23.7	**14.2**	**50.3**	**151**	**10.4**	**NT**	**21.1**
19I0275-09	**19I0275-11**	**19I0275-10**	**19I0275-08**	**19I0275-07**	**19I0275-12**	**19I0275-13**
3.66	**0.286**	**11.1**	**47.2**	**0.535**	**1.88**	**0.422**
0.264	**0.644**	**5.74**	**3.14**	**0.53**	0.115 U	0.130 U
6.68	**11.7**	**61.5**	**83.6**	**24.2**	**2.84**	**2.67**
0.086 J	0.144 U	**0.0445 J**	**0.249**	0.138 U	**0.315**	**0.229**
0.0422 J	**0.0231 J**	**0.164 J**	**0.136 J**	**0.176**	**0.559**	**0.155**
0.0688 J	0.289 U	0.556 U	**0.105 J**	**0.242 J**	**1.06**	**0.307**
0.0688 J	**0.0231 J**	**0.164 J**	**0.241 J**	**0.418 J**	**1.619**	**0.462**
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	**1.8** U	**1.7**	0.06 U
0.6	**3.8**	**0.8**	**203**	0.06	0.05 U	**3.4**
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U
0.06 U	0.06 U	0.07 U	12.60 U	0.06 U	0.05 U	0.06 U

Notes:

VOCs = volatile organic compounds; PCBs = Polychlorinated biphenyl; PID = photoionization detector, ppmv = parts per million by volume

mg/kg = milligrams per kilograms

Only selected MPS (Media Protection Standards) are reported

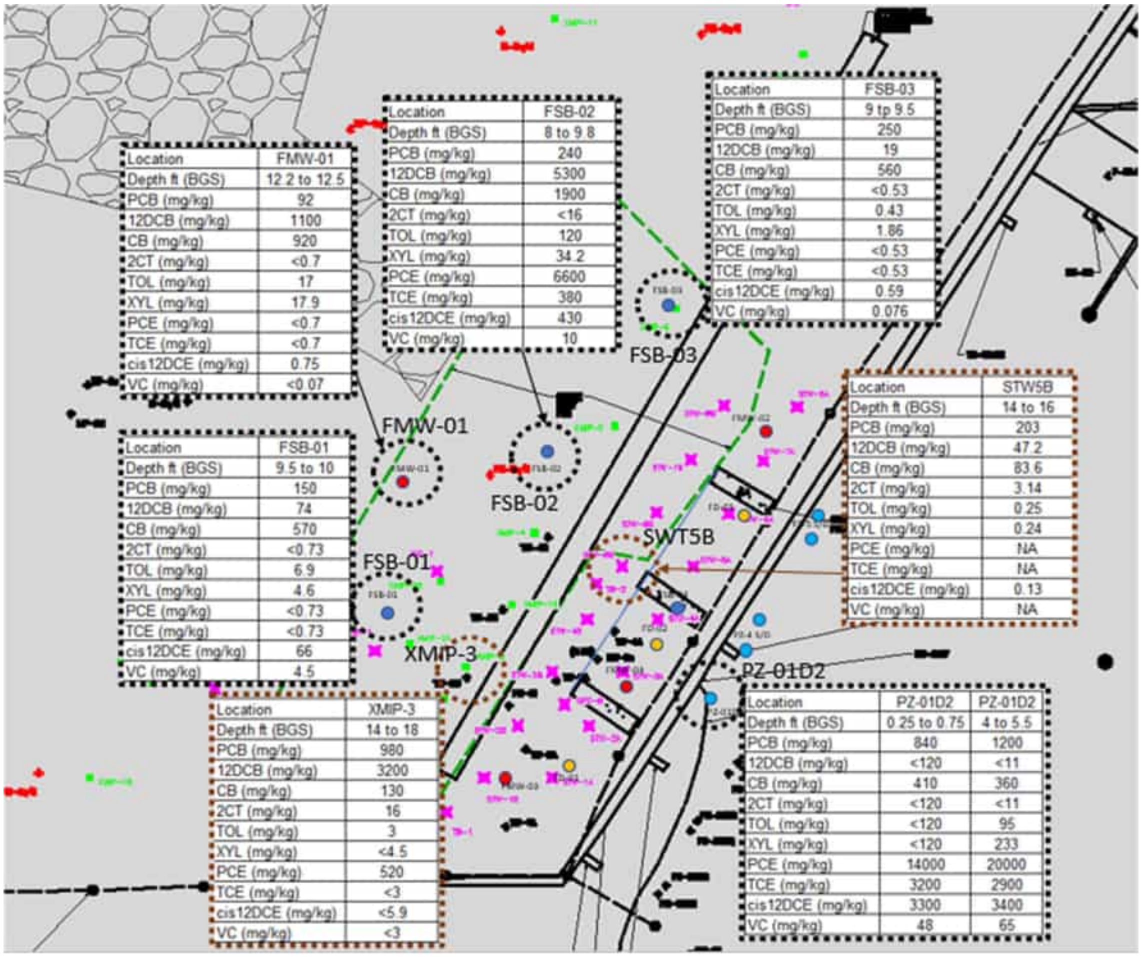
U = Analytes below laboratory method detection limits

Total Xylenes = Sum of O, P&M Xylene.

Bold = Detected above the Method Detection Limit (MDL)

J = estimated value below the MDL but above the RL

Appendix B-3 Supplemental Investigation Report (Fuss & O’Neill, 2023)



Location	FMW-01
Depth ft (BGS)	12.2 to 12.5
PCB (mg/kg)	92
12DCB (mg/kg)	1100
CB (mg/kg)	920
2CT (mg/kg)	<0.7
TOL (mg/kg)	17
XYL (mg/kg)	17.9
PCE (mg/kg)	<0.7
TCE (mg/kg)	<0.7
cis12DCE (mg/kg)	0.75
VC (mg/kg)	<0.07

Location	FSB-02
Depth ft (BGS)	8 to 9.8
PCB (mg/kg)	240
12DCB (mg/kg)	5300
CB (mg/kg)	1900
2CT (mg/kg)	<16
TOL (mg/kg)	120
XYL (mg/kg)	34.2
PCE (mg/kg)	6600
TCE (mg/kg)	380
cis12DCE (mg/kg)	430
VC (mg/kg)	10

Location	FSB-03
Depth ft (BGS)	9 tp 9.5
PCB (mg/kg)	250
12DCB (mg/kg)	19
CB (mg/kg)	560
2CT (mg/kg)	<0.53
TOL (mg/kg)	0.43
XYL (mg/kg)	1.86
PCE (mg/kg)	<0.53
TCE (mg/kg)	<0.53
cis12DCE (mg/kg)	0.59
VC (mg/kg)	0.076

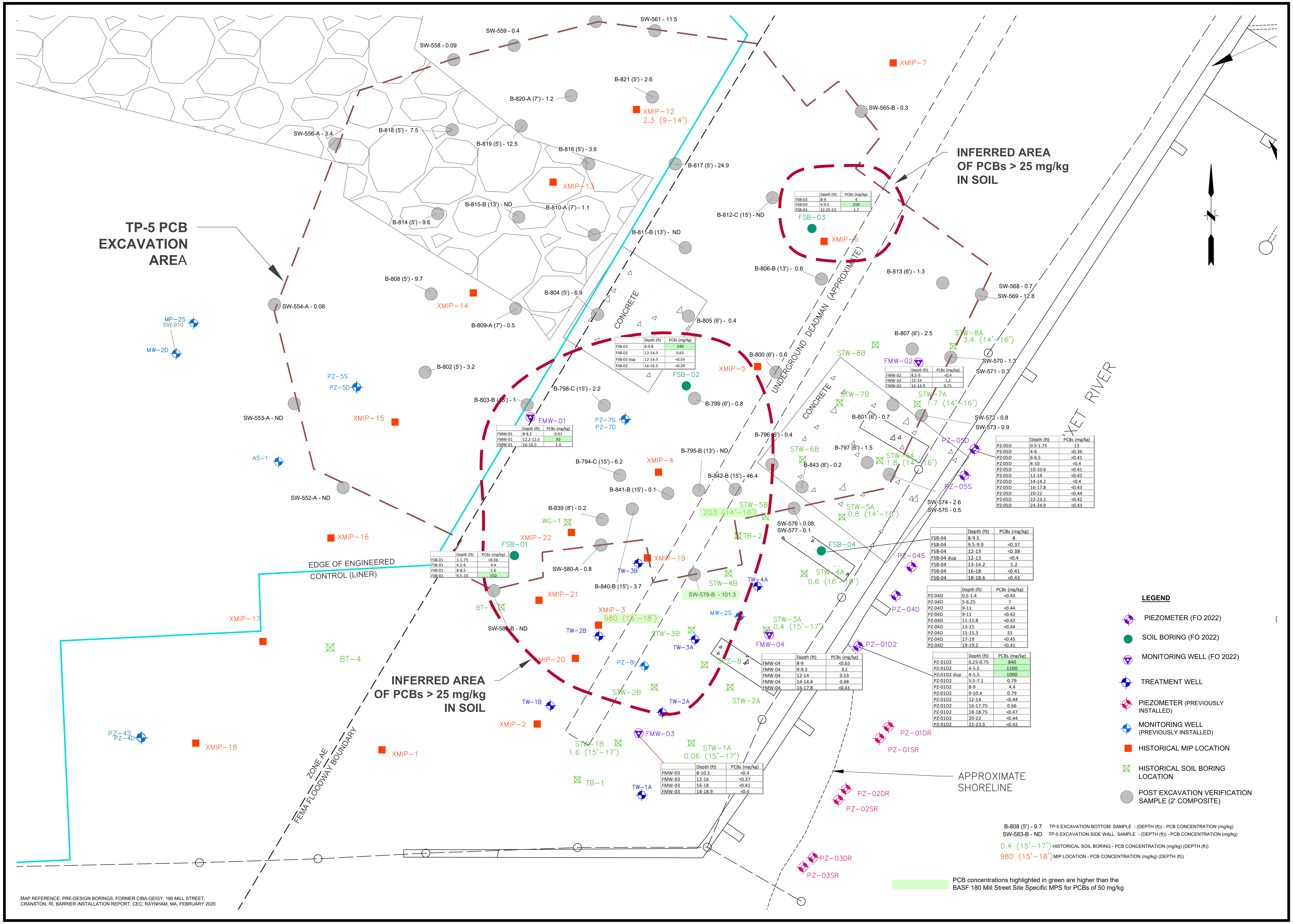
Location	STW5B
Depth ft (BGS)	14 to 16
PCB (mg/kg)	203
12DCB (mg/kg)	47.2
CB (mg/kg)	83.6
2CT (mg/kg)	3.14
TOL (mg/kg)	0.25
XYL (mg/kg)	0.24
PCE (mg/kg)	NA
TCE (mg/kg)	NA
cis12DCE (mg/kg)	0.13
VC (mg/kg)	NA

Location	FSB-01
Depth ft (BGS)	9.5 to 10
PCB (mg/kg)	150
12DCB (mg/kg)	74
CB (mg/kg)	570
2CT (mg/kg)	<0.73
TOL (mg/kg)	6.9
XYL (mg/kg)	4.6
PCE (mg/kg)	<0.73
TCE (mg/kg)	<0.73
cis12DCE (mg/kg)	66
VC (mg/kg)	4.5

Location	XMIP-3
Depth ft (BGS)	14 to 18
PCB (mg/kg)	980
12DCB (mg/kg)	3200
CB (mg/kg)	130
2CT (mg/kg)	16
TOL (mg/kg)	3
XYL (mg/kg)	<4.5
PCE (mg/kg)	520
TCE (mg/kg)	<3
cis12DCE (mg/kg)	<5.9
VC (mg/kg)	<3

Location	PZ-01D2	PZ-01D2
Depth ft (BGS)	0.25 to 0.75	4 to 5.5
PCB (mg/kg)	840	1200
12DCB (mg/kg)	<120	<11
CB (mg/kg)	410	360
2CT (mg/kg)	<120	<11
TOL (mg/kg)	<120	95
XYL (mg/kg)	<120	233
PCE (mg/kg)	14000	20000
TCE (mg/kg)	3200	2900
cis12DCE (mg/kg)	3300	3400
VC (mg/kg)	48	65

Inset Figure G – Locations and depths where elevated PCB levels were detected in soils below the water table during this investigation and during CEC (2020). As shown, elevated PCB levels are collocated with elevated MPS compounds. It is noted that in addition to the MPS compounds detected, elevated PCE levels were also detected in both the upland soil and river sediment.



	Depth (ft)	PCBs (mg/kg)
FSB-03	8-9	4
FSB-03	9-9.5	250
FSB-03	12.25-13	1.7

	Depth (ft)	PCBs (mg/kg)
FSB-02	8-9.8	240
FSB-02	12-14.3	0.65
FSB-02 dup	12-14.3	<0.54
FSB-02	16-16.5	<0.39

	Depth (ft)	PCBs (mg/kg)
FMW-02	8.5-9	<0.4
FMW-02	12-14	1.2
FMW-02	14-14.9	0.75

	Depth (ft)	PCBs (mg/kg)
FMW-01	8-8.2	0.91
FMW-01	12.2-12.5	92
FMW-01	16-16.5	1.4

	Depth (ft)	PCBs (mg/kg)
PZ-05D	0.5-1.75	13
PZ-05D	4-6	<0.36
PZ-05D	6-6.5	<0.41
PZ-05D	8-10	<0.4
PZ-05D	10-10.6	<0.41
PZ-05D	12-14	<0.42
PZ-05D	14-14.2	<0.4
PZ-05D	16-17.8	<0.43
PZ-05D	20-22	<0.44
PZ-05D	22-23.1	<0.42
PZ-05D	24-24.9	<0.43

	Depth (ft)	PCBs (mg/kg)
FSB-04	8-9.5	8
FSB-04	9.5-9.9	<0.37
FSB-04	12-13	<0.38
FSB-04 dup	12-13	<0.4
FSB-04	13-14.2	1.2
FSB-04	16-18	<0.41
FSB-04	18-18.6	<0.43

	Depth (ft)	PCBs (mg/kg)
FSB-01	1-1.75	<0.36
FSB-01	4.2-6	4.4
FSB-01	8-8.5	1.6
FSB-01	9.5-10	150

	Depth (ft)	PCBs (mg/kg)
PZ-04D	0.5-1.4	<0.43
PZ-04D	5-6.25	7
PZ-04D	9-11	<0.44
PZ-04D	9-11	<0.42
PZ-04D	11-11.8	<0.42
PZ-04D	13-15	<0.44
PZ-04D	15-15.3	33
PZ-04D	17-19	<0.45
PZ-04D	19-19.2	<0.41

	Depth (ft)	PCBs (mg/kg)
FMW-04	8-9	<0.63
FMW-04	9-9.3	3.1
FMW-04	12-14	0.53
FMW-04	14-14.4	0.48
FMW-04	16-17.8	<0.41

	Depth (ft)	PCBs (mg/kg)
PZ-01D2	0.25-0.75	840
PZ-01D2	4-5.5	1200
PZ-01D2 dup	4-5.5	1000
PZ-01D2	5.5-7.1	0.79
PZ-01D2	8-9	4.4
PZ-01D2	9-10.4	0.79
PZ-01D2	12-14	<0.44
PZ-01D2	16-17.75	0.66
PZ-01D2	18-18.75	<0.47
PZ-01D2	20-22	<0.44
PZ-01D2	22-23.3	<0.42

	Depth (ft)	PCBs (mg/kg)
FMW-03	8-10.1	<0.4
FMW-03	12-16	<0.37
FMW-03	16-18	<0.41
FMW-03	18-18.9	<0.4

LEGEND

- PIEZOMETER (FO 2022)
- SOIL BORING (FO 2022)
- MONITORING WELL (FO 2022)
- TREATMENT WELL
- PIEZOMETER (PREVIOUSLY INSTALLED)
- MONITORING WELL (PREVIOUSLY INSTALLED)
- HISTORICAL MIP LOCATION
- HISTORICAL SOIL BORING LOCATION
- POST EXCAVATION VERIFICATION SAMPLE (2' COMPOSITE)

B-808 (5') - 9.7 TP-5 EXCAVATION BOTTOM SAMPLE - (DEPTH (ft)) - PCB CONCENTRATION (mg/kg)
SW-583-B - ND TP-5 EXCAVATION SIDE WALL SAMPLE - (DEPTH (ft)) - PCB CONCENTRATION (mg/kg)
0.4 (15'-17') HISTORICAL SOIL BORING - PCB CONCENTRATION (mg/kg) (DEPTH (ft))
980 (15'-18') MIP LOCATION - PCB CONCENTRATION (mg/kg) (DEPTH (ft))

🟩 PCB concentrations highlighted in green are higher than the BASF 180 Mill Street Site Specific MPS for PCBs of 50 mg/kg

MAP REFERENCE: PRE-DESIGN BORINGS, FORMER CIBA-GEIGY, 180 MILL STREET, CRANSTON, RI, BARRIER INSTALLATION REPORT, CEC, RAYNHAM, MA, FEBRUARY 2020

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE:
HORZ.: 1" = 3'
VERT.:
DATUM:
HORZ.:
VERT.:
3 1.5 0 3
GRAPHIC SCALE

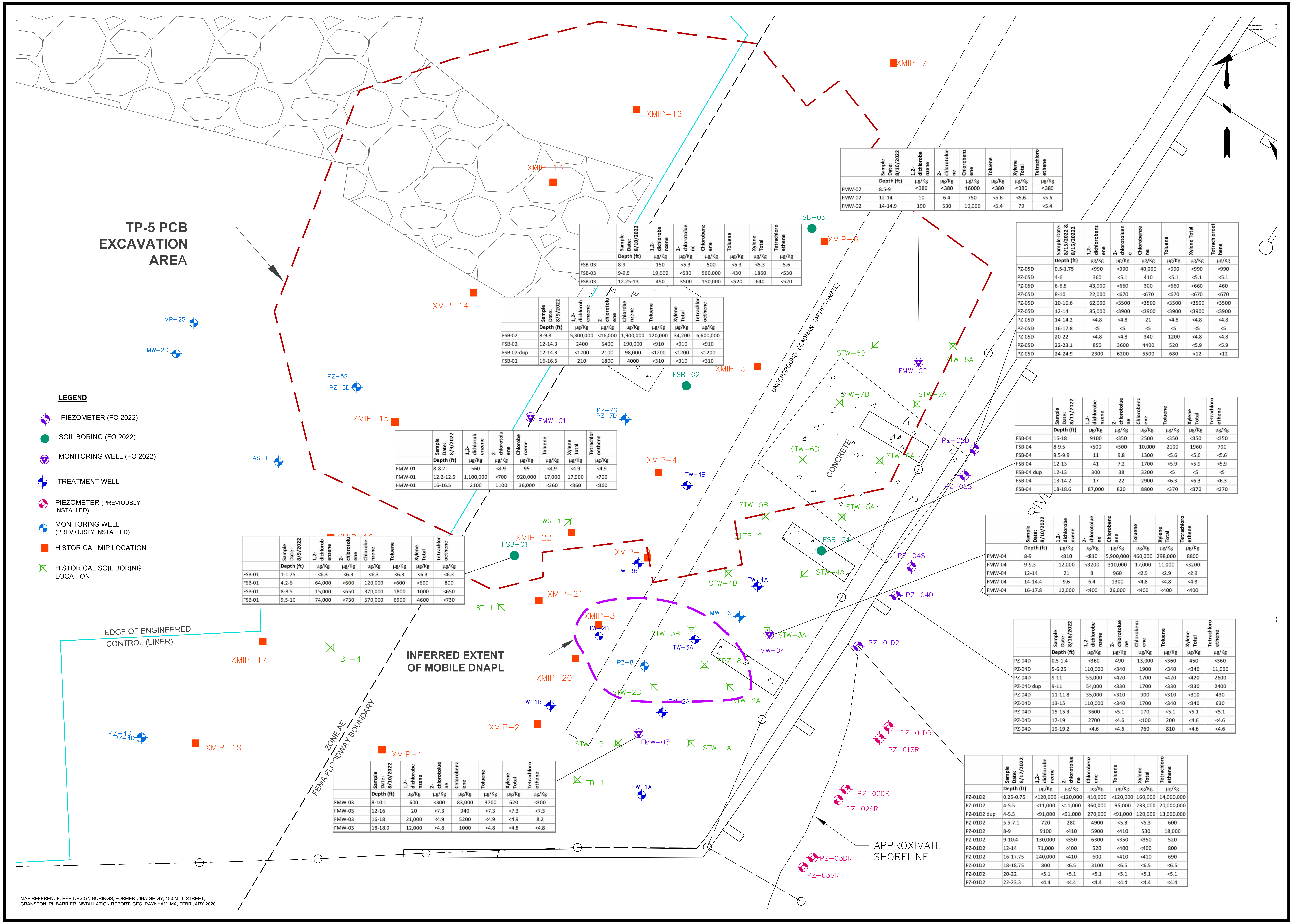
FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

PCB CONCENTRATIONS IN SOIL SAMPLES
180 MILL STREET
CRANSTON CONNECTICUT

PROJ. No.: 20201130.A10
DATE: JANUARY 2023

FIGURE 3

File: J:\DWG\P2020\1130\A10\Environmental\Plan\Figures Set 1-3-2023\20201130A10_SAM01_soil data PCBs rev 1-2023.dwg Layout: LAYOUT1-24X36-L (R-TBLK) Plotted: 2022-12-27 10:45 AM Saved: 2022-12-07 3:24 PM User: SRochelt
MS VIEW: | LAYER STATE: | PC3: AUTOCAD PDF (HIGH QUALITY PRINT).PC3 STB/CTB: FO.STB



	Sample Date: 8/10/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FMW-02	8.5-9	<380	<380	16000	<380	<380	<380
FMW-02	12-14	10	6.4	750	<5.6	<5.6	<5.6
FMW-02	14-14.9	190	530	10,000	<5.4	79	<5.4

	Sample Date: 8/10/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FSB-03	8-9	150	<5.3	500	<5.3	<5.3	5.6
FSB-03	9-9.5	19,000	<530	560,000	430	1860	<530
FSB-03	12.25-13	490	3500	150,000	<520	640	<520

	Sample Date: 8/15/2022 & 8/16/20222	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
PZ-05D	0.5-1.75	<990	<990	40,000	<990	<990	<990
PZ-05D	4-6	360	<5.1	410	<5.1	<5.1	<5.1
PZ-05D	6-6.5	43,000	<660	300	<660	<660	460
PZ-05D	8-10	22,000	<670	<670	<670	<670	<670
PZ-05D	10-10.6	62,000	<3500	<3500	<3500	<3500	<3500
PZ-05D	12-14	85,000	<3900	<3900	<3900	<3900	<3900
PZ-05D	14-14.2	<4.8	<4.8	21	<4.8	<4.8	<4.8
PZ-05D	16-17.8	<5	<5	<5	<5	<5	<5
PZ-05D	20-22	<4.8	<4.8	340	1200	<4.8	<4.8
PZ-05D	22-23.1	850	3600	4400	520	<5.9	<5.9
PZ-05D	24-24.9	2300	6200	5500	680	<12	<12

	Sample Date: 8/9/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FSB-02	8-9.8	5,300,000	<16,000	1,900,000	120,000	34,200	6,600,000
FSB-02	12-14.3	2400	5400	190,000	<910	<910	<910
FSB-02 dup	12-14.3	<1200	2100	98,000	<1200	<1200	<1200
FSB-02	16-16.5	210	1800	4000	<310	<310	<310

	Sample Date: 8/9/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FMW-01	8-8.2	560	<4.9	95	<4.9	<4.9	<4.9
FMW-01	12.2-12.5	1,100,000	<700	920,000	17,000	17,900	<700
FMW-01	16-16.5	2100	1100	36,000	<360	<360	<360

	Sample Date: 8/11/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FSB-04	16-18	9100	<350	2500	<350	<350	<350
FSB-04	8-9.5	<500	<500	10,000	2100	1960	790
FSB-04	9.5-9.9	11	9.8	1300	<5.6	<5.6	<5.6
FSB-04	12-13	41	7.2	1700	<5.9	<5.9	<5.9
FSB-04 dup	12-13	300	38	3200	<5	<5	<5
FSB-04	13-14.2	17	22	2900	<6.3	<6.3	<6.3
FSB-04	18-18.6	87,000	820	8800	<370	<370	<370

	Sample Date: 8/10/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FMW-04	8-9	<810	<810	5,900,000	460,000	298,000	8800
FMW-04	9-9.3	12,000	<3200	310,000	17,000	11,000	<3200
FMW-04	12-14	21	8	960	<2.9	<2.9	<2.9
FMW-04	14-14.4	9.6	6.4	1300	<4.8	<4.8	<4.8
FMW-04	16-17.8	12,000	<400	26,000	<400	<400	<400

	Sample Date: 8/9/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FSB-01	1-1.75	<6.3	<6.3	<6.3	<6.3	<6.3	<6.3
FSB-01	4.2-6	64,000	<600	120,000	<600	<600	800
FSB-01	8-8.5	15,000	<650	370,000	1800	1000	<650
FSB-01	9.5-10	74,000	<730	570,000	6900	4600	<730

	Sample Date: 8/16/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
PZ-04D	0.5-1.4	<360	490	13,000	<360	450	<360
PZ-04D	5-6.25	110,000	<340	1900	<340	<340	11,000
PZ-04D	9-11	53,000	<420	1700	<420	<420	2600
PZ-04D dup	9-11	54,000	<330	1700	<330	<330	2400
PZ-04D	11-11.8	35,000	<310	900	<310	<310	430
PZ-04D	13-15	110,000	<340	1700	<340	<340	630
PZ-04D	15-15.3	3600	<5.1	170	<5.1	<5.1	<5.1
PZ-04D	17-19	2700	<4.6	<100	200	<4.6	<4.6
PZ-04D	19-19.2	<4.6	<4.6	760	810	<4.6	<4.6

	Sample Date: 8/10/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
FMW-03	8-10.1	600	<300	83,000	3700	620	<300
FMW-03	12-16	20	<7.3	940	<7.3	<7.3	<7.3
FMW-03	16-18	21,000	<4.9	5200	<4.9	<4.9	8.2
FMW-03	18-18.9	12,000	<4.8	1000	<4.8	<4.8	<4.8

	Sample Date: 8/17/2022	1,2-dichlorobenzene	2-chlorotoluene	Chlorobenzene	Toluene	Xylene Total	Tetrachloroethene
	Depth (ft)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
PZ-01D2	0.25-0.75	<120,000	<120,000	410,000	<120,000	160,000	14,000,000
PZ-01D2	4-5.5	<11,000	<11,000	360,000	95,000	233,000	20,000,000
PZ-01D2 dup	4-5.5	<91,000	<91,000	270,000	<91,000	120,000	13,000,000
PZ-01D2	5.5-7.1	720	280	4900	<5.3	<5.3	600
PZ-01D2	8-9	9100	<410	5900	<410	530	18,000
PZ-01D2	9-10.4	130,000	<350	6300	<350	<350	520
PZ-01D2	12-14	71,000	<400	520	<400	<400	800
PZ-01D2	16-17.75	240,000	<410	600	<410	<410	690
PZ-01D2	18-18.75	800	<6.5	3100	<6.5	<6.5	<6.5
PZ-01D2	20-22	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1
PZ-01D2	22-23.3	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4

MAP REFERENCE: PRE-DESIGN BORINGS, FORMER CIBA-GEIGY, 180 MILL STREET, CRANSTON, RI, BARRIER INSTALLATION REPORT, CEC, RAYNHAM, MA, FEBRUARY 2020

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE:
HORZ.: 1" = 3'
VERT.:
DATUM:
HORZ.:
VERT.:
3 1.5 0 3
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

VOC CONCENTRATIONS IN SOIL SAMPLES (MPS VOCS & PCE)

180 MILL STREET

CRANSTON CONNECTICUT

PROJ. No.: 20201130.A10
DATE: JANUARY 2023

FIGURE 4

File: J:\DWG\P2020\1130\A10\Environmental\Plan\Figures Set 1-3-2023\20201130A10_SAM01_soil data VOCs7 rev 1-2023.dwg Layout: LAYOUT1-24X36-L (R-TBLK) Plotted: 2022-12-27 2:18 PM Saved: 2022-12-27 2:15 PM User: SRochelt
PC3: AUTOCAD PDF (HIGH QUALITY PRINT).PC3 STB/CTB: FO STB
MS VIEW:
LAYER STATE:

Table 2
Summary of Soil and Sediment Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			FMW-01	FMW-01	FMW-01	FMW-02	FMW-02	FMW-02	FMW-03	FMW-03	FMW-03	FMW-03	FMW-04	FMW-04	FMW-04	FMW-04	FMW-04
Sample_Depth_Range			8-8.2	12.2-12.5	16-16.5	8.5-9	12-14	14-14.9	8-10.1	12-16	16-18	18-18.9	8-9	9-9.3	12-14	14-14.4	16-17.8
Field_ID			1709220809-08	1709220809-09	1709220809-11	1709220810-18	1709220810-19	1709220810-20	1709220810-25	1709220810-26	1709220810-27	1709220810-28	1709220810-33	1709220810-34	1709220810-35	1709220810-36	1709220810-37
Sampled_Date_Time			8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022
Sample_Type			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Matrix_Type			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards															
PCBs_Total																	
Arochlor 1016	µg/Kg	*50000*	<420U	<27,000U	<400U	<400U	<370U	**750**	<400U	<370U	<410U	<400U	<630U	<520U	<390U	<370U	<410U
Arochlor 1248	µg/Kg	*50000*	**910**	**92,000**	**1400**	<400U	**1200**	<410U	<400U	<370U	<410U	<400U	<630U	**3100**	**530**	**480**	<410U
Arochlor 1254	µg/Kg	*50000*	<420U	<27,000U	<400U	<400U	<370U	<410U	<400U	<370U	<410U	<400U	<630U	<520U	<390U	<370U	<410U
VOCs_Total																	
2-Isopropyltoluene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**11,000**	<3200U	<2.9U	<4.8U	<400U
M/P-xylenes	µg/Kg		<4.9U	**12,000**	<360U	<380U	<5.6U	**28**	**370**	<7.3U	<4.9U	<4.8U	**200,000**	**8200**	<2.9U	<4.8U	<400U
1,1-dichloroethene	µg/Kg		<4.9U	<200U	<200U	<200U	<5.6U	<5.4U	<200U	<7.3U	<4.9U	<4.8U	**2000**	<320U	<2.9U	<4.8U	<200U
1,2,3-trichlorobenzene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	<2.9U	<4.8U	<400U
1,2,4-trichlorobenzene	µg/Kg		<4.9U	**1400**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	<2.9U	<4.8U	<400U
1,2,4-trimethylbenzene	µg/Kg		<4.9U	**6600**	<360U	<380U	<5.6U	<5.4U	**240**	**9.4**	<4.9U	<4.8U	**640,000**	**3600**	<2.9U	<4.8U	<400U
1,2-dichlorobenzene	µg/Kg		**560**	**1,100,000**	**2100**	<380U	**10**	**190**	**600**	**20**	**21,000**	**12,000**	<810U	**12,000**	**21**	**9.6**	**12,000**
1,3,5-trimethylbenzene	µg/Kg		<4.9U	**2700**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**330,000**	**1700**	<2.9U	<4.8U	<400U
1,3-dichlorobenzene	µg/Kg		<4.9U	**890**	<360U	<380U	<5.6U	**5.7**	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	<2.9U	<4.8U	<400U
1,4-dichlorobenzene	µg/Kg		<4.9U	**15,000**	**680**	<380U	<5.6U	**25**	<300U	<7.3U	**10**	**200**	<810U	<3200U	<2.9U	<4.8U	**680**
Methyl Ethyl Ketone	µg/Kg		<30U	<4200U	<2200U	<2300U	<34U	**36**	<1800U	<44U	<29U	<29U	<4900U	<19,000U	<17U	<29U	<2400U
2-chlorotoluene	µg/Kg		<4.9U	<700U	**1100**	<380U	**6.4**	**530**	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	**8**	**6.4**	<400U
4-chlorotoluene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	**380**	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	<2.9U	<4.8U	<400U
Benzene	µg/Kg		<4.9U	**830**	**850**	<380U	**9.1**	**890**	<300U	<7.3U	**110**	<4.8U	**8300**	<2500U	**12**	**14**	**170**
Carbon disulfide	µg/Kg		<4.9U	<700U	<360U	<380U	**8.7**	**39**	<300U	**8.2**	<4.9U	<4.8U	**2600**	<3200U	<2.9U	<4.8U	<400U
Chlorobenzene	µg/Kg		**95**	**920,000**	**36,000**	**16,000**	**750**	**10,000**	**83,000**	**940**	**5200**	**1000**	**5,900,000**	**310,000**	**960**	**1300**	**26,000**
cis-1,2-dichloroethene	µg/Kg		**7.6**	**750**	<360U	<380U	<5.6U	<5.4U	<300U	**21**	**90**	<4.8U	**2,100,000**	**210,000**	**12**	<4.8U	**1700**
Dichloromethane	µg/Kg		<9.9U	<1400U	<730U	<7600U	<11U	<11U	<600U	<15U	<9.8U	<9.6U	**3000!**	<6400U	<5.8U	<9.6U	**830!**
Isopropylbenzene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**36,000**	<3200U	<2.9U	<4.8U	<400U
Naphthalene	µg/Kg		<4.9U	**12,000**	<360U	**1600**	<5.6U	<5.4U	**2600**	<7.3U	<4.9U	<4.8U	**170,000**	**10,000**	<2.9U	<4.8U	<400U
n-butylbenzene	µg/Kg		<4.9U	**1300**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**25,000**	<3200U	<2.9U	<4.8U	<400U
n-propylbenzene	µg/Kg		<4.9U	**1800**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**81,000**	<3200U	<2.9U	<4.8U	<400U
p-isopropyltoluene	µg/Kg		<4.9U	**12,000**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**37,000**	<3200U	<2.9U	<4.8U	<400U
sec-butylbenzene	µg/Kg		<4.9U	**890**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**32,000**	<3200U	<2.9U	<4.8U	<400U
Trichloroethene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	**8.5**	<4.8U	**12,000**	<3200U	<2.9U	<4.8U	<400U
tert-butylbenzene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**5400**	<3200U	<2.9U	<4.8U	<400U
Tetrachloroethene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	**8.2**	<4.8U	**8800**	<3200U	<2.9U	<4.8U	<400U
Toluene	µg/Kg		<4.9U	**17,000**	<360U	<380U	<5.6U	<5.4U	**3700**	<7.3U	<4.9U	<4.8U	**460,000**	**17,000**	<2.9U	<4.8U	<400U
Ethylbenzene	µg/Kg		<4.9U	**2400**	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	<810U	<3200U	<2.9U	<4.8U	<400U
trans-1,2-dichloroethene	µg/Kg		<4.9U	<700U	<360U	<380U	<5.6U	<5.4U	<300U	<7.3U	<4.9U	<4.8U	**17,000**	**1900**	<2.9U	<4.8U	<400U
Vinyl chloride	µg/Kg		<4.9U	<70U	<36U	<38U	<5.6U	<5.4U	<30U	**12**	<4.9U	<4.8U	**17,000**	**11,000**	<2.9U	<4.8U	**140**
Xylene (o)	µg/Kg		<4.9U	**5900**	<360U	<380U	<5.6U	**51**	**250**	<7.3U	<4.9U	<4.8U	**98,000**	**2800**	<2.9U	<4.8U	<400U
Xylene Total	µg/Kg		<4.9U	**17,900**	<360U	<380U	<5.6U	**79**	**620**	<7.3U	<4.9U	<4.8U	**298,000**	**11,000**	<2.9U	<4.8U	<400U

Notes:

Field_D = Field Duplicate   Trip_B -= Trip Blank

- = not analyzed

Units: ug=micrograms, mg=milligrams, Kg=kilograms

Blank cell = no established criteria

< = constituent not detected at the specified laboratory reporting limit

! = Laboratory solvent contamination is possible

Detected parameters in bold. Exceedances above criteria are highlighted.

Table 2
Summary of Soil and Sediment Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			FSB-01	FSB-01	FSB-01	FSB-01	FSB-02	FSB-02	FSB-02	FSB-02	FSB-03	FSB-03	FSB-03	FSB-04	FSB-04	FSB-04	FSB-04
Sample_Depth_Range			1-1.75	4.2-6	8-8.5	9.5-10	8-9.8	12-14.3	12-14.3	16-16.5	8-9	9-9.5	12.25-13	8-9.5	9.5-9.9	12-13	12-13
Field_ID			1709220809-03	1709220809-04	1709220809-05	1709220809-06	1709220809-12	1709220809-13	1709220809-14	1709220809-15	1709220810-10	1709220810-16	1709220810-17	1709220811-43	1709220811-44	1709220811-45	1709220811-46
Sampled_Date_Time			8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/10/2022	8/10/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022
Sample_Type			Normal	Normal	Normal	Normal	Normal	Normal	Field_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Field_D
Matrix_Type			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards															
PCBs_Total																	
Arochlor 1016	µg/Kg	*50000*	<360U	<480U	<490U	<13,000U	<58,000U	<560U	<540U	<390U	<360U	<49,000U	<490U	<2200U	<370U	<380U	<400U
Arochlor 1248	µg/Kg	*50000*	<360U	**4400**	**1600**	**150,000**	**240,000**	**650**	<540U	<390U	**4000**	**250,000**	**1700**	<2200U	<370U	<380U	<400U
Arochlor 1254	µg/Kg	*50000*	<360U	<480U	<490U	<13,000U	<58,000U	<560U	<540U	<390U	<360U	<49,000U	<490U	**8000**	<370U	<380U	<400U
VOCs_Total																	
2-Isopropyltoluene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	<5U
M/P-xylenes	µg/Kg		<6.3U	<600U	**1000**	**3300**	**25,000**	<910U	<1200U	<310U	<5.3U	**1400**	**370**	**1100**	<5.6U	<5.9U	<5U
1,1-dichloroethene	µg/Kg		<6.3U	<200U	<200U	<200U	<1600U	<200U	<200U	<200U	<5.3U	<200U	<200U	<200U	<5.6U	<5.9U	<5U
1,2,3-trichlorobenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	<5U
1,2,4-trichlorobenzene	µg/Kg		<6.3U	<600U	<650U	<730U	**15,000**	<910U	<1200U	<310U	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	<5U
1,2,4-trimethylbenzene	µg/Kg		<6.3U	**1500**	**2500**	**850**	<16,000U	<910U	<1200U	<310U	<5.3U	**1600**	<520U	**11,000**	<5.6U	<5.9U	<5U
1,2-dichlorobenzene	µg/Kg		<6.3U	**64,000**	**15,000**	**74,000**	**5,300,000**	**2400**	<1200U	**210**	**150**	**19,000**	**490**	<500U	**11**	**41**	**300**
1,3,5-trimethylbenzene	µg/Kg		<6.3U	<600U	**930**	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	**680**	<520U	**2000**	<5.6U	<5.9U	<5U
1,3-dichlorobenzene	µg/Kg		<6.3U	<600U	<650U	**830**	<16,000U	<910U	<1200U	<310U	<5.3U	**280**	<520U	<500U	<5.6U	<5.9U	<5U
1,4-dichlorobenzene	µg/Kg		<6.3U	**3400**	**7300**	**11,000**	**50,000**	**4600**	**3100**	<310U	**10**	**14,000**	**440**	<500U	<5.6U	<5.9U	**17**
Methyl Ethyl Ketone	µg/Kg		<38U	<3600U	<3900U	<4400U	<97,000U	<5400U	<7400U	<1900U	<32U	<3200U	<3100U	<3000U	<33U	<36U	**40**
2-chlorotoluene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	**5400**	**2100**	**1800**	<5.3U	<530U	**3500**	<500U	**9.8**	**7.2**	**38**
4-chlorotoluene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	**260**	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	**8**
Benzene	µg/Kg		<6.3U	<600U	<650U	<730U	**2500**	**3200**	**1300**	**470**	**7**	**1100**	**2700**	**260**	**6.3**	**13**	**45**
Carbon disulfide	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	**4100**	<5.6U	**8.7**	**27**
Chlorobenzene	µg/Kg		<6.3U	**120,000**	**370,000**	**570,000**	**1,900,000**	**190,000**	**98,000**	**4000**	**500**	**560,000**	**150,000**	**10,000**	**1300**	**1700**	**3200**
cis-1,2-dichloroethene	µg/Kg		<6.3U	**970**	**4600**	**66,000**	**430,000**	<910U	<1200U	<310U	**25**	**590**	<520U	**210,000**	<5.6U	<5.9U	<5U
Dichloromethane	µg/Kg		<13U	<1200U	<1300U	<1500U	<32,000U	<1800U	<2500U	<620U	<11U	<1100U	<1000U	<1000U	<11U	<12U	<10U
Isopropylbenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	**470**	<5.6U	<5.9U	<5U
Naphthalene	µg/Kg		<6.3U	<600U	**2600**	**1500**	**7300**	<910U	<1200U	<310U	<5.3U	**3100**	<520U	**3700**	<5.6U	<5.9U	<5U
n-butylbenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	<5U
n-propylbenzene	µg/Kg		<6.3U	**720**	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	**280**	<520U	**430**	<5.6U	<5.9U	<5U
p-isopropyltoluene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	**450**	<520U	**630**	<5.6U	<5.9U	<5U
sec-butylbenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	**310**	<5.6U	<5.9U	<5U
Trichloroethene	µg/Kg		<6.3U	<600U	<650U	<730U	**380,000**	<910U	<1200U	<310U	**8.7**	<530U	<520U	<500U	<5.6U	<5.9U	<5U
tert-butylbenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	<500U	<5.6U	<5.9U	<5U
Tetrachloroethene	µg/Kg		<6.3U	**800**	<650U	<730U	**6,600,000**	<910U	<1200U	<310U	**5.6**	<530U	<520U	**790**	<5.6U	<5.9U	<5U
Toluene	µg/Kg		<6.3U	<600U	**1800**	**6900**	**120,000**	<910U	<1200U	<310U	<5.3U	**430**	<520U	**2100**	<5.6U	<5.9U	<5U
Ethylbenzene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	**480**	<520U	**210**	<5.6U	<5.9U	<5U
trans-1,2-dichloroethene	µg/Kg		<6.3U	<600U	<650U	<730U	<16,000U	<910U	<1200U	<310U	<5.3U	<530U	<520U	**1300**	<5.6U	<5.9U	<5U
Vinyl chloride	µg/Kg		<6.3U	**470**	**1900**	**4500**	**10,000**	<91U	<120U	<31U	<5.3U	**76**	<52U	**7800**	<5.6U	<5.9U	<5U
Xylene (o)	µg/Kg		<6.3U	<600U	<650U	**1300**	**9200**	<910U	<1200U	<310U	<5.3U	**460**	**270**	**860**	<5.6U	<5.9U	<5U
Xylene Total	µg/Kg		<6.3U	<600U	**1000**	**4600**	**34,200**	<910U	<1200U	<310U	<5.3U	**1860**	**640**	**1960**	<5.6U	<5.9U	<5U

Notes:

Field_D = Field Duplicate Trip_B -= Trip Blank

- = not analyzed

Units: ug=micrograms, mg=milligrams, Kg=kilograms

Blank cell = no established criteria

< = constituent not detected at the specified laboratory reporting

! = Laboratory solvent contamination is possible

Detected parameters in bold. Exceedances above criteria are highl

Table 2
Summary of Soil and Sediment Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			FSB-04	FSB-04	FSB-04	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-01D2	PZ-04D
Sample_Depth_Range			13-14.2	16-18	18-18.6	0.25-0.75	4-5.5	4-5.5	5.5-7.1	8-9	9-10.4	12-14	16-17.75	18-18.75	20-22	22-23.3	0.5-1.4
Field_ID			1709220811-47	1709220811-40	1709220811-48	1709220817-75	1709220817-76	1709220817-77	1709220817-78	1709220817-79	1709220817-80	1709220817-81	1709220817-82	1709220817-83	1709220817-84	1709220817-85	1709220816-64
Sampled_Date_Time			8/11/2022	8/11/2022	8/11/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/17/2022	8/16/2022
Sample_Type			Normal	Normal	Normal	Normal	Normal	Field_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Matrix_Type			Soil	Soil	Soil	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards															
PCBs_Total																	
Arochlor 1016	µg/Kg	*50000*	**1200**	<410U	<430U	<550,000U	<280,000U	<270,000U	<350U	<2000U	<420U	<440U	<440U	<470U	<440U	<420U	<430U
Arochlor 1248	µg/Kg	*50000*	<450U	<410U	<430U	**840,000**	**1,200,000**	**1,000,000**	**790**	**4400**	**790**	<440U	**660**	<470U	<440U	<420U	<430U
Arochlor 1254	µg/Kg	*50000*	<450U	<410U	<430U	<550,000U	<280,000U	<270,000U	<350U	<2000U	<420U	<440U	<440U	<470U	<440U	<420U	<430U
VOCs_Total																	
2-Isopropyltoluene	µg/Kg		<6.3U	<350U	<370U	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
M/P-xylenes	µg/Kg		<6.3U	<350U	<370U	**160,000**	**150,000**	**120,000**	<5.3U	**530**	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**450**
1,1-dichloroethene	µg/Kg		<6.3U	<200U	<200U	<12,000U	**2000**	<9100U	<5.3U	<200U	<200U	<200U	<200U	<6.5U	<5.1U	<4.4U	<200U
1,2,3-trichlorobenzene	µg/Kg		<6.3U	<350U	<370U	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	**500**	<6.5U	<5.1U	<4.4U	<360U
1,2,4-trichlorobenzene	µg/Kg		<6.3U	<350U	**1100**	<96,000U	<11,000U	<91,000U	<5.3U	<410U	**340**	<400U	**4900**	<6.5U	<5.1U	<4.4U	<360U
1,2,4-trimethylbenzene	µg/Kg		<6.3U	<350U	<370U	**410,000**	**160,000**	**300,000**	**7.6**	**1800**	<350U	<400U	**280**	<6.5U	<5.1U	<4.4U	**1100**
1,2-dichlorobenzene	µg/Kg		**17**	**9100**	**87,000**	<120,000U	<11,000U	<91,000U	**720**	**9100**	**130,000**	**71,000**	**240,000**	**800**	<5.1U	<4.4U	<360U
1,3,5-trimethylbenzene	µg/Kg		<6.3U	<350U	<370U	**190,000**	**200,000**	**150,000**	<5.3U	**1000**	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**650**
1,3-dichlorobenzene	µg/Kg		<6.3U	<350U	**420**	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
1,4-dichlorobenzene	µg/Kg		<6.3U	**230**	**960**	<27,000U	<11,000U	<27,000U	<5.3U	<410U	**900**	**720**	**1600**	<6.5U	<5.1U	<4.4U	<360U
Methyl Ethyl Ketone	µg/Kg		<38U	<2100U	<2200U	<740,000U	<65,000U	<540,000U	<32U	<2400U	<2100U	<2400U	<2500U	<39U	<31U	<26U	<2100U
2-chlorotoluene	µg/Kg		**22**	<350U	**820**	<120,000U	<11,000U	<91,000U	**280**	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**490**
4-chlorotoluene	µg/Kg		<6.3U	<350U	<370U	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Benzene	µg/Kg		**24**	<350U	<370U	<12,000U	**7200**	<9100U	**46**	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**480**
Carbon disulfide	µg/Kg		**7.2**	<350U	<370U	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Chlorobenzene	µg/Kg		**2900**	**2500**	**8800**	**410,000**	**360,000**	**270,000**	**4900**	**5900**	**6300**	**520**	**600**	**3100**	<5.1U	<4.4U	**13,000**
cis-1,2-dichloroethene	µg/Kg		<6.3U	<350U	<370U	**3,300,000**	**3,400,000**	**1,600,000**	<5.3U	**2700**	**1900**	**650**	<410U	<6.5U	<5.1U	<4.4U	<360U
Dichloromethane	µg/Kg		<13U	<710U	<740U	<49,000U	<22,000U	<91,000U	<11U	<810U	<710U	<810U	<820U	<13U	<10U	<8.8U	<710U
Isopropylbenzene	µg/Kg		<6.3U	<350U	<370U	<27,000U	**21,000**	<27,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Naphthalene	µg/Kg		<6.3U	<350U	<370U	**170,000**	**200,000**	**87,000**	**810**	**410**	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**540**
n-butylbenzene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**14,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
n-propylbenzene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**46,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
p-isopropyltoluene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**20,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
sec-butylbenzene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**16,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Trichloroethene	µg/Kg		<6.3U	<350U	<370U	**3,200,000**	**2,900,000**	**1,800,000**	**5.3**	**2300**	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
tert-butylbenzene	µg/Kg		<6.3U	<350U	<370U	<120,000U	<11,000U	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Tetrachloroethene	µg/Kg		<6.3U	<350U	<370U	**14,000,000**	**20,000,000**	**13,000,000**	**600**	**18,000**	**520**	**800**	**690**	<6.5U	<5.1U	<4.4U	<360U
Toluene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**95,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Ethylbenzene	µg/Kg		<6.3U	<350U	<370U	<71,000U	**16,000**	<71,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
trans-1,2-dichloroethene	µg/Kg		<6.3U	<350U	<370U	<120,000U	**28,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Vinyl chloride	µg/Kg		<6.3U	<35U	<37U	**48,000**	**65,000**	**38,000**	<5.3U	**96**	<35U	<40U	<41U	<6.5U	**1400**	**350**	<36U
Xylene (o)	µg/Kg		<6.3U	<350U	<370U	<120,000U	**83,000**	<91,000U	<5.3U	<410U	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	<360U
Xylene Total	µg/Kg		<6.3U	<350U	<370U	**160,000**	**233,000**	**120,000**	<5.3U	**530**	<350U	<400U	<410U	<6.5U	<5.1U	<4.4U	**450**

Notes:

Field_D = Field Duplicate　　Trip_B -= Trip Blank

- = not analyzed

Units: ug=micrograms, mg=milligrams, Kg=kilograms

Blank cell = no established criteria

< = constituent not detected at the specified laboratory reporting

! = Laboratory solvent contamination is possible

Detected parameters in bold. Exceedances above criteria are highl

Table 2
Summary of Soil and Sediment Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

Location_Code			PZ-04D	PZ-04D	PZ-04D	PZ-04D	PZ-04D	PZ-04D	PZ-04D	PZ-04D	PZ-05D	PZ-05D	PZ-05D	PZ-05D	PZ-05D	PZ-05D	PZ-05D
Sample_Depth_Range			5-6.25	9-11	9-11	11-11.8	13-15	15-15.3	17-19	19-19.2	0.5-1.75	4-6	6-6.5	8-10	10-10.6	12-14	14-14.2
Field_ID			1709220816-65	1709220816-66	1709220816-67	1709220816-68	1709220816-69	1709220816-70	1709220816-71	1709220816-72	1709220815-51	1709220815-52	1709220815-53	1709220815-54	1709220815-55	1709220815-56	1709220815-57
Sampled_Date_Time			8/16/2022	8/16/2022	8/16/2022	8/16/2022	8/16/2022	8/16/2022	8/16/2022	8/16/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022
Sample_Type			Normal	Normal	Field_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Matrix_Type			Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards															
PCBs_Total																	
Arochlor 1016	µg/Kg	*50000*	<1000U	<440U	<420U	<420U	<440U	<1000U	<450U	<410U	<1000U	<360U	<410U	<400U	<410U	<420U	<400U
Arochlor 1248	µg/Kg	*50000*	**7000**	<440U	<420U	<420U	<440U	**33,000**	<450U	<410U	<1000	<360U	<410U	<400U	<410U	<420U	<400U
Arochlor 1254	µg/Kg	*50000*	<1000U	<440U	<420U	<420U	<440U	<1000U	<450U	<410U	**13,000**	<360U	<410U	<400U	<410U	<420U	<400U
VOCs_Total																	
2-Isopropyltoluene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
M/P-xylenes	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,1-dichloroethene	µg/Kg		<200U	<200U	<200U	<200U	<200U	<5.1U	<4.6U	<4.6U	<200U	<5.1U	<200U	<200U	<350U	<390U	<4.8U
1,2,3-trichlorobenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,2,4-trichlorobenzene	µg/Kg		**730**	<420U	<330U	<310U	<340U	**10**	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,2,4-trimethylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	**430**	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,2-dichlorobenzene	µg/Kg		**110,000**	**53,000**	**54,000**	**35,000**	**110,000**	**3600**	**2700**	<4.6U	<990U	**360**	**43,000**	**22,000**	**62,000**	**85,000**	<4.8U
1,3,5-trimethylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,3-dichlorobenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
1,4-dichlorobenzene	µg/Kg		**660**	<420U	<330U	<310U	**720**	<5.1U	<4.6U	<4.6U	<990U	<5.1U	**390**	<670U	<3500U	<3900U	<4.8U
Methyl Ethyl Ketone	µg/Kg		<2000U	<2500U	<2000U	<1900U	<2000U	<31U	<28U	<28U	<5900U	<30U	<3900U	<4000U	<21,000U	<23,000U	<29U
2-chlorotoluene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
4-chlorotoluene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Benzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	**680**	**9.5**	<660U	<670U	<2500U	<2500U	**410**
Carbon disulfide	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Chlorobenzene	µg/Kg		**1900**	**1700**	**1700**	**900**	**1700**	**170**	<100U	**760**	**40,000**	**410**	**300**	<670U	<3500U	<3900U	**21**
cis-1,2-dichloroethene	µg/Kg		<340U	**720**	**630**	<310U	**350**	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Dichloromethane	µg/Kg		<680U	<830U	<660U	<630U	<680U	<10U	<9.2U	<9.2U	**2600!**	<10U	**1800!**	**1800!**	**9500!**	**9900!**	<9.5U
Isopropylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Naphthalene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	**990**	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
n-butylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
n-propylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
p-isopropyltoluene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
sec-butylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Trichloroethene	µg/Kg		**730**	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
tert-butylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Tetrachloroethene	µg/Kg		**11,000**	**2600**	**2400**	**430**	**630**	<5.1U	<4.6U	<4.6U	<990U	<5.1U	**460**	<670U	<3500U	<3900U	<4.8U
Toluene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	**200**	**810**	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Ethylbenzene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
trans-1,2-dichloroethene	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Vinyl chloride	µg/Kg		<34U	<42U	<33U	<31U	<34U	<5.1U	**190**	**14**	<99U	<5.1U	<66U	<67U	<350U	<390U	<4.8U
Xylene (o)	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U
Xylene Total	µg/Kg		<340U	<420U	<330U	<310U	<340U	<5.1U	<4.6U	<4.6U	<990U	<5.1U	<660U	<670U	<3500U	<3900U	<4.8U

Notes:

Field_D = Field Duplicate   Trip_B -= Trip Blank

- = not analyzed

Units: ug=micrograms, mg=milligrams, Kg=kilograms

Blank cell = no established criteria

< = constituent not detected at the specified laboratory reporting

! = Laboratory solvent contamination is possible

Detected parameters in bold. Exceedances above criteria are highl

Table 2
Summary of Soil and Sediment Analytical Results
Jet Sump Supplemental Investigations
BASF
Cranston, Rhode Island

		Location_Code	PZ-05D	PZ-05D	PZ-05D	PZ-05D
		Sample_Depth_Range	16-17.8	20-22	22-23.1	24-24.9
		Field_ID	1709220815-58	1709220816-61	1709220816-62	1709220816-63
		Sampled_Date_Time	8/15/2022	8/16/2022	8/16/2022	8/16/2022
		Sample_Type	Normal	Normal	Normal	Normal
		Matrix_Type	Sediment	Sediment	Sediment	Sediment
ChemName	**output unit**	180 Mill St. FPA Media Protection Standards				
PCBs_Total						
Arochlor 1016	µg/Kg	*50000*	<430U	<440U	<420U	<430U
Arochlor 1248	µg/Kg	*50000*	<430U	<440U	<420U	<430U
Arochlor 1254	µg/Kg	*50000*	<430U	<440U	<420U	<430U
VOCs_Total						
2-Isopropyltoluene	µg/Kg		<5U	<4.8U	<5.9U	<12U
M/P-xylenes	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,1-dichloroethene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,2,3-trichlorobenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,2,4-trichlorobenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,2,4-trimethylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,2-dichlorobenzene	µg/Kg		<5U	<4.8U	**850**	**2300**
1,3,5-trimethylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,3-dichlorobenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
1,4-dichlorobenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Methyl Ethyl Ketone	µg/Kg		<30U	<29U	<35U	<70U
2-chlorotoluene	µg/Kg		<5U	<4.8U	**3600**	**6200**
4-chlorotoluene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Benzene	µg/Kg		<5U	**5.4**	<5.9U	<12U
Carbon disulfide	µg/Kg		<5U	<4.8U	<5.9U	<12U
Chlorobenzene	µg/Kg		<5U	**340**	**4400**	**5500**
cis-1,2-dichloroethene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Dichloromethane	µg/Kg		<10U	<9.6U	<12U	<23U
Isopropylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Naphthalene	µg/Kg		<5U	<4.8U	<5.9U	<12U
n-butylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
n-propylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
p-isopropyltoluene	µg/Kg		<5U	<4.8U	<5.9U	<12U
sec-butylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Trichloroethene	µg/Kg		<5U	<4.8U	<5.9U	<12U
tert-butylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Tetrachloroethene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Toluene	µg/Kg		<5U	**1200**	**520**	**680**
Ethylbenzene	µg/Kg		<5U	<4.8U	<5.9U	<12U
trans-1,2-dichloroethene	µg/Kg		<5U	<4.8U	<5.9U	<12U
Vinyl chloride	µg/Kg		**110**	**210**	<5.9U	**45**
Xylene (o)	µg/Kg		<5U	<4.8U	<5.9U	<12U
Xylene Total	µg/Kg		<5U	<4.8U	<5.9U	<12U

Notes:

Field_D = Field Duplicate   Trip_B -= Trip Blank

\- = not analyzed

Units: ug=micrograms, mg=milligrams, Kg=kilograms

Blank cell = no established criteria

< = constituent not detected at the specified laboratory reporting

! = Laboratory solvent contamination is possible

Detected parameters in bold. Exceedances above criteria are highl

Appendix C Soil Cover Plans

PROJECT
BASF FORMER CIBA-GEIGY FACILITY
180 MILL STREET
CRANSTON, RHODE ISLAND

BASF
We create chemistry

AEI Consultants

CLIENT
AEI CONSULTANTS
112 WATER STREET, 5TH FLOOR
BOSTON, MA 02109

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

DRAWING TITLE
AS BUILT FINAL RESTORATION / LANDSCAPE PLAN

NO.	DATE	REVISIONS	BY

PROJECT NO.:

DATE: NOVEMBER 2019

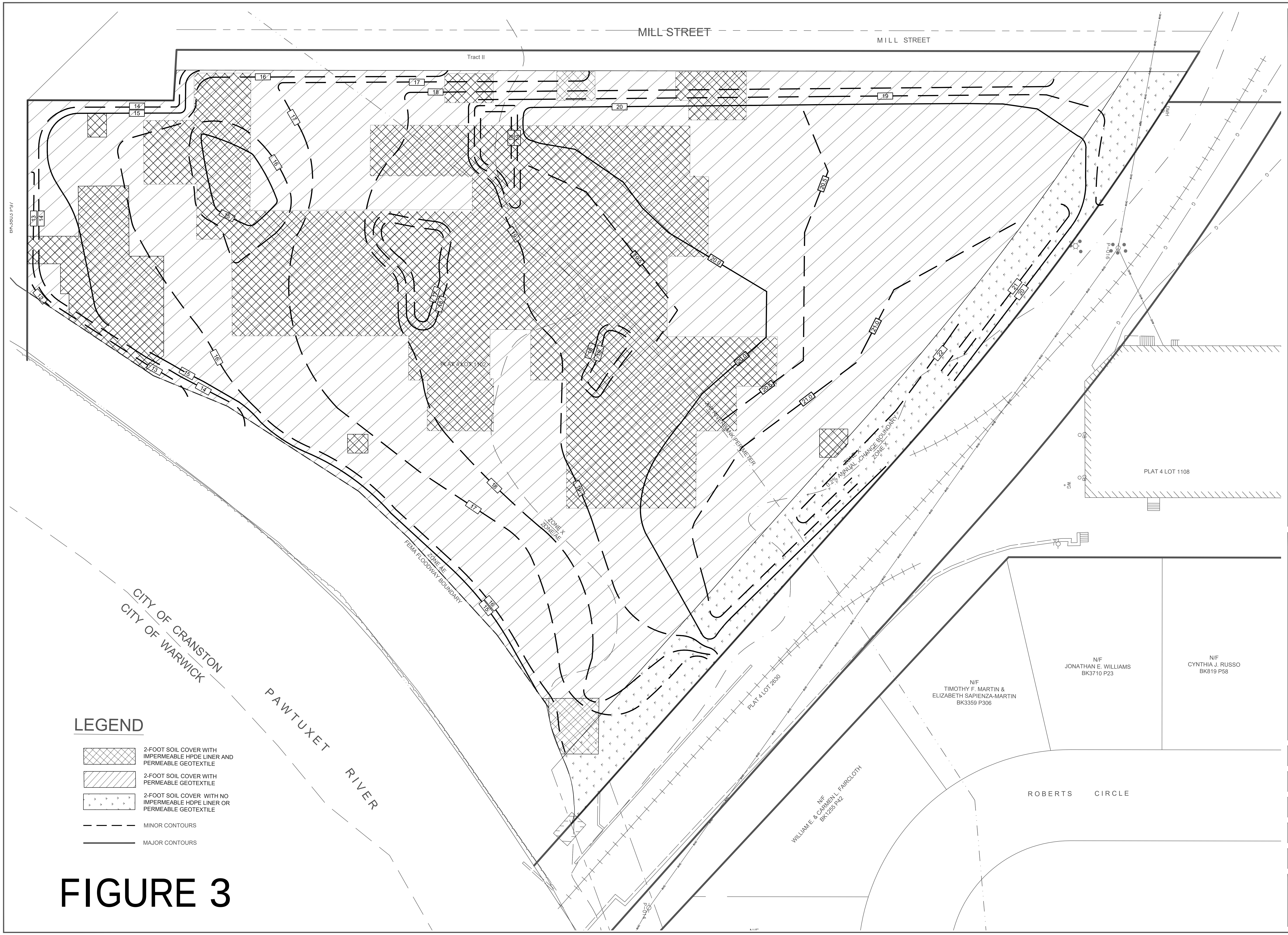
SCALE: 1" = 20'

DRAWN BY:

CHECKED BY:

DRAWING NUMBER
13

SHEET OF



LEGEND

▩ 2-FOOT SOIL COVER WITH IMPERMEABLE HDPE LINER AND PERMEABLE GEOTEXTILE

▨ 2-FOOT SOIL COVER WITH PERMEABLE GEOTEXTILE

⁘ 2-FOOT SOIL COVER WITH NO IMPERMEABLE HDPE LINER OR PERMEABLE GEOTEXTILE

– – – MINOR CONTOURS

—— MAJOR CONTOURS

FIGURE 3

PROJECT
BASF FORMER CIBA-GEIGY FACILITY
180 MILL STREET
CRANSTON, RHODE ISLAND

AEI Consultants

CLIENT
AEI CONSULTANTS
112 WATER STREET, 5TH FLOOR
BOSTON, MA 02109

Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

DRAWING TITLE
FINAL COVER PLAN

NO.	DATE	REVISIONS	BY

PROJECT NO.:

DATE:

SCALE: 1" = 15'

DRAWN BY:

CHECKED BY:

DRAWING NUMBER

SHEET OF

Appendix D Cost Estimates

Cost Summary Table
Soil Excavation Remedial Construction Cost Estimate
Former Ciba-Geigy Facility
Cranston, Rhode Island
Class 4 Cost Estimate (-30%/+50%)

Alternative	Capital Const. Cost	Const. Support	Contingency	Cost + Contingency	Notes
ALT 1B - Dry Excavation - Sheet pile shoring to 55 feet bgs	$ 3,245,000	$ 724,000	30%	$ 5,160,000	50' Sheet pile. 500 gpm WTS.
ALT 2A - Wet Excavation with Trench Boxes/Slide Rail	$ 2,748,000	$ 674,000	30%	$ 4,450,000	No temp sheet pile. Slide rail system to support excavate. Stockpile with reagent addition. 100 GPM WTS. More T&D due to drying reagent.
ALT 3A - In-situ stabilization (auger)	$ 2,539,000	$ 704,000	30%	$ 4,220,000	Clear top 5' in open excavation area and excavate PCBs. ISS below groundwater. Spoils can be used for reuse as fill. Dewater and excavate TSCA soils.

Table Notes
(1) Contingency was applied to Capital Construction Cost and Construction Support Cost

ALT 1B - Dry Excavation - Sheet pile shoring to 55 feet bgs		
Capital Construction Elements	Cost	
Mobilization and Demobilization	$	200,000
Temporary Facilities and Controls	$	312,000
Odor Controls	$	72,000
Excavation Support	$	811,000
Excavation and Demolition	$	141,000
Backfill Placement and Compaction	$	143,000
Excavation Dewatering and Water Treatment	$	651,000
Waste Transportation and Disposal	$	770,000
Performance and Payment Bond	$	95,000
Restoration	$	50,000
Subtotal	$	3,245,000
Construction Support		
Pre-Design Investigation	$	200,000
Design and Regulatory Support (3%)	$	97,000
Permiting for Design and Construction (2%)	$	65,000
Construction Management (5%)	$	162,000
Environmental Monitoring	$	200,000
Subtotal	$	724,000
Contingency (30%)	$	1,191,000
Base Cost	$	5,160,000

ALT 1B - Dry Excavation - Sheet pile shoring to 55 feet bgs
Soil Excavation Remedial Construction Cost Estimate
Former Ciba-Geigy Facility
Cranston, Rhode Esland
Class 4 Cost Estimate (-30%/+50%)

Bid Item No.	Bid Item Description	Unit	Estimated Quantity	Unit Price ($)	Total Amount ($)
2	Mobilization and Demobilization				$ 200,000.00
2A	Pre-Mobilization Activities	LS	1	$ 25,000.00	$ 25,000.00
2B	General Mobilization/ Demobilization	LS	1	$ 75,000.00	$ 75,000.00
2C	Sheet Pile Mobilization/Demobilization	LS	1	$ 100,000.00	$ 100,000.00
3	Temporary Facilities and Controls				$ 311,700.00
3A	General Conditions	MO	3.4	$ 37,500.00	$ 127,500.00
3B	Temporary Controls	MO	3.4	$ 3,500.00	$ 11,900.00
3C	Traffic Control	MO	3.4	$ 7,000.00	$ 23,800.00
3D	Site Security	MO	3.4	$ 3,000.00	$ 10,200.00
3E	Health and Safety	MO	3.4	$ 37,000.00	$ 125,800.00
3F	Surveying	LS	1	$ 12,500.00	$ 12,500.00
4	Odor Controls				$ 72,040.00
4A	Odor Control System Operation	LS	1	$ 43,000.00	$ 43,000.00
4B	Odor Suppresent Foam Concentrate - RusFoam OC (AC-645)	Gal	605	$ 17.00	$ 10,285.00
4C	Odor Suppresent Foam Concentrate - RusFoam LM (AC-900)	Gal	303	$ 17.00	$ 5,142.50
4D	Odor Suppresent Foam Concentrate - Biosolve Pinkwater	Gal	303	$ 45.00	$ 13,612.50
5	Excavation Support				$ 811,111.11
5A	Pre-Clearing	CY	489	$ 12.50	$ 6,111.11
5B	Rent, Install Remove Temp. Sheet Pile	LF	160	$ 2,500.00	$ 400,000.00
5C	Purchase Import and Install Permenent Sheet Pile Deadman	LF	60	$ 6,000.00	$ 360,000.00
5D	Install New Tie Rods and Wale	LF	60	$ 750.00	$ 45,000.00
6	Excavation and Demolition				$ 141,140.00
6A	Slot Excavation	CY	470	$ 25.00	$ 11,750.00
6B	Open Excavation	CY	1,700	$ 25.00	$ 42,500.00
6C	Demolition and Removal of Subsurface Structures	LS	1	$ 50,000.00	$ 50,000.00
6D	Loadout	TON	3,689	$ 10.00	$ 36,890.00
7	Backfill Placement and Compaction				$ 142,535.56
7A	Common Fill Placement	CY	1,709	$ 75.00	$ 128,166.67
7B	DGA Placement	CY	111	$ 80.00	$ 8,888.89
7C	Clean Fill Re-Use	CY	350	$ 10.00	$ 3,500.00
7D	Demarcation Barrier Installation	SF	3,300	$ 0.60	$ 1,980.00
8	Excavation Dewatering and Water Treatment				$ 650,720.00
8A	Well Point\Sumps Install and Operate	LS	1	$ 100,320.00	$ 100,320.00
8B	Water Treatment Plant Mob\Demod	LS	1	$ 425,000.00	$ 425,000.00
8C	Water Treatment Operations	Day	22	$ 5,700.00	$ 125,400.00
9	Waste Transportation and Disposal				$ 770,470.00
9A	Non-Haz Soil	Ton	2,475	$ 150.00	$ 371,280.00
9B	Hazardous Soil Non-TSCA	Ton	155	$ 500.00	$ 77,350.00
9C	Hazardous Soil + TSCA	Ton	155	$ 500.00	$ 77,350.00
9D	TSCA Soil Non-Haz	Ton	309	$ 300.00	$ 92,820.00
9E	Foundation Concrete Waste Disposal	Ton	738	$ 150.00	$ 110,670.00
9F	NAPL Hazardous Waste Disposal	Drum	10	$ 500.00	$ 5,000.00
9G	C&D Debris	Ton	450	$ 80.00	$ 36,000.00
10	Performance and Payment Bond	LS	1	$ 94,500.00	$ 94,500.00
ALT 1	Restoration	LS	1	$ 50,000.00	$ 50,000.00
					$ 3,245,000.00

Definitions:

ALT	Denotes Alternative Bid Item
C&D	Denotes Construction and Demolition
CY	Denotes In Place Cubic Yard
DAY	Denotes Day of Operation
DGA	Denotes Dense Graded Aggregate
Drum	Denotes 55-Gallon Drum
Ea	Denotes Each
Gal	Denotes Liquid Gallon
Hr	Denotes Hour
LS	Denotes Lump Sum
NAPL	Denotes Non-Aqueous Phase Liquid
QTY	Denotes Quantity
SF	Denotes Square Foot
TON	Denotes U.S. Short Ton (2,000 pounds)

Pre-Design Investigation	$ 100,000.00
Design and Regulatory Sı	$ 97,350.00
Permiting for Design and	$ 64,900.00
Construction Managemer	$ 162,250.00
Environmental Monitorin	$ 200,000.00
Cons Support Sum	$ 624,500.00

ALT 2A - Wet Excavation with Trench Boxes/Slide Rail		
Capital Construction Elements		Cost
Mobilization and Demobilization	$	175,000
Temporary Facilities and Controls	$	356,000
Odor Controls	$	105,000
Excavation Support	$	178,000
Excavation and Demolition	$	269,000
Backfill Placement and Compaction	$	169,000
Excavation Dewatering and Water Treatment	$	541,000
Waste Transportation and Disposal	$	825,000
Performance and Payment Bond	$	80,000
Restoration	$	50,000
Subtotal	$	2,748,000
Construction Support		
Pre-Design Investigation	$	200,000
Design and Regulatory Support (3%)	$	82,000
Permiting for Design and Construction (2%)	$	55,000
Construction Management (5%)	$	137,000
Environmental Monitoring	$	200,000
Subtotal	$	674,000
Contingency (30%)	$	1,027,000
Base Cost	$	4,449,000

ALT 2A - Wet Excavation with Trench Boxes/Slide Rail
Soil Excavation Remedial Construction Cost Estimate
Former Ciba-Geigy Facility
Cranston, Rhode Esland
Class 4 Cost Estimate (-30%/+50%)

Bid Item No.	Bid Item Description	Unit	Estimated Quantity	Unit Price ($)	Total Amount ($)
2	Mobilization and Demobilization				$ 175,000.00
2A	Pre-Mobilization Activities	LS	1	$ 25,000.00	$ 25,000.00
2B	General Mobilization/ Demobilization	LS	1	$ 75,000.00	$ 75,000.00
2C	Shoring Mobilization/Demobilization	LS	1	$ 75,000.00	$ 75,000.00
3	Temporary Facilities and Controls				$ 355,700.00
3A	General Conditions	MO	3.9	$ 37,500.00	$ 146,250.00
3B	Temporary Controls	MO	3.9	$ 3,500.00	$ 13,650.00
3C	Traffic Control	MO	3.9	$ 7,000.00	$ 27,300.00
3D	Site Security	MO	3.9	$ 3,000.00	$ 11,700.00
3E	Health and Safety	MO	3.9	$ 37,000.00	$ 144,300.00
3F	Surveying	LS	1	$ 12,500.00	$ 12,500.00
4	Odor Controls				$ 105,040.00
4A	Odor Control System Operation	LS	1	$ 43,000.00	$ 43,000.00
4B	Odor Suppresent Foam Concentrate - RusFoam OC (AC-645)	Gal	1,293	$ 17.00	$ 21,972.50
4C	Odor Suppresent Foam Concentrate - RusFoam LM (AC-900)	Gal	646	$ 17.00	$ 10,986.25
4D	Odor Suppresent Foam Concentrate - Biosolve Pinkwater	Gal	646	$ 45.00	$ 29,081.25
5	Excavation Support				$ 177,538.00
5A	Aggregate for Slide Rail	TON	54	$ 47.00	$ 2,538.00
5B	Rent on Slide Rail	Day	47	$ 2,000.00	$ 94,000.00
5C	Purchase Import and Install Permenent Sheet Pile Deadman	LF	60	$ 600.00	$ 36,000.00
5D	Install New Tie Rods and Wale	LF	60	$ 750.00	$ 45,000.00
6	Excavation and Demolition				$ 268,745.00
6A	Slot Excavation	CY	470	$ 50.00	$ 23,500.00
6B	Open Excavation	CY	1,700	$ 30.00	$ 51,000.00
6C	Demolition and Removal of Subsurface Structures	LS	1	$ 50,000.00	$ 50,000.00
6D	Stage, Dewater, Loadout	TON	3,920	$ 25.00	$ 98,005.00
6E	Drying Reagent Stabilization/Solidification	TON	231	$ 200.00	$ 46,240.00
7	Backfill Placement and Compaction				$ 169,068.89
7A	Common Fill\3/4" Stone Placement	CY	1,820	$ 85.00	$ 154,700.00
7B	DGA Placement	CY	111	$ 80.00	$ 8,888.89
7C	Clean Fill Re-Use	CY	350	$ 10.00	$ 3,500.00
7D	Demarcation Barrier Installation	SF	3,300	$ 0.60	$ 1,980.00
8	Excavation Dewatering and Water Treatment				$ 541,000.00
8A	Stockpile Contruction	LS	1	$ 250,000.00	$ 250,000.00
8B	Water Treatment Plant Mob\Demod	LS	1	$ 150,000.00	$ 150,000.00
8C	Water Treatment Operations	Day	47	$ 3,000.00	$ 141,000.00
9	Waste Transportation and Disposal				$ 824,810.00
9A	Non-Haz Soil	Ton	2,714	$ 150.00	$ 407,124.00
9B	Hazardous Soil Non-TSCA	Ton	166	$ 500.00	$ 83,130.00
9C	Hazardous Soil + TSCA	Ton	166	$ 500.00	$ 83,130.00
9D	TSCA Soil Non-Haz	Ton	333	$ 300.00	$ 99,756.00
9E	Foundation Concrete Waste Disposal	Ton	738	$ 150.00	$ 110,670.00
9F	NAPL Hazardous Waste Disposal	Drum	10	$ 500.00	$ 5,000.00
9G	C&D Debris	Ton	450	$ 80.00	$ 36,000.00
10	Performance and Payment Bond	LS	1	$ 80,010.00	$ 80,010.00
ALT 1	Restoration	LS	1	$ 50,000.00	$ 50,000.00
					$ 2,747,000.00

Definitions:

ALT	Denotes Alternative Bid Item
C&D	Denotes Construction and Demolition
CY	Denotes In Place Cubic Yard
DAY	Denotes Day of Operation
DGA	Denotes Dense Graded Aggregate
Drum	Denotes 55-Gallon Drum
Ea	Denotes Each
Gal	Denotes Liquid Gallon
Hr	Denotes Hour
LS	Denotes Lump Sum
NAPL	Denotes Non-Aqueous Phase Liquid
QTY	Denotes Quantity
SF	Denotes Square Foot
TON	Denotes U.S. Short Ton (2,000 pounds)

Pre-Design Investigation	$ 100,000.00
Design and Regulatory S	$ 82,410.00
Permiting for Design and	$ 54,940.00
Construction Manageme	$ 137,350.00
Environmental Monitorin	$ 200,000.00
Cons Support Sum	$ 574,700.00

ALT 3A - In-situ stabilization (auger)		
Capital Construction Elements	Cost	
Mobilization and Demobilization	$	700,000
Temporary Facilities and Controls	$	285,000
Odor Controls	$	73,000
Excavation Support	$	405,000
Excavation and Demolition and ISS	$	406,000
Backfill Placement and Compaction	$	17,000
Excavation Dewatering and Water Treatment	$	105,000
Waste Transportation and Disposal	$	424,000
Performance and Payment Bond	$	74,000
Restoration	$	50,000
Subtotal	$	2,539,000
Construction Support		
Pre-Design Investigation	$	250,000
Design and Regulatory Support (3%)	$	76,000
Permiting for Design and Construction (2%)	$	51,000
Construction Management (5%)	$	127,000
Environmental Monitoring	$	200,000
Subtotal	$	704,000
Contingency (30%)	$	973,000
Base Cost	$	4,216,000

ALT 3A - In-situ stabilization (auger)
Soil Excavation Remedial Construction Cost Estimate
Former Ciba-Geigy Facility
Cranston, Rhode Esland
Class 4 Cost Estimate (-30%/+50%)

Bid Item No.	Bid Item Description	Unit	Estimated Quantity	Unit Price ($)	Total Amount ($)
2	Mobilization and Demobilization				$ 700,000.00
2A	Pre-Mobilization Activities	LS	1	$ 25,000.00	$ 25,000.00
2B	General Mobilization/ Demobilization	LS	1	$ 75,000.00	$ 75,000.00
2C	Sheet Pile Mobilization/Demobilization	LS	1	$ 100,000.00	$ 100,000.00
2D	Column Auger Rig Mob/Demob	LS	1	$ 500,000.00	$ 500,000.00
3	Temporary Facilities and Controls				$ 285,300.00
3A	General Conditions	MO	3.1	$ 37,500.00	$ 116,250.00
3B	Temporary Controls	MO	3.1	$ 3,500.00	$ 10,850.00
3C	Traffic Control	MO	3.1	$ 7,000.00	$ 21,700.00
3D	Site Security	MO	3.1	$ 3,000.00	$ 9,300.00
3E	Health and Safety	MO	3.1	$ 37,000.00	$ 114,700.00
3F	Surveying	LS	1	$ 12,500.00	$ 12,500.00
4	Odor Controls				$ 73,360.00
4A	Odor Control System Operation	LS	1	$ 43,000.00	$ 43,000.00
4B	Odor Suppresent Foam Concentrate - RusFoam OC (AC-645)	Gal	633	$ 17.00	$ 10,752.50
4C	Odor Suppresent Foam Concentrate - RusFoam LM (AC-900)	Gal	316	$ 17.00	$ 5,376.25
4D	Odor Suppresent Foam Concentrate - Biosolve Pinkwater	Gal	316	$ 45.00	$ 14,231.25
5	Excavation Support				$ 405,000.00
5A	Pre-Clearing	LS	-	$ 12.50	$ -
5B	Purchase Import and Install Permenent Sheet Pile Deadman	LF	60	$ 6,000.00	$ 360,000.00
5C	Install New Tie Rods and Wale	LF	60	$ 750.00	$ 45,000.00
6	Excavation and Demolition and ISS				$ 405,610.00
6A	Slot Excavation	CY	470	$ 50.00	$ 23,500.00
6B	Open Excavation above GW	CY	485	$ 25.00	$ 12,125.00
6C	Demolition and Removal of Subsurface Structures	LS	1	$ 50,000.00	$ 50,000.00
6D	Loadout	TON	1,624	$ 10.00	$ 16,235.00
6E	ISS Below GW	CY	1,215	$ 250.00	$ 303,750.00
7	Backfill Placement and Compaction				$ 16,798.89
7A	Common Fill Placement	CY	0	$ 75.00	$ -
7B	DGA Placement	CY	111	$ 80.00	$ 8,888.89
7C	Clean Fill Re-Use	CY	350	$ 10.00	$ 3,500.00
7D	Demarcation Barrier Installation	SF	3,300	$ 0.60	$ 1,980.00
7E	ISS Spoils Grading and Placement	CY	243	$ 10.00	$ 2,430.00
8	Excavation Dewatering and Water Treatment				$ 105,000.00
8A	Contain & Dispose of TSCA Water	LS	1	$ 105,000.00	$ 105,000.00
8B	Water Treatment Plant Mob\Demod	LS	0	$ 150,000.00	$ -
8C	Water Treatment Operations	Day	0	$ 30,000.00	$ -
9	Waste Transportation and Disposal				$ 424,222.50
9A	Non-Haz Soil	Ton	514	$ 150.00	$ 77,137.50
9B	Hazardous Soil Non-TSCA	Ton	51	$ 500.00	$ 25,712.50
9C	Hazardous Soil + TSCA	Ton	154	$ 500.00	$ 77,137.50
9D	TSCA Soil Non-Haz	Ton	309	$ 300.00	$ 92,565.00
9E	Foundation Concrete Waste Disposal	Ton	738	$ 150.00	$ 110,670.00
9F	NAPL Hazardous Waste Disposal	Drum	10	$ 500.00	$ 5,000.00
9G	C&D Debris	Ton	450	$ 80.00	$ 36,000.00
10	Performance and Payment Bond	LS	1	$ 73,980.00	$ 73,980.00
ALT 1	Restoration	LS	1	$ 50,000.00	$ 50,000.00
					$ 2,540,000.00

Definitions:

ALT	Denotes Alternative Bid Item
C&D	Denotes Construction and Demolition
CY	Denotes In Place Cubic Yard
DAY	Denotes Day of Operation
DGA	Denotes Dense Graded Aggregate
Drum	Denotes 55-Gallon Drum
Ea	Denotes Each
Gal	Denotes Liquid Gallon
Hr	Denotes Hour
LS	Denotes Lump Sum
NAPL	Denotes Non-Aqueous Phase Liquid
QTY	Denotes Quantity
SF	Denotes Square Foot

Pre-Design Investigation	$ 100,000.00
Design and Regulatory S	$ 76,200.00
Permiting for Design and	$ 50,800.00
Construction Managemen	$ 127,000.00
Environmental Monitorin	$ 200,000.00
Cons Support Sum	$ 554,000.00

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