AECOM Environment

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Department of Public Works
Town Hall
101 Field Point Road
Greenwich, CT 06836-2540
November 2013

Remedial Action Plan

Greenwich High School
Greenwich, CT

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List of Acronyms

AST	Aboveground Storage Tank
AOC	Area of Concern
bgs	Below Ground Surface
BAP	Benzo(a)pyrene
BOE	Greenwich Board of Education
CBYD	Call Before You Dig
CFR	Code of Federal Regulations
COC	Chemical of Concern
CSM	Conceptual Site Model
CT DEEP	Connecticut Department of Energy and Environmental Protection
CT DPH	Connecticut Department of Public Health
CY	Cubic Yard
DPW	Greenwich Department of Public Works
ELUR	Environmental Land Use Restriction
EM	Electromagnetic
EPA	United States Environmental Protection Agency
ETPH	Extractable Total Petroleum Hydrocarbons
FFS	Focused Feasibility Study
ft	Feet
GC/MS	Gas Chromatography/Mass Spectrometry
GHS	Greenwich High School
GPR	Ground Penetrating Radar
GWPC	Groundwater Protection Criteria
HAZWOPER	Hazardous Waste Operations and Emergency Response
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
IMMP	Inspection, Maintenance, and Monitoring Plan
IRM	Interim Remedial Measure
IWWA	Inland Wetland and Watercourses Association
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MDL	Method Detection Limit

MEK	Methyl Ethyl Ketone
mg/kg	Milligrams per Kilogram
µg/l	Micrograms per liter
MISA	Music and Instructional Space Auditorium
MTBE	Methyl tert-butyl ether
OSHA	Occupational Safety and Health Administration
PAMP	Perimeter Air Monitoring Plan
PM_{10}	Particulate matter less than 10 microns
PPE	Personal Protective Equipment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
RAP	Remedial Action Plan
RAR	Remedial Action Report
RGVC	Residential Groundwater Volatilization Criteria
RI	Remedial Investigation
RSR	Remediation Standard Regulations
SF	Square Feet
SIM	Selective Ion Monitoring
SLERA	Screening Level Ecological Risk Assessment
SWPC	Surface Water Protection Criteria
SVOC	Semi-Volatile Organic Compound
SPLP	Synthetic Precipitation Leaching Procedure
SS	Stainless Steel
SOP	Standard Operating Procedure
THA	Task Hazard Analysis
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Executive Summary

The following Remedial Action Plan (RAP) has been prepared for remedial actions to be performed at the Greenwich High School Site at 10 Hillside Road in Greenwich, CT. The primary objectives of this RAP are to:

- Describe the selected remedial actions and the procedures for implementing these actions for each of the remediation areas at the site;
- Summarize the planning activities required to permit the selected remedial actions and other measures to be performed to protect the health and safety of on-site personnel, the surrounding community, and the environment;
- Describe verification sampling, record-keeping, and documentation activities to be followed during performance of the planned remedial actions;
- Present planned post-remediation activities which will include maintenance and monitoring of engineered protective barriers and groundwater;
- Present a schedule for completion of the planned remedial activities; and
- Describe the ongoing public communication process for the implementation of the work described in this RAP.

The selected remedial actions were developed based upon the results and conclusions from the analysis of site data in the Remedial Investigation Report (RI) (AECOM, 2013a), the Human Health Risk Assessment (HHRA) (AECOM, 2013b) and the Focused Feasibility Study (FFS) (AECOM, 2013c). Public meetings and a public comment period were held to present and discuss the findings of these reports and the recommended remedial alternative presented in the FFS. Remedial actions that are protective of human health for both current and future site use and that comply with applicable federal and state regulations were designed based upon the data collected, conclusions developed within these reports, and public input.

The recommended approach for soil remediation, as described in the FFS and detailed in this RAP, is a risk-based alternative consisting of using barriers already in place on site to prevent exposure and removal of varying depths of surficial soil in areas where impacted soil is or may be potentially accessible to students, staff, site visitors, site workers, and utility and/or construction workers to construct new barriers. The preliminary remedial goals developed in the HHRA were used to define remediation area limits. Active remediation of groundwater impacts is not proposed because these impacts are not observed to be migrating offsite and do not pose a risk to current or future site users, the surrounding community, or the environment. However, groundwater will be monitored following the completion of remedial activities to verify that current conditions do not change. This RAP does not address sediments or surface water within the water bodies at the site as these are still being investigated.

Following the completion of the designed soil removals as confirmed by verification sampling, each area will be backfilled with clean fill material and restored to current conditions or the designated future use. The clean backfill in each area will serve as a protective barrier to impacted soil remaining in place. Excavated soil will be removed from the site and transported to properly permitted facilities for disposal.

Planning activities to be performed prior to implementation of the RAP include:

- Preparation of specifications for the work to be performed that will establish work procedures that shall be protective of site workers, other site users, and the surrounding community;

- Preparation of Health and Safety Plans for workers involved with remedial activities;
- Preparation of a Perimeter Air Monitoring Plan to be protective of site users and the surrounding community;
- Securing necessary permits and approvals for the work to be performed; and
- Public notice of remediation.

Post-remediation activities will be conducted following completion of the remedial activities. These post-remediation activities will be conducted to document the continued effectiveness of the remedial actions, maintain the integrity of protective engineered barriers preventing exposure to impacted soil, and to prevent potential future exposure to remaining impacted soil during construction activities at the site. The post-remediation activities include:

- Regular inspection of the surface of the protective engineered barrier and performing maintenance activities when required;
- Performance of groundwater monitoring and evaluation of groundwater data to confirm that groundwater impacts are not migrating from the site;
- Implementation of Environmental Land Use Restrictions that will provide guidelines for performance of future construction activities and notification requirements; and
- Establishing a financial surety in an amount sufficient to provide funds to perform post-remediation work in the event of a default by the Town of Greenwich.

Ongoing throughout the entire planning, implementation and post-remediation phases will be a public communication program. This program will be implemented in a manner that regularly informs the community of the work performed and the planned path forward so that public input on the process may be received. This program will also allow the community to comment as the project progresses.

The remediation is expected to be completed in two phases with remediation activities anticipated to commence during the summer of 2014. The second phase is anticipated be completed during the summer break of 2015. Remediation work is planned to be conducted during school summer breaks to limit impacts to the operation of the high school. Given the schedule restrictions, remediation activities may not all be completed by 2015 and additional remedial activities may be performed during the summer break 2016.

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1.0 Introduction

AECOM Technical Services, Inc. (AECOM) was contracted by the Town of Greenwich (the Town), Connecticut to develop this Remedial Action Plan (RAP) for the Greenwich High School (GHS) property located at 10 Hillside Road in Greenwich, Connecticut (the site). This RAP details the remedial approach to address impacted soil located in environmental areas of concern (AOCs) on site. Previous investigations have been performed to define the limits of chemical impacts within AOCs on site. The results of that investigation and previous site characterization efforts were summarized in a Remedial Investigation Report (RI) (AECOM, 2013a). Evaluation of risk posed by the identified chemical impacts to current and future site users was completed in the Human Health Risk Assessment (HHRA) (AECOM, 2013b). Identification, screening, and selection of remedial alternatives for impacted soil in AOCs on site were conducted in a Focused Feasibility Study (FFS) (AECOM, 2013c).

The objectives of this RAP are to:

- Document and describe the selected remedial actions and the rationale used to develop these actions including the Conceptual Site Model (CSM), current and anticipated future use, Preliminary Remedial Goals (PRGs), and background concentrations of chemicals. Also described are the procedures for implementing these actions for each of the remediation areas at the site;
- Summarize the planning activities required to permit the selected remedial actions and other measures to be performed to protect the health and safety of on-site personnel, the surrounding community, and the environment;
- Describe verification sampling, record-keeping, and documentation activities to be followed during performance of the planned remedial actions;
- Present planned post-remediation activities which will include maintenance and monitoring of protective barriers and groundwater;
- Present a schedule for completion of the planned remedial activities; and
- Describe the ongoing public communication process for the implementation of the work described in this RAP.

This RAP was developed as part of ongoing investigation and remediation activities at the site. The remedial approach for soil detailed in this RAP draws on data analysis and conclusions outlined in the RI, the HHRA, and the FFS and also from comments received from the public during public meetings and during the public comment period. Soil remedial actions were designed based upon the PRGs developed in the HHRA. PRGs were developed to be protective of human health for both current and potential future site users. An evaluation of remedial options capable of achieving the remedial goals developed in the HHRA was performed in the FFS. Numerous remedial options were evaluated and use of existing protective barriers and limited soil excavation and disposal at an appropriately permitted landfill with site restoration to create additional protective barriers to limit exposure was selected as the most effective remedial option to address chemical impacts at the site.

Active remediation for groundwater impacts identified at the site is not planned as groundwater impacts are not observed to be migrating from the site and the impacts present do not pose a risk to current and future site users, the surrounding community, or the environment. Groundwater monitoring has been performed quarterly at the site since January 2012, seven sampling events total, and the groundwater analytical data and groundwater flow patterns support the conclusion that identified impacts do not pose an unacceptable risk. The groundwater data collected through July 2012 are presented in the RI Report. Additional groundwater data collected since then and the July 2012 data are presented within this RAP. In addition, continued monitoring of groundwater will be performed at the frequency indicated in **Section 7.3**. The data collected will be evaluated to verify that impacts identified remain stable and continue to not migrate from the site.

Limited impacts to sediments and surface water were described in the RI and the data were analyzed in the HHRA and the Screening Level Ecological Risk Assessment (SLERA) (AECOM, 2013d). The impacts to sediments and surface water were determined to not pose an unacceptable risk to human health under current and future site uses. However, the conclusions of the SLERA included findings that these impacts may pose an unacceptable risk to environmental receptors and additional investigation to further evaluate these limited impacts was recommended. These investigations are ongoing and remedial activities, if necessary, will be discussed in a separate document.

1.1 Report Organization

The RAP is organized as follows:

- **Section 1** – A summary of site background information including a description of the AOCs and chemicals of concern (COCs) on site, a discussion of the site CSM, and identification of applicable and relevant remedial standards and goals;
- **Section 2** – An overview of the remedial design investigation activities that were implemented at the site following completion of the FFS and groundwater data collected since July 2012. These data have not been previously reported;
- **Section 3** - A detailed description of remedial actions that are planned for individual AOCs on site;
- **Section 4** – A summary of planning activities and documents (e.g. work plan, health and safety plan, etc.) that will be developed prior to implementing remedial actions at the site, permitting requirements, and plans for public involvement;
- **Section 5** – A description of the sampling and analysis approach that will be used during and following remediation to monitor progress and effectiveness of the implementation;
- **Section 6** – A summary of field data collection and documentation requirements during and following remediation;
- **Section 7** – A description of post-remediation inspection, maintenance, and monitoring requirements;
- **Section 8** – An estimated schedule for implementing the RAP; and
- **Section 9** – References used in developing the RAP.

1.2 Background

The following provides a brief site description and a summary of the AOCs and COCs developed for the site which are discussed in more detail in the RI. AOCs were identified based upon site history and results from previous site investigations. COCs were identified based upon comparison to federal and Connecticut (state) standards. Specifically, federal and state regulatory standards were used to screen analytical data. If a chemical was found to exceed federal or state regulatory standards it was deemed to be a COC and that additional investigation and evaluation were required to determine the extent of these impacts. The delineation of a COC was deemed to be complete when the extent of impacts exceeding the federal or state standards was determined. **Table 1-1** lists COCs determined within each of the AOCs investigated.

1.2.1 Site Description

Greenwich High School is located at 10 Hillside Road in Greenwich, Connecticut, which is approximately 73.61 degrees west longitude and 41.04 degrees north latitude. The site is owned by the Town of Greenwich, and includes 54.75 acres. A Site Location Map is included as **Figure 1-1**. A Site Plan, depicting pertinent site features and AOCs, is included as **Figure 1-2**. This RAP describes the remediation of the site outside of the Music Instructional Space Auditorium (MISA) footprint. Remediation within the MISA footprint prior to construction of the auditorium is described under a separate remedial plan and addendum (AECOM, 2012a and 2012b)

The site is currently used as a public high school with associated athletic facilities. The southeast corner of the site has been undeveloped since the Town purchased the property but private residences were formerly located within this area. Improvements on the rest of the site include the high school buildings, paved parking areas, natural and synthetic turf athletic fields, tennis courts, batting cages, landscaped areas, and pedestrian walkways. Utilities servicing the property include municipal water, storm water drainage, sanitary sewer, electricity, and communications. Heating is provided by oil-fired boilers; fuel oil for heating is stored on-site in a 15,000-gallon underground storage tank (UST).

West Brothers Brook enters the property from the northwest and flows in a concrete channel that follows the western boundary. The concrete channel curves east between the football stadium (Field 1) and the baseball diamond (Field 2) before returning to a natural stream channel. The natural stream channel widens into a small surface water impoundment in the southeast corner of the site; referred to as Cider Mill Pond. Water flows from the impoundment over two spillways in a man-made dam, and West Brothers Brook resumes beyond Cider Mill Pond and exits the property via culverts under East Putnam Avenue.

1.2.2 Site History

Before the Town acquired the site in 1966, historical maps indicate that limited portions of the property on the eastern and southern extents were used for residential purposes with the majority of the parcel left undeveloped. The central portion of the property was a wetlands and an unnamed pond that is currently referred to as Cider Mill Pond was present in the southeast corner. West Brothers Brook entered the property at the same location as it does currently, flowed southeast into the wetlands, and then beyond to Cider Mill Pond and eventually off the property at its current location in the southeast corner.

During the initial construction phase for the high school in the late 1960s, the brook was rerouted along the western portion of the site into the concrete channel it currently occupies. Fill was brought onto the property to fill the wetlands to grades similar to those that currently exist. The high school buildings were constructed on the eastern portion of the property, beyond the limits of the historical wetlands, on areas of shallow bedrock or bedrock outcrops.

Construction of the high school was performed between 1966 and 1972 and included Buildings A through K, eight tennis courts and athletic fields to the west of the school buildings, with the school opening for use in 1970. Several improvements to the property have taken place since the initial construction of the high school in 1972 and are summarized in the RI.

1.2.3 Surrounding Properties and Land Use

The site is bounded by residential properties to the north and west, East Putnam Avenue to the south, and Hillside Road to the east. Residential properties are located beyond East Putnam Avenue and Hillside Road.

The site is currently developed with the school buildings, paved parking lots, and natural and artificial turf athletic fields (see **Figure 1-2**). The southeast corner of the property, where Cider Mill Pond is located has not been developed as part of the school property and has vegetative cover with numerous trees. School buildings are constructed on the eastern side of the property where bedrock is shallow. Asphalt parking lots are constructed in the areas surrounding the school buildings and in the northeast portion of the property. Parking lots are typically constructed of 4 to 6 inches of asphalt underlain by 1.5 to 3 feet of subbase materials. Artificial turf fields are constructed of drainage materials underlain by a geotextile (separates the drainage materials from soil beneath) and covered by a cushion layer and the artificial turf. The total thickness of the artificial turf and drainage materials is typically 1.5 feet.

1.2.4 Site Geology and Hydrogeology

The following is a brief discussion of site geology and hydrogeology. A more complete discussion was presented in the RI which is attached as **Appendix A**.

1.2.4.1 Surficial Materials

Most of the site is underlain by a silty, sandy till. An extensive layer of peat and organic silt is found beneath athletic Fields 3, 4, 5, a portion of Field 6, and the west parking lot. Non-native fill material is also present in the former wetlands area. This fill material comprises AOC-1, and is the subject of most of the remedial actions planned for the site.

The following is a summary of the composition of subsurface geologic materials encountered at the site.

1) Surficial Materials: Generally six inches of topsoil (or asphalt in parking lot areas).

2) Fill: The non-native fill materials can generally be described as fine to medium sand with some silt and traces of gravel with debris containing trace amounts of cinders, brick, glass, roots, wood, plastic, and rubber. Other fill materials consist of silty sand with gravels, cobbles and boulders, similar to the native soils encountered at the site and may represent reworked (moved during constructing activities) native materials. In general, fill materials were encountered at depths ranging anywhere from the surface to 14 feet (ft) below

ground surface (bgs). The average thickness of the non-native fill material encountered at the various depths was approximately 2.5 ft. Most of the fill is medium to very dense.

3) Peat/Organic Silt: Beneath the non-native fill, a layer of soft organic material extends to depths ranging from 15 to 40 ft bgs, shallower beneath the parking lot and deeper under the athletic fields. The maximum thickness encountered measured 24.5 ft.

4) Dense Till: A layer of dense silty sands (till) was encountered beneath the non-native fill and the peat/organic silt units. This material contains varying amounts of gravel, cobbles and boulders and extends to depths ranging from 8.5 to 59 ft bgs.

5) Gneiss Bedrock: Gneiss was encountered in numerous borings across the site. Depth to bedrock surface ranged from the surface (bedrock outcroppings on site) to 59 ft bgs. At some boring locations, the upper one to two ft is decomposed (weathered) and was easily drilled. In general, competency of the rock increased with depth.

1.2.4.2 Surface Water

West Brothers Brook enters the site from the northwest corner. On-site, the surface water flow is controlled within a concrete channel and then a natural channel. Initially the water flows south past Fields 4 and 3, respectively, and then curves around Field 2 to the east and then northeast. The concrete channel then makes a sharp turn and West Brothers Brook is re-directed to the southeast. The concrete channel ends halfway around this turn and the stream then follows an earthen channel. Some cracks were observed in the concrete channel and minor to moderate leakage into or out of the structure is expected.

1.2.4.3 Groundwater

At the site, groundwater has been observed in the shallow overburden materials that include till, fill and swamp (peat or highly organic) deposits. Groundwater is also present within fractures of the shallow bedrock zone.

Manual and continuous water level readings have been collected at the site. Manual water levels were collected from both monitoring wells and surface water gaging locations. The continuous water levels were recorded automatically using pressure transducers installed within four separate monitoring wells. Based on historical groundwater and surface water elevation measurements collected quarterly since January 2012, groundwater generally flows on to the site from the north and east and exits the site to the southeast. A groundwater mound exists on the western portion of the site, beneath athletic turf Fields 3 and 4.

1.3 Summary of Areas of Concern (AOCs) and Chemicals of Concern (COCs)

Table 1-1 summarizes AOCs and COCs identified at the site and the AOC locations are shown on **Figure 1-2**. AOCs 1 through 9 were identified in the Phase 1 Environmental Site Assessment ((DTC, 2011) prior to the completion of the site wide investigation program. These AOCs were identified based upon site history and the potential for releases within the area. However, investigation findings for some of the AOCs did not identify chemical impacts that exceeded federal or state standards used as screening criteria. These areas were not evaluated for remediation. In addition, as discussed in the RI (AECOM, 2013a), some of the AOCs were grouped together for evaluation of remedial options.

The following is a brief discussion of AOCs and COCs pertinent to this RAP. As previously discussed, remedial actions in AOC 10 (groundwater) and AOCs 11 and 12 (stream and pond sediments), are not included in the RAP. A detailed discussion of each AOC including analytical data tables and figures is presented in the RI, attached in **Appendix A**.

1.3.1 AOC 1 Fill Area

A wetland, fed and drained by West Brothers Brook, existed at the site before the parcels that make up the GHS site were purchased by the Town. Prior to construction of the school, the brook was diverted into a concrete channel and the wetland filled and built up to current grades. The total area of AOC 1 is approximately 495,000 square feet (SF) (11.4 acres) and this AOC is located in the central and western portions of the site. Fields 2, 3, 4, 5 and 6 and the west parking lot are located at the surface over AOC 1.

COCs identified in AOC 1 include volatile organic compounds (VOCs), extractable total petroleum hydrocarbons (ETPH), polycyclic aromatic hydrocarbons (PAHs), metals, polychlorinated biphenyls (PCBs) and pesticides. The fill material is highly heterogeneous and concentrations of COCs vary greatly throughout. VOCs have been identified in soil borings within the northern portion of Field 2 and the southern portion of Field 3 but are typically not detected in other areas. The area of highest concentrations for PCBs, ETPH, and PAHs is located to the west of the western parking lot and extends beneath Fields 3 and 4 and a limited portion of Field 2.

1.3.2 AOC 2 through AOC 6 Facility Boilers, Fuel Storage and Transformers

AOCs 2 through 6 include the facility boilers and associated appurtenances, fuel storage (USTs, aboveground storage tanks (ASTs) and associated piping) and electrical transformers, which are all located inside or outside and nearby to the west and east of Wing B of the high school building. AOCs 2 through 6 comprise a total area of approximately 7,200 SF.

ETPH, PCBs, PAHs, arsenic and lead were identified as COCs for these areas. For the purposes of this RAP, PCBs reported above screening criteria in surficial soil samples SS-248 and SS-249, which had been included in the Non-AOC and AOC 13 in the RI, respectively, will be included in the remediation plan for these areas.

1.3.3 AOC 8 Pesticides

AOC 8 includes an area to the south of Wing D along the north bank of Cider Mill Pond. The area is covered by grass and the eastern part is mowed by the grounds crew while the western end is fenced off as part of an interim remedial measure (IRM) performed at the site to prevent contact with surficial soil. AOC-8 comprises an area of approximately 5,700 SF.

Chlordane is the COC for AOC 8. Arsenic was detected in one boring at a concentration greeter than the screening criteria in soil but the detected concentration was less than the background concentration for arsenic in this area. No other COCs were identified within this AOC.

1.3.4 AOC 13 Southern Arsenic Area

The southern arsenic area is located east of Field 1 and covers an area of approximately 255,000 SF (5.8 acres). Bedrock outcrops have been observed in this area and depth to bedrock typically ranges from ground surface to 9 ft bgs. AOC 13 is primarily wooded and open grass areas. Private residences were located within this AOC but were demolished prior to construction of the high

school. During construction of the high school, which included placing of fill materials in AOC 1, bid documents indicate that this area was fenced off and not developed, filled, or otherwise modified. The area surrounds Cider Mill Pond and a portion of the West Brothers Brook natural channel. Subsets of the main arsenic area are found near soil boring location I26 and surface soil samples N8 and N9 (located south of Field 2).

Arsenic was identified as a COC for AOC 13 based upon comparison with screening criteria. The site-specific background concentration of arsenic was determined to be 20 milligrams per kilogram (mg/kg) and this value was used in remedial planning. Additional sampling was performed to define remediation areas and the data, not previously reported, are discussed in **Section 2.0**.

1.3.5 Benzo (a) pyrene Areas

Based on the results of the HHRA, benzo (a) pyrene (BAP) was added as a COC for select areas throughout the site. The PRG for BAP was determined to be 0.159 mg/kg in surficial soil (0 to 1 ft bgs). Several of the soil sample analytical reporting limits reported during remedial investigation activities did not meet the PRG for BAP. This represented a data gap for remediation planning and additional investigation activities were initiated to address this gap. The additional investigation activities are summarized in **Section 2.0**.

1.3.6 Groundwater

Groundwater sampling has been conducted at the site on an approximate quarterly basis. The groundwater monitoring program has consisted of collection of groundwater and surface water elevations to evaluate groundwater flow direction and collection and subsequent analysis of groundwater samples to evaluate the nature and extent of groundwater impacts. Groundwater data collected through July 2012 were previously reported in the RI. The last four rounds of groundwater sampling data, including data from sampling events completed in July 2012 and February, May and August 2013, are summarized in **Section 2.5**. The following is a discussion of COCs determined in groundwater at the site. All groundwater samples were collected and analyzed as described in the RI.

Twenty-nine monitoring wells are located at the site. All wells have been installed so that the screened portion of each well intersects the groundwater table. Groundwater samples have been collected from each well during each of the last four sampling events unless the well was dry or did not produce enough water to sample. During each of the last four sampling rounds groundwater samples were collected and analyzed for PCBs, ETPH, VOCs, PAHs, and metals.

Chemical analyses performed on groundwater samples during the last four sampling events were selected based upon COCs in soil and historical groundwater sampling results. As described in the RI, chemicals were determined to be COCs in groundwater if reported concentrations exceeded conservative screening criteria established in federal and state regulations. For groundwater these screening criteria are the Groundwater Protection Criteria (GWPC), Surface Water Protection Criteria (SWPC) and Residential Groundwater Volatilization Criteria (RGVC) developed by the Connecticut Department of Energy and Environmental Protection (CT DEEP).

The following is a summary of COCs determined in groundwater at the site.

- PCBs have been detected at concentrations above screening criteria in samples collected from four monitoring wells located within AOC 1. All four of these monitoring wells are

located within the area where the highest soil impacts have been identified. There have been sporadic and one-time detections of PCBs in other monitoring wells but the results were less than screening criteria. There is no evidence of migration of PCB impacts to groundwater beyond AOC 1 or offsite.

- ETPH has been reported at concentrations above screening criteria in samples collected from three monitoring wells which are all located within AOC 1. All three of these monitoring wells area located within the area of highest soil impacts. ETPH detections at these locations have been sporadic having been detected at each location only once during the last four sampling rounds. ETPH has not been detected in samples collected from other monitoring wells at the site. Thus, ETPH impacts to groundwater are limited and there is no evidence of migration of ETPH impacts beyond AOC 1 or offsite.
- VOCs have been detected at the site but only methyl ethyl ketone (MEK) was ever reported at a concentration above screening criteria and this occurred within only one well located within AOC 1 during one sampling event. MEK has not been detected in subsequent groundwater samples collected at this location and reporting limits were less than the screening criteria. There have been sporadic and inconsistent detections of VOCs in other monitoring wells located at the site but none of these detections exceeded screening criteria. Thus, VOC impacts to groundwater are limited and there is no evidence of migration of VOC impacts offsite.
- PAHs have been reported at concentrations above screening criteria in groundwater samples collected from seven monitoring wells located at the site during one or more of the sampling events. All but one of these monitoring wells are located within AOC 1. From the data collected to date, PAH impacts to groundwater are very limited in extent and are not consistently measured. There is no evidence for migration of these impacts beyond the limited area of impacts or offsite.
- At least one metal has been reported at a concentration above screening criteria in eighteen of the twenty-nine monitoring wells at the site. However, metals results reported to date do not indicate a consistent pattern of groundwater impacts with the exception of the following:
    - Arsenic has been consistently reported at concentrations above screening criteria in samples collected from one monitoring well located within AOC 1. However, soil impacts or another potential source of these groundwater impacts has not been identified in this area. Arsenic has never been detected in surface water samples collected from West Brothers Brook, including samples collected in the area of MW-S15. There have been sporadic and inconsistent detections of arsenic exceeding screening criteria in other monitoring wells at the site. However, data collected to date do not indicate that arsenic impacts to groundwater are migrating offsite.
    - Barium has been consistently reported at concentrations above screening criteria in samples collected from two monitoring wells located in AOC 1. Barium is consistently detected in all groundwater at the site, even monitoring wells upgradient of soil impacts, indicating that some barium is naturally occurring in groundwater. Data collected to date do not indicate that barium-impacted groundwater is migrating offsite.

In summary, groundwater impacts at the site are generally limited to within AOC 1 and detections of other COCs exceeding screening criteria outside of AOC 1 are sporadic and inconsistent. Groundwater monitoring results indicate that impacted groundwater is not migrating from AOC 1 to

other areas at the site, nor is impacted groundwater migrating offsite. Continued groundwater monitoring will be conducted on a periodic basis as described in **Section 7.3**.

1.4 Conceptual Site Model

The CSM defines what is known about the source(s) of chemical impacts, mechanisms of release, impacted media, migration pathways and potential receptors. The CSM for the site was developed and refined during remedial investigation activities completed at the site between August 2011 and June 2013. The CSM was discussed in the RI report and more fully developed in the HHRA. The following is a summary of the CSM for the site.

1.4.1 Potential Source Areas

Prior to 1966, the site was undeveloped except for residences that were located along the current eastern and southern property boundaries. Historical maps of the property depict a wetlands located in central portions of the site. The Town of Greenwich purchased the property in 1966 and commenced construction of the high school. According to historical records obtained from the Town, the brook was diverted and fill material was used for filling and grading the site for future use. This fill material was not designated for use elsewhere at the site.

The fill material is the primary source of chemical impacts at the site. COCs identified in the fill include PCBs, VOCs, ETPH, PAHs and metals. Pesticides have also been identified in the fill material. However, pesticide impacts are likely the result of grounds-keeping activities and not inherent to the fill material brought to the site.

Arsenic-impacted soil has been identified in the southern area of the site. The source of arsenic in this area is unknown as fill material was not placed in this area. Arsenic has not been reported at concentrations indicative of a natural source in bedrock chip samples collected from nearby bedrock outcrops and deeper bedrock samples. However, an evaluation of arsenic data for the site outside of area AOC 1 (where non-native fill is known to have been placed) indicates that the background concentration for arsenic is 20 mg/kg.

Other potential sources of chemical impacts at the site include various USTs, ASTs, transformers, floor drains, oil water separators and grounds-keeping activities. Releases of COCs have been identified from some of these sources but the impacts are limited in nature and extent.

1.4.2 Chemical Fate and Transport

Potential migration pathways to be considered for the CSM include:

- leaching of chemicals from impacted soils into groundwater,
- groundwater transport through natural soils, fill and subsurface conduits,
- transport in surface water, including stream flow and overland flow,
- vapor migration through unsaturated soils and along subsurface utility corridors, and
- wind-blown dust and/or volatile air emissions from undeveloped portions of the site.

In addition to the potential migration pathways, the mobility of chemicals through the environment depends on physical properties of the chemical (solubility in water, volatility, etc.) as well as properties of the media (soil permeability, pH of groundwater, etc.).

Leaching of chemicals from impacted soil into groundwater is believed to be occurring at the site because groundwater impacts have been identified at the site. However, the groundwater transport of these chemical impacts is limited to within the property boundaries and there is no offsite migration of these impacts. In addition, there are no onsite uses (i.e., drinking water or irrigation) of groundwater so there is no direct exposure. Thus, leaching of chemicals and groundwater transport is not considered to be a completed pathway for exposure.

Surface water samples were collected during the remedial investigation phase to evaluate transport through this media. The surface water sample results indicated that impacts may be originating from offsite sources and evaluation of the data in the HHRA found that the impacts measured did not pose an unacceptable risk to human health. Additional testing and evaluation of surface water is being performed to determine potential impacts to ecological receptors.

During the RI there were limited detections of VOCs in soil and groundwater. Soil vapor and ambient air samples were collected to more fully evaluate the vapor migration pathway during the remedial investigation as well. Evaluation of the data in the RI and HHRA indicated that vapor migration was not a completed pathway for exposure.

Ambient air samples collected were also used to evaluate wind-blown or volatile emissions of chemicals as a potential pathway for exposure. Evaluation of the data in the RI and the HHRA indicated that this was not a completed pathway for exposure.

1.4.3 Identification of Potential Receptors and Exposure Scenarios

The following potential receptors were evaluated in the HHRA for potential exposure:

- A current/future typical indoor maintenance worker (custodian) scenario based upon typical work behaviors for custodial staff;
- A current/future outdoor maintenance worker (groundskeeper) based upon typical work practices for groundskeeping staff;
- A future construction/utility worker scenario based upon a scenario that involved excavation into the subsurface with exposures to impacted soil and groundwater. Note that as groundwater in the area of the site is not used as a drinking water resource, the current/future construction/utility worker is the only identified potential receptor for impacted groundwater;
- A current/future high school student (age 14 to 17 years) scenario based upon potential exposures that could occur to a student that was engaged in both indoor and outdoor school athletic teams;
- A current/future high school student (age 14 to 17 years) scenario based upon potential exposures that could occur to a student that was engaged in indoor school athletic teams;
- A current/future high school teacher scenario based upon potential exposures for a teacher that is also involved in coaching outdoor athletic teams;
- A current/future high school teacher scenario based upon potential exposures for a teacher that is also involved in coaching indoor athletic teams; and
- A current/future site visitor scenario based upon a spectator (parent accompanied by a small child) to be on-site while attending indoor and outdoor events at the school.

1.4.4 Preliminary Remedial Goals

The evaluation of exposures was based upon typical site use for the potential receptors discussed in **Section 1.4.3** and was performed to determine the increased cumulative risk due to these exposures. In the HHRA, none of the exposure scenarios evaluated were found to pose an increased cumulative risk of 1 in 100,000 (10^{-5}) which is a level considered acceptable to the United States Environmental Protection Agency (EPA). Thus, use of the site is safe under current conditions. For the purposes of this RAP, PRGs developed based upon an increased cumulative risk of 1 in 1,000,000 (10^{-6}) were used to design remedial activities and are highly protective of human health. The PRGs developed for the GHS site differ from federal and state regulatory remediation standards in that they were determined using actual exposure scenarios developed for the site instead of the assumed exposure scenarios used in developing the federal and state standards.

In the evaluation of exposure scenarios the site was broken down into areas that weren't entirely based upon the AOCs developed in the RI. Instead, the areas used for evaluating exposures were developed for the HHRA based upon typical use and the COCs present. The PRGs determined based upon this data analysis in the HHRA are specific to a chemical within a specified use area for the specified exposure scenario (e.g., PCBs, Athletic Fields – Fill Area, outdoor maintenance worker) and are presented in this manner in **Table 1-2**. The PRGs are also specific to a media to which the user may be exposed (e.g., surface soil (0-1 ft bgs) or combined soil (0-15 ft bgs)). The site areas used for evaluation in the HHRA are as follows:

- Athletic Fields – Fill Area – Includes the entire fill area (AOC 1) and locations immediately surrounding. Included within the Athletic Fields – Fill Area were all of Fields 2, 3, and 4, the southern portion of Field 5 and the west parking lot. PRGs were developed in the HHRA for specific chemicals and site uses within this area.
- Athletic Fields – Non-Fill Area – Includes athletic fields beyond the fill area which is the remainder of Field 5 and all of Fields 6 and 7. Also included in this area were the north parking lot and the school property outside the buildings on the east side. PRGs were developed in the HHRA for specific chemicals and site uses within this area.
- Southern Area - Includes the property south of West Brothers Brook and that surrounding Cider Mill Pond. PRGs were developed in the HHRA for specific chemicals and site uses within this area.
- Cider Mill Pond/West Brother's Brook – Includes the surface water bodies found on the property and the sediments within the boundaries of these water bodies. There were no PRGs developed for human exposures within this area.
- School Buildings – Includes the interior of the existing structures on site and the MISA building currently under construction. There were no PRGs developed for human exposures within this area for chemicals found in soil or groundwater at the site.

The planned remedial actions described in this RAP have been designed to eliminate the exposure pathways to soil with concentrations of a specific chemical exceeding the PRG for a specified user. Specifically, remedial measures are designed to eliminate the following pathways with PRGs:

- Athletic Fields – Fill Area
    - Exposure of an Outdoor Maintenance Worker (Groundskeeper) to surface soil containing total PCBs at a concentration equal to or greater than 1.24 mg/kg in the Athletic Fields - Fill Area. Given that the strictest federal and state standard for

PCBs in soil is 1 mg/kg and that this standard is very close to the PRG, the state and federal standard of 1 mg/kg was used in the design of remedial actions. Remediation is designed to be protective for all activities performed by outdoor maintenance workers.

  - Exposure of a Construction Worker to combined soil (all soil above 15 ft bgs given the intrusive nature of the activities) containing equal to or greater than 8.39 mg/kg total PCBs in the Athletic Fields area. Remediation is designed for limited construction activities (0 to 3 ft bgs) that are anticipated in the future. Administrative controls (Environmental Land Use Restrictions) will also be employed to limit exposure for the construction worker engaged in more intrusive construction work.
  - A PRG was developed for Construction Worker exposure to PCBs in groundwater at a concentration of 8.5 microgram per liter (µg/L). Because groundwater is typically encountered at depths greater than 3 ft bgs, active remedial measures have not been designed to address this PRG. Instead, administrative controls will be employed to prevent exposure under this use scenario.

- Athletic Fields – Non-Fill Area
  - Exposure of a Construction Worker to combined soil containing greater than 25.5 mg/kg arsenic or greater than 4.11 mg/kg benzo(a)pyrene. Remediation is designed for limited construction activities that are anticipated in the future. Administrative controls (Environmental Land Use Restrictions) will also be employed to limit exposure for the construction worker engaged in more intrusive construction work.
  - Exposure of a Site Visitor to surface soil (soil from 0 to 1 ft bgs given the non-intrusive nature of the activity) containing greater than 0.159 mg/kg Benzo(a)pyrene. The PRG developed for the site is more restrictive than the strictest state standard for this chemical and is considered to be extremely protective of human health.
- Southern Area
  - Exposure of an Outdoor Maintenance Worker to surface soil containing greater than 2.65 mg/kg arsenic or greater than 10.8 mg/kg chlordane. Because the PRG for arsenic is less than the determined background concentration of 20 mg/kg, the background concentration for arsenic was used in the design of the remediation.
  - Exposure of a Site Visitor to surface soil (soil from 0 to 1 ft bgs given the non-intrusive nature of the activity) containing greater than 0.159 mg/kg Benzo(a)pyrene. The PRG developed for the site is less than the strictest state standard for this chemical and is considered to be extremely protective of human health.

No other completed receptor/exposure pathways with an increased cumulative risk of 10^{-6} to chemicals found in soil or groundwater at the site were identified.

1.5 Compliance with Federal and State Regulatory Standards

Federal and state standards used in the evaluation of the data were discussed in detail in the RI. The following is a brief discussion of how compliance with federal and state standards will be achieved by the remedial design.

1.5.1 Federal Remedial Standards

For soil and groundwater, compliance with the federal regulations for PCBs, found in 40 Code of Federal Regulations (CFR) Part 761, will be achieved under the provisions of §761.61(c). This RAP serves as the written application to EPA for the risk-based disposal approval. Information required under the Notification requirements in §761.61(a)(E)(3) is included within the text and the RI report which is attached in **Appendix A**. No remedial activities as described in this RAP will be performed until written Approval is received from EPA.

1.5.2 State Remedial Standards

For soil, compliance with the state regulations found in the Remediation Standard Regulations, 22a-133k-1 through -3 of the Regulations of Connecticut State Agencies would be achieved under the provisions of 22a-133k-2(f)(2) governing engineered controls. Because the site is not under the jurisdiction of CTDEEP, the state agency will not grant an approval for the remedial work. However, the Town will seek concurrence from the state that the planned remediation meets the requirements of the state regulations.

2.0 Remedial Design Investigation

Extensive characterization activities have been completed at the site including soil, sediment, surface water, groundwater, ambient air and soil vapor sampling. Analytical results, site geology and hydrogeology have been evaluated such that the horizontal and vertical distribution of chemical impacts has been sufficiently characterized and the subsurface soil and groundwater conditions are well understood. Investigation activities have been completed by AECOM and others and all results were reported in the RI which was submitted to the EPA Region 1 PCB Coordinator, CT DEEP, and CT DPH in February 2013. The complete RI report, including all previously collected analytical data and figures, is included in **Appendix A**.

In June 2013, AECOM initiated a soil investigation program to address existing data gaps and refine remedial areas in support of preparation of this RAP. Analytical data collected during the June 2013 have not been previously reported and are presented in the following sections. All sample collection and analysis procedures and data collection and analysis procedures employed in the remedial design investigation are the same as those described in the RI report and are not described further in this document.

2.1 Objective and Scope of Work

The remedial design investigation was planned to address data gaps and achieve the following objectives:

1. Delineate extent of surficial (0-1 ft bgs) arsenic impacts in AOC 13 and refine planned excavation areas of arsenic impacted soil.

2. Collect surficial soil samples in areas where previous laboratory reporting limits did not meet the PRG for BAP. Based on the results of the HHRA, the PRG for BAP is 0.159 mg/kg in surficial soil. To address this data gap, additional soil samples were collected and analyzed for PAHs via EPA Method 8270 using selective ion monitoring (SIM) which is capable of achieving reporting limits lower than 0.159 mg/kg.

To accomplish the objectives of the remedial design investigation, AECOM collected 46 surficial (0-1 ft bgs) soil samples from selected areas. Soil sampling locations from the June 2013 remedial design investigation are shown on **Figure 2-1**. Soil sampling methods are described below.

2.2 Preparatory Activities

A site-specific Health and Safety Plan (HASP), as required by the Occupational Safety and Health Administration (OSHA) under Hazardous Waste Operations & Emergency Response 29 CFR 1910.120, was developed to reflect planned work activities at the site. The HASP was updated as necessary when additional tasks were anticipated. Task Hazard Analyses (THAs) were also completed for each anticipated task at the site. THAs identify task-specific hazards and corrective actions for mitigating hazards. The THAs were incorporated into the HASP.

Prior to initiating the subsurface investigations, AECOM staff marked all proposed subsurface sampling locations at the site and notified Call Before You Dig (CBYD) to request a utility mark-out at the site. Additionally, New England Subsurface Imaging was retained prior to commencement of the sampling program to perform ground-penetrating radar (GPR) and/or electromagnetic (EM) field surveys to locate underground structures and utilities in the area of the proposed sampling locations.

2.3 Soil Sampling Procedure

A majority of the surficial soil samples were collected using a Geoprobe direct-push drilling unit operated by Aquifer Drilling & Testing, Inc. of Newington, Connecticut. Soil samples were retrieved from the subsurface in Macrocore sampling sleeves. Where conditions prevented use of the Geoprobe, surficial soil samples were collected using a hand auger. Following each use, the hang auger bucket was decontaminated using a solution of water and detergent and rinsed in clean water. Soil samples were immediately transferred to laboratory-supplied glassware and stored on ice under chain-of-custody protocol, for subsequent transport to the laboratory for analysis.

2.4 Soil Analytical Results

Soil samples were analyzed for PAHs via EPA Method 8270-SIM and/or arsenic via EPA Method 6000/7000 series methods. Soil analytical results are summarized in **Table 2-1**. Arsenic was reported at concentrations above the approved background screening concentration (20 mg/kg) in five samples analyzed. BAP was reported at concentrations above the PRG of 0.159 mg/kg in six samples analyzed. The laboratory analytical reports from the investigation are included in **Appendix. B**. The results of the remedial design investigation were used to define remediation areas and limits. The planned remediation is described further in **Section 3.0**.

2.5 Groundwater Analytical Results

COCs in groundwater were discussed in general in Section 1.3.6. The discussion below provides more detail as to groundwater analytical results. Results from each of the last four groundwater sampling rounds presented below have been summarized and submitted to regulators and the local community via public updates. Analytical results from the last four sampling events are summarized in **Table 2-2**. Groundwater impacts above screening criteria reported in samples from each monitoring wells for the last four sampling rounds are depicted on **Figure 2-2** through **Figure 2-5** and groundwater elevation contours from these four rounds of sampling are shown on **Figure 2-6** through **Figure 2-9**. Groundwater analytical data reports are included in **Appendix C**.

There are twenty-nine monitoring wells located on the site and all of the wells are screened across the surface of the groundwater table. Groundwater samples have been collected from each well during each of the last four sampling events unless the well was dry or did not produce enough water to sample. During each of the sampling events summarized in this report groundwater samples were collected and analyzed for PCBs, ETPH, VOCs, PAHs, and metals. Analytical methods are the same as those described in the RI (AECOM, February 2013).

Chemical analyses performed on groundwater samples during the sampling events summarized in this report were selected based upon COCs in soil and historical groundwater sampling results. As described in the RI, chemicals were determined to be COCs in soil or groundwater if detected concentrations exceeded conservative screening criteria established in federal and state regulations. For groundwater these screening criteria are the GWPC, SWPC and RGVC developed by CT DEEP.

In groundwater monitoring performed prior to those sampling events described in this report, groundwater samples were collected and analyzed for pesticides, herbicides, cyanide and semivolatile volatile organic compounds (SVOCs) and these results are presented in the RI. Herbicides and cyanide were not determined to be COCs in soil and were not detected in groundwater so these analyses were not included in subsequent groundwater sampling events. Pesticides are a COC in soil within limited areas of the site but were not detected in groundwater. Analyses for pesticides were not performed during the latest rounds of groundwater monitoring because they are not a COC in groundwater. However, groundwater samples will be collected and analyzed for pesticides within selected monitoring wells post-remediation to comply with the requirements of the CT DEEP. For SVOCs, only PAHs were determined to be COCs in soil and groundwater. Thus, analysis for all SVOCs has not been performed in subsequent groundwater monitoring events but analysis for PAHs in groundwater samples has continued.

2.5.1 PCBs

Total PCBs have only been reported at concentrations above the screening criteria (0.5 µg/L for all criteria) in groundwater samples collected from monitoring wells MW-AH16, MW-AA12, MW-AJ13, and MW-Y15. Total PCBs have exceeded the screening criteria during each of the last four sampling rounds at all four locations. These monitoring wells are located within AOC 1 in an area where the highest PCB impacts to soil have been identified. The highest concentrations of PCBs are detected at MW-AH16 and PCB concentrations determined at this location have ranged from 54.4 µg/L to 105 µg/L over the last four sampling events. PCB concentrations at the other three locations are much less and range from 1.92 µg/L to 15.3 µg/L over the same timeframe.

PCBs were detected in other monitoring wells at the site during the July 2012 and August 2013 monitoring events only and at concentrations less than the screening criteria. In July 2012, PCBs were detected at six other monitoring wells; MW-AA19 (0.00649 µg/L), MW-S15 (0.0203 µg/L), MW-T23 (0.0204 µg/L), MW-V12 (0.0353 µg/L), MW-V16 (0.00531 µg/L), and MW-28 (0.00678 µg/L). PCBs were detected in these wells during the July event only and were non-detect for PCBs in all of the other samples collected. In August 2013, PCBs were detected in only MW-AG10 (0.0202 µg/L) and this is the only detection for PCBs at this location. These other detections for PCBs at the site are one-time occurrences at each of the monitoring wells and the measured concentrations are ten to one hundred times less than the screening criteria.

Thus, PCBs are detected in groundwater routinely at four locations within AOC-1 and these detections exceed screening criteria during each of the sampling events. However, all other monitoring wells are typically non-detect for PCBs with only sporadic single detections at other monitoring locations. From the data collected to date, PCB impacts to groundwater are very limited in extent and there is no evidence for migration of these impacts beyond this limited area or offsite.

2.5.2 Extractable Total Petroleum Hydrocarbons

For these four monitoring events, ETPH was reported at concentrations above screening criteria in groundwater samples from MW-AA12 (July 2012), MW-AH16 (February 2013) and MW-Y15 (August 2012). These are three of the four monitoring wells were PCBs are commonly detected and all are located within an area of high soil impacts in AOC 1. However, ETPH was only detected in each monitoring well one time each and was not detected in any of the other monitoring wells at the site. ETPH impacts at the site are not significant and there is no evidence for migration of ETPH impacts offsite.

2.5.3 Volatile Organic Chemicals

VOCs have been detected at the site but only MEK was ever reported at a concentration above screening criteria. MEK exceeded the GWPC in one sample collected from MW-AA12 in July 2012. MEK was not detected in subsequent groundwater samples collected at this location and reporting limits were less than the screening criteria.

VOCs have not been detected in eighteen of the site monitoring wells including all of those located in the southeast corner where groundwater discharges from the site. In seven other monitoring wells, one VOC was detected during one of the four sampling events and all other VOCs were not detected. The only consistent detection of any VOC is methyl tert-butyl ether (MTBE) at monitoring well MW-BB34. MTBE was detected in all four monitoring events at concentrations less than the screening criteria. However, MW-BB34 is located in the northeast corner of the site where groundwater flows onto the property and the impacts measured at this location are likely due to offsite sources. VOC impacts at the site are not significant as even detections are sporadic and there is no evidence for migration of VOC impacts offsite.

2.5.4 Polyaromatic Hydrocarbons

PAHs have not been detected in nineteen of the twenty-nine monitoring wells sampled at the site and have only been detected at concentrations less than the screening criteria in three other wells. All of the monitoring wells where PAHs have been detected are located within AOC 1 except for MW-T23 and MW-AP28.

PAHs have been reported at concentrations above screening criteria in groundwater samples collected from MW-AA12, MW-AG10, MW-AJ13, MW-AJ19, MW-AM21, MW-T23 and MW-Y15 during one or more of the sampling events. Phenanthrene was detected at concentrations exceeding screening criteria in all of these wells but only exceeds the criteria in more than two sampling events at monitoring well MW-AA12 where detected concentrations of phenanthrene exceeded screening criteria in all four sampling events. Benzo(a)anthracene exceeded screening criteria once in monitoring wells MW-AA12 and MW-T23 and benzo(b)fluoranthene exceeded screening criteria once in monitoring well MW-AA12. All of the monitoring wells where screening criteria were exceeded on at least one occasion are located within AOC 1 except for MW-T23.

PAH impacts to the site are mostly limited to within AOC 1 and, except for phenanthrene at MW-AA12, these measured impacts are sporadic and inconsistent. PAHs have not been detected in groundwater samples collected from the downgradient (southeast corner) at the site. From the data collected to date, PAH impacts to groundwater are very limited in extent and are not consistently measured. There is no evidence for migration of these impacts beyond the limited area of impacts or offsite.

2.5.5 Metals

At least one metal has been reported at a concentration above screening criteria in eighteen of the twenty-nine monitoring wells at the site. However, metals results reported to date do not indicate a consistent pattern of groundwater impacts. The following generally consistent patterns were noted in the metals analytical results:

- Arsenic has been reported at concentrations above screening criteria in samples from MW-S15 during each of the last four sampling rounds. Arsenic is not commonly detected in

groundwater at the site (27 detections in 149 total samples or 18%). However, when detected the concentrations exceed the screening criteria. Other than the sample results from MW-S15, there are no locations where arsenic has been detected more than twice in the last four sampling events and there is no consistent pattern indicating migration of arsenic impacts offsite.

- Barium has been reported at concentrations above screening criteria in samples from MW-AA19 and MW-X17 during each of the last four sampling rounds. Barium is commonly detected in groundwater at the site (149 detections in 149 total samples or 100%). However, detected concentrations exceeding the screening criteria have only been found in three other monitoring wells at the site during only one of the four sample events. There is no consistent pattern indicating migration of barium impacts offsite.
- Various metals, including arsenic, barium, chromium, copper, lead, vanadium and/or zinc have been reported at concentrations above screening criteria in samples from MW-T23 during each of the last four sampling rounds. This well is installed within bedrock and typically has higher turbidity than other monitoring wells at the site when sampled. Both filtered and unfiltered samples for analysis of metals will be submitted for analysis from this well during the November sampling event. The results will be reviewed to determine if the well needs to be redeveloped or replaced.

2.5.6 Screening Criteria Exceedance Summary

For organics, PCBs and PAHs are more commonly reported at concentrations that exceed screening criteria but these impacts are generally limited to AOC 1. The area of highest impacts to soil within AOC 1 is roughly defined by monitoring wells MW-AH16, MW-AJ13, MW-Y15 and MW-AA12. PCBs have not been detected at concentrations exceeding the screening criteria outside of these four monitoring wells. PAHs have been reported at concentrations above screening criteria in two samples collected from MW-T23, phenanthrene in July 2012 and benzo(a)anthracene in August 2013, located southeast of AOC 1. However, these sporadic detections do not indicate migration of impacted groundwater. These findings have generally been consistent throughout the quarterly groundwater monitoring program and that organic groundwater impacts are not migrating offsite.

Metals data collected to date do not indicate a consistent pattern of groundwater impacts exceeding screening criteria. Barium has consistently been found at levels exceeding the screening criteria at MW-X17 and MW-AA19 and arsenic has consistently exceeded the criteria at MW-S15. However, other metals exceedances at the site have been sporadic and inconsistent. Data continue to indicate metals impacts to groundwater do not appear to be migrating from offsite at concentrations above screening criteria.

2.5.7 Groundwater Elevation Contours

The groundwater contours indicate that groundwater flows onto the site from the east and the north and that there is a groundwater mound located beneath Field 3. Groundwater flows off the site in the southeast corner. Groundwater flow contours and the direction of groundwater flow have been consistent throughout the last year of monitoring activities.

AECOM performed an evaluation to investigate the geostatistical nature of groundwater elevation measurements at the Site. The investigation was performed for the purpose of providing additional insight into groundwater contours and to evaluate the presence of the groundwater mound commonly measured on the western portion of the site beneath Field 3. Previous groundwater contour figures have been generated for the site using linear interpolation between groups of three wells. The linear

interpolation method is commonly used but does not account for potential variance in groundwater elevation measurements that may be present and quantifiable. The geostatistical method employed to evaluate groundwater elevation measurements and summarized here quantifies this measurement variance to provide additional insight into the distribution of groundwater contours and the presence of the groundwater mound.

A semivariogram cloud and surface was calculated for groundwater measurements collected in August 2013 using ArcGIS Geostatistical Analyst. The semivariogram cloud is a cross plot of semivariance versus lag distance. A distinct bimodal nature in the geostatistical properties of measurements from the Site was observed, with the fill material and natural materials showing different geostatistical natures. Further, measurement variance from the Site is highly anisotropic, with the major axis of the variance ellipsoid running from southwest to northeast.

Groundwater contours were modeled using the ordinary kriging method (Matheron, 1963), which assumes a stationary but unknown mean for the data (i.e. no trend). The method calculates a best linear unbiased estimator of groundwater contours for a given data set and model semivariogram. The kriging method has several advantages to other methods of groundwater contouring, in that it provides quantitative, unbiased, and smooth contours that may be modeled to the variance properties of the Site data set.

To investigate the distribution of groundwater contours and the groundwater mound commonly observed on the western portion of the Site, a series of groundwater contours were generated based on the calculated semivariance observed in site data. Two semivariogram models were prepared for the evaluation, based on the lower and higher variance distributions calculated using the Site data. Each model was used to generate a separate set of groundwater contours.

Both sets of groundwater contours (higher variance model shown below) clearly display the presence of the groundwater mound on the western portion of the Site and display the same distribution of contours as previous evaluations generated from interpolation of site groundwater measurements. Based on this evaluation, interpolation of site measurements is an accurate method and provides results that are consistent with the geostatistical nature of groundwater measurements at the site.

3.0 Remedial Action Plan

This RAP more fully develops the remedial activities that were described in the FFS as Risk Based Option 3. This risk-based remedial plan is designed in a manner that complies with applicable federal and state regulations and also eliminates exposure pathways that potentially create an unacceptable risk (cumulative risk greater than 10^{-6}) for site users.

The planned remediation consists of removing various depths of soil within areas of natural cover (grass and vegetation) to create protective engineered barriers to prevent exposure to impacted soil with chemical concentrations greater than the determined PRGs. The designed depth of soil removal is based upon current and potential future uses of the site. Soil removal will be performed in areas where soil concentrations in samples from within the specified depth of removal exceed site-specific PRGs. Impacts to soil and groundwater exceeding these PRGs may remain beneath these designed depths but, based upon evaluation of the exposure scenarios in the HHRA, these impacts do not pose an unacceptable risk to current or future site users.

The artificial turf fields, as constructed, provide a sufficient barrier to exposure based upon current and potential future uses (i.e., use of the playing fields by student athletes and coaches and maintenance by groundskeepers). Areas paved with asphalt, as constructed, also provide a sufficient barrier to exposure based upon current and potential future uses. Thus, remediation is not planned for the areas covered by asphalt paving or artificial turf. In addition, environmental land use restrictions will be placed on the site. Any intrusive activities that would penetrate through protective engineered barriers (i.e., designed soil barriers, artificial turf fields, and asphalt paved areas) would require implementation of procedures described in the land use restrictions before they could be performed.

Figure 3-1 shows areas to be remediated by soil excavation under this planned remediation. Because groundwater impacts are not observed to be migrating from the site and do not pose a risk to current and potential future site users, active remedial actions (e.g., removal or treatment of the source materials for these impacts) are not included in this RAP.

Waste storage, handling and disposal requirements are detailed below for both solid and aqueous waste streams generated during the remediation. However, the contractor shall specify landfills to be used in the disposal of soil and other solids and treatment facilities for decontaminating aqueous waste streams. These disposal and treatment facilities will be specified in the Contractor's Work Plan which will be submitted to EPA, CT DEEP, and CT DPH for review prior to starting the remedial work. Personal protective equipment used by site workers during the performance of the work described within will be placed in line soil containers for disposal.

3.1 AOC 1 – PCB Remediation Area

3.1.1 Soil Excavation

AOC 1 is located on the central and western portions of the site and is the area where historical placement of PCB-impacted fill has resulted in PCB and other chemical impacts to soil. Remedial

activities in AOC 1 will include removing potentially accessible surficial soils in the areas of Field 2 and surrounding Fields 3, 4 and portions of Field 5. Soils beneath the artificial turf of Fields 3 and 4 and asphalt pavement are considered inaccessible and remediation is not planned for these areas. AOC 1 remedial areas are depicted on **Figure 3-1**. Cross-sections, depicting planned remediation depth and also indicating PCB analytical results collected to date are included on **Figure 3-2** through **Figure 3-4**. Boring logs for the soil borings used to generate these cross-sections are presented in **Appendix D**. Federal PCB Regulations found in 40 CFR Part 761 are applicable within this remediation area.

In the HHRA, all of AOC 1 was included in the evaluation of exposure scenarios for the Athletic Fields – Fill Area. The evaluation of exposure scenarios for current and potential future site users determined cumulative risks to outdoor maintenance workers and construction workers exceeded the goal of 10^{-6} increased risk for exposure to soil impacted by PCBs. The selected remedial action is the creation of engineered protective barriers to prevent these exposures.

Given that elevations of the asphalt parking lot and the artificial turf fields will not be changed, excavation and backfilling to current grades was selected over backfilling over existing grades to construct these barriers. In addition, only limited excavations will be performed within and near natural turf Fields 2 and 5 and grades need to be returned to existing following remediation so that the fields are flat and even. Thus, excavation and backfilling was selected in these areas as well as backfilling over existing grades is not practicable.

To prevent exposures, the following site uses were used to determine the necessary barrier thickness:

- Outdoor maintenance workers occasionally engage in intrusive activities within the natural turf fields which are limited to the upper foot of soil. Construction of a protective barrier 2 feet thick in these fields is considered necessary to prevent exposures.
- Outside of the athletic fields, outdoor maintenance worker activities are limited to care of ground cover (e.g., grass) which includes mowing and application of fertilizer and other chemicals but no intrusive activities. Thus, a protective barrier 1 foot thick in areas outside of the athletic fields is considered necessary to prevent exposures.
- For construction workers, given the current level of site development, typical construction activities to be performed in the future are likely to only include utility installation. A protective barrier 3 feet thick is considered necessary to prevent exposure for these workers. The area considered likely for future utility installation, as shown on **Figure 3-1**, is the area between the west parking lot and the athletic fields.
- The west parking lot will be extended to the south as shown on **Figure 3-5**. Excavation of soil to 2 feet below the final asphalt grade is deemed necessary to be protective of future construction workers as excavation to this depth will allow for removal of asphalt and repair of subbase layers without exposure to impacted soil.

The horizontal extent of the remediation areas were determined based upon evaluation of analytical and boring log data collected during the remedial investigation. The main driver for remediation in this area is the presence of PCBs at concentrations exceeding the PRGs. Figures developed for AOC 1 in the RI report that present the vertical and horizontal distribution of PCBs and other chemicals in soil are presented in **Appendix E**.

The following estimated soil volumes and weights are anticipated to be excavated from each area of the same excavation depth:

Depth Interval (ft)	Soil Removal (ft)	Extent (SF)	Volume (Cubic Yards)	Tons[1]
0-1	1	19,580	725	1,230
0-2	2	40,060	2,970	5,040
0-3	3	58,620	6,510	11,100
		AOC 1 Total	10,200	17,400

[1] Assumes a unit weight of 1.7 tons per cubic yard for soil

All soil excavated from the 0-3 foot excavation will be stored, handled and disposed of as a PCB Remediation Waste with PCBs ≥50 mg/kg with disposal at a chemical waste landfill as characterization data collected indicate that soil with these PCB concentrations will be encountered within this excavation. A total of approximately 11,100 tons of soil will be disposed of in this manner. Soil from the 1 and 2 foot deep excavations will be stored handled and disposed of as a PCB Remediation Waste with PCBs <50 mg/kg at a non-hazardous waste landfill as the characterization data collected from these areas indicate that PCB impacts to soil are all much less than 50 mg/kg. A total of approximately 6,270 tons of soil will be disposed in this manner. The appropriately permitted landfills for disposal of each of these waste streams will be determined by the selected remedial contractor for the work. The Contractor's Work Plan, which will be provided to EPA, CT DEEP, and CT DPH prior to implementing the remediation, will provide information as to the selected landfills.

3.1.2 Special Procedures for Soil Excavation within AOC 1

Where excavations to a total of 3 feet below ground surface border the artificial turf fields, the total depth of the excavation along this border will be to a depth 1 foot above the base of the concrete curbing that forms the perimeter of the turf fields. Depth of the curbing will be verified in the field but it is anticipated to extend to a depth of two feet below the surface. Thus, it is anticipated that excavation along the perimeter of the artificial turf fields will be performed to a maximum depth of 1 foot below the ground surface. The excavation will be sloped away from this depth at a 2:1 slope until the desired depth of the excavation is achieved. Excavation in this manner will not undermine the artificial turf fields. These limitations will not be required in areas where excavations to a total depth of 1 foot below the ground surface are planned because the base of the curbing will not be exposed.

Current surface elevations in areas that are to be paved following the completion of the remedial work (to the west and south of the western parking lot) do not match final design elevations and are typically higher currently then they will be following remediation. To verify sufficient clean backfill is placed under the asphalt (two to three feet as shown on **Figure 3-5**) the base of the excavations in these areas will be surveyed prior to placing backfill to determine that the appropriate depth has been achieved.

Site improvements will be installed along the west perimeter of the western parking lot. These site improvements include chain link fencing, timber guard rails, water fountains, and site lighting. In addition to these improvements, irrigation lines currently installed within the excavation area will also need to be replaced. The designed supports for the fencing and the guard rails will not penetrate to a

depth greater than 3 feet and no special excavation work is required to install these improvements within clean backfill. However, the footings for the site lighting, potable water supply pipes, and irrigation lines will be installed at depths greater than 3 feet. For the potable water supply pipes and irrigation lines, a trench wide enough for repair work to be performed in the future will be excavated to a depth six inches below the base of these utilities. Excavations will also be performed at the locations for site lighting footings such that these site improvements will be installed within clean backfill.

Following the completion of excavation of soil in AOC 1 as determined by post-excavation verification sampling as described in **Section 3.1.3**, a barrier layer will be placed and marked across the entire base of the excavation. This barrier layer will consist of a 16-ounce per square yard non-woven geotextile overlain by bright-orange polypropylene mesh fencing. M_L marks will be affixed at regular intervals over the barrier layer (no less than one mark per every 1,000 square feet or approximately 120). Any utilities installed within the clean backfill (e.g., irrigation lines, electrical conduits, potable water supply lines) will be marked with a detectable marking tape so that these utilities may be more easily located in the future.

3.1.3 Post-Excavation Verification Sampling

Post-excavation sidewall and base samples will be collected from each of the remediation areas following soil removal. Post-excavation sidewall samples will be collected at a frequency of one sample every 30 linear feet of excavation sidewall. Sidewall samples must be ≤1 mg/kg total PCBs for remediation to be considered complete. If the sidewall samples exceed this remedial goal, excavation will be continued into that sidewall to the prescribed depth for the remedial area until the remedial goal is achieved.

Post-excavation base samples will be collected at a frequency of 1 per every 2,000 square feet of excavation. This reduced frequency is prescribed as the soil beneath the excavation areas has already been extensively characterized. No additional remedial actions will be performed based upon base verification sample analytical results as the prescribed depth of the excavation is already protective of human health for current and future site uses.

Verification samples will also be collected from the concrete curbs of the artificial turf fields. The curbing will be sampled at a frequency of one sample per every 30 linear feet of excavation sidewall using the EPA Region 1 Standard Operating Procedure for Sampling Porous Media. If verification sample results are >1 mg/kg total PCBs, the concrete will be double wash/rinsed following the procedures as specified in 40 CFR Part 761 Subpart S. The concrete will be resampled following the decontamination. If verification results are still >1 mg/kg, the concrete will be painted with two coats of epoxy paint of contrasting color and signed with an M_L mark prior to backfilling. At locations where excavation sidewalls contain both concrete curbing and soil (i.e., the western extent of the 3-foot deep excavation along Fields 3 and 4), soil samples will also be collected from the earthen sidewall at a frequency of one sample per every 30 linear feet. However, no additional excavation will be performed based upon the results of these samples.

All confirmatory soil samples will be submitted to a state-certified laboratory under chain-of-custody protocol and analyzed for PCBs via EPA Method 8082 using Soxhlet extraction. All sample locations and results will be recorded in a manner such that they can be recorded on the land records following the completion of the remediation.

3.1.4 Waste Handling, Storage and Disposal

It is anticipated that excavated soils from AOC 1 will be direct-loaded into lined trucks and transported from the site. Soil loading and transport across the site will be conducted using established construction routes. No soil from these excavations will be stockpiled. If the soil is not live-loaded into trucks it will be placed into lined rolloff containers. The rolloff containers will be signed with the M_L mark and the date on which soil was first placed within the rolloff will be indicated on the M_L mark. Rolloffs not currently in use will be stored within a fenced and controlled area of the site with the cover tarp in place so that rainwater cannot enter the rolloff. Rolloffs will be stored onsite for a period of less than 30 days before they are transported offsite for disposal.

3.1.5 Equipment Decontamination

All equipment that has contacted PCB-impacted soil shall be decontaminated before being moved to another area or removed from the site. All non-porous surfaces (e.g., metal buckets on excavators) will be double wash/rinsed in accordance with the procedures specified in 40 CFR Part 761 Subpart S. Solid wastes generated during excavation or decontamination will be placed in soil disposal containers. Aqueous wastes will be containerized and tested prior to shipping offsite. Aqueous wastes with >0.5 µg/L total PCBs will be sent to an appropriately permitted facility for decontamination. The selected Contractor will provide the name of this facility in their Contractor's Work Plan to be submitted to EPA, CT DEEP and CT DPH prior to performing the work.

3.1.6 Site Restoration

Following receipt of post-excavation sampling results indicating that excavation is complete, restoration of the remediation areas within AOC 1 will be done as indicated on **Figure 3-5**. Fields 2 and 5 are currently active baseball and softball fields, respectively. The proposed remedial actions will disturb portions of each field. Restoration of Fields 2 and 5 will include placement of sod to the outfield areas, placement of infield material (typically clay, sand and silt mix) to any disturbed infield areas and replacement of irrigation components to the field. All field fencing and foul poles will also be replaced as necessary. A detailed description of the baseball and softball field restoration will be included in the remediation bidding documents which will be part of the Contractor's Work Plan.

Field 2 may be restored as an artificial turf field. If this method of restoration is selected, a Modification to this RAP will be submitted to EPA, CT DEEP, and CT DPH for review and approval. This modification, if necessary, will describe soil excavation, handling and disposal for soil to be removed as part of the artificial turf field construction that is not already covered under this RAP. The Modification will also include construction details for the artificial turf field that will demonstrate that the construction is sufficient to provide a barrier to exposure to impacted soil.

Additional improvement will be installed as part of site restoration. Construction of asphalt paving, site lighting, and irrigation lines were previously discussed but other improvements include installation of new or restoration or existing access ways to the athletic fields and installation of new bleachers. Access ways to the athletic fields will be constructed of materials that have greater permeability than asphalt so as to limit runoff but will still be able to support anticipated loads.

3.1.7 Completion - Engineered Barrier

Upon completion of remedial activities in AOC 1, the backfilled clean material, synthetic turf fields, asphalt areas and remaining un-impacted surficial materials will act as a protective engineered

barrier to prevent exposure to remaining impacted soils. The engineered barrier will eliminate human exposure pathways, such as direct contact dermal exposure, ingestion and inhalation.

A long-term groundwater monitoring plan and engineered barrier inspection and maintenance plan will be required following completion of remedial activities to maintain and monitor the effectiveness of the remediation and the integrity of the engineered barrier. An Environmental Land Use Restriction (ELUR) will also be required to be placed on the site to limit any future disturbance of the engineered barrier. Further information pertaining to post-remediation groundwater monitoring, engineered barrier maintenance and an ELUR are included in **Section 7.0**.

3.2 AOCs 2 through 6 – Additional PCB Remediation Areas

3.2.1 Soil Excavation

Remedial activities in AOCs 2 through 6 will include excavation of potentially accessible surficial soils in the area of soil samples SS-248 and SS-249, located in grids R21 and S21, respectively, on **Figure 3-1**. These two planned excavations are located south of the fenced area housing site utilities and along the northern edge West Brothers Brook stream channel. For the HHRA, this portion of the site was included under exposure scenarios for the Athletic Fields – Fill Area. Excavation in these areas will be conducted to remove areas where PCBs were reported at concentrations above PRGs for outdoor maintenance workers. Federal PCB Regulations found in 40 CFR Part 761 are applicable within this remediation area. Other COCs identified within AOCs 2 through 6, arsenic, lead, and ETPH, are found at depth and were not found to pose an excessive cumulative risk under any of the exposure scenarios evaluated. However, the presence of these COCs will be recorded on the land records as part of the Environmental Land Use Restrictions that will be placed on the site.

Soil excavation with restoration to current grades is the selected remedial action as capping cannot be performed within this area as it is within the 100-year flood plain. Soil excavation will be completed at approximately 2 ft bgs. Approximately 100 cubic yards (CY) (170 tons) of soil will be excavated from these two excavation areas.

3.2.2 Post-Excavation Verification Sampling

Post-excavation verification sampling for these two small remedial areas will be performed as per 40 CFR Part 761 Subpart O. The verification sampling grid will be oriented on the north-south magnetic axis centered upon the middle of each of the excavations. Remediation sampling will be considered complete when all verification sample results are ≤1 mg/kg total PCBs. All verification samples will be submitted to a state-certified laboratory under chain-of-custody protocol and analyzed for PCBs via EPA Method 8082 using Soxhlet extraction.

3.2.3 Waste Handling, Storage and Disposal

Based on their location on-site, it is anticipated that excavated soil from these areas will be direct-loaded into trucks and transported to a designated disposal facility. Soil from these excavations will not be stockpiled and may be placed in lined rolloff containers if not live loaded into trucks. Rolloffs will be marked and stored as indicated in **Section 3.1.4**. Excavated soil will be handled as PCB remediation waste <50 mg/kg total PCBs and transported to a licensed facility permitted to accept such waste.

3.2.4 Equipment Decontamination

All equipment that has contacted PCB-impacted soil shall be decontaminated before being moved to another area or removed from the site. All non-porous surfaces (e.g., metal buckets on excavators) will be double wash/rinsed in accordance with the procedures specified in 40 CFR Part 761 Subpart S. Solid wastes generated during excavation work or decontamination will be placed in soil disposal containers. Aqueous wastes will be containerized and tested prior to shipping offsite. Aqueous wastes with >0.5 µg/L total PCBs will be sent to an appropriately permitted facility for decontamination. The selected Contractor will provide the name of this facility in their Contractor's Work Plan to be submitted to EPA, CT DEEP and CT DPH prior to performing the work.

3.2.5 Site Restoration

Following receipt of post-excavation sampling results, these areas will be restored to their current condition. Clean backfill will be placed in the excavation, followed by either placing sod or topsoil and grass seed to restore the landscaped cover. These areas will be restored to their existing grades. No recording on land records will be required as all impacts >1 mg/kg will be removed from the excavation areas.

3.2.6 Completion

Following restoration, the excavation areas will be inspected to determine that ground cover (i.e., grass) is sufficient to prevent erosion of soil into the nearby brook. However, long-term inspection and maintenance of these excavation areas will not be part of the site-wide post-remediation inspection program as all PCB impacts >1 mg/kg will have been removed and the soil backfill placed will not be serving as a protective engineered barrier.

3.3 AOC 8 – Chlordane Remediation Area

3.3.1 Soil Excavation

Remedial activities in AOC 8 will include excavation of potentially accessible surficial soils in the area of soil samples SS-243, SS-244 and SS-279, located along the northern shore of Cider Mill Pond (**Figure 3-1**). This area of the site was included in the evaluation of exposure scenarios in the Southern Area. Excavation in this area will be conducted to remove soil where chlordane was reported at concentrations above the calculated site-specific PRGs for outdoor maintenance workers. The federal PCB regulations do not apply to this excavation area as there have been no detections of PCBs within the excavation area and all PCB detections in surrounding areas were <1 mg/kg.

Soil excavation will be completed to 1 foot bgs and approximately 85 CY (145 tons) of soil will be excavated from this area. Excavation with restoration to current grades is the selected remedial alternative as capping in this area cannot be performed because it is within the 100-year floodplain.

3.3.2 Post-Excavation Sampling

Post-excavation soil samples will be collected from the base and sidewalls of the excavation following soil removal. Five post-excavation soil samples will be collected (approximately one per every 450 SF of excavation) to confirm that the remedial objectives were achieved. The excavation will be expanded if any of the verification sample results exceed the remedial goal. Soil samples will

be submitted to a state-certified laboratory under chain-of-custody protocol and analyzed for pesticides via EPA Method 8081.

3.3.3 Waste Handling, Storage and Disposal

Excavated soils from this area will be direct-loaded into trucks and transported to a designated disposal facility permitted to accept such waste. If not live-loaded, soil from this excavation may be placed into stockpiles. Stockpiles will be constructed and covered in a manner that prevents runoff of soil during storm events or contact with clean materials beneath the stockpile.

3.3.4 Equipment Decontamination

All equipment that has contacted chlordane-impacted soil shall be decontaminated before being moved to another area or removed from the site. All non-porous surfaces (e.g., metal buckets on excavators) will be brushed clean so that no visible dirt remains. Other materials will either be decontaminated in the same manner or disposed of with the soil from the excavation.

3.3.5 Site Restoration

Following receipt of post-excavation sampling results indicating that remedial goals have been achieved, this area will be restored to its current condition. Clean backfill will be placed in the excavation, followed by either placing sod or topsoil and grass seed to restore the landscaped cover. This area will be restored to its existing grade. Post remediation inspection will be performed to determine that the ground cover has been established and prevents erosion of soil into the nearby surface water body. However, long-term inspection and maintenance of this area will not be performed as the soil cover is not an engineered protective barrier.

3.4 AOC 13 – Arsenic Remediation Area

3.4.1 Soil Excavation

Remedial activities in AOC 13 will include excavation of potentially accessible surficial soils (0 to 1 ft bgs) in five areas in the southeastern portion of the site and one area to the north of Field 1. AOC 13 excavation areas are depicted on **Figure 3-1**. In the HHRA, exposure scenarios for current and future site users were evaluated as part of the Southern Area. For arsenic, a PRG of 2.65 mg/kg was determined for an outdoor maintenance worker. However, this PRG is below the background arsenic concentration of 20 mg/kg which was determined for this portion of the site. Thus, remediation will be performed to remove arsenic concentrations greater than the background concentration. The federal PCB regulations are not considered to be applicable to these excavation areas as PCBs have not been detected in any of the excavation areas or the vicinity at concentrations >1 mg/kg.

Soil excavation will be completed to approximately 1 ft bgs in the areas shown on **Figure 3-1**. Excavation with restoration to current grades was selected as some of the excavation areas are within the 100-year floodplain. Approximately 710 CY (1,200 tons) of soil will be excavated from this area.

3.4.2 Post-Excavation Sampling

Post-excavation soil samples will be collected from excavation sidewalls in this area. Excavation base samples will not be collected as soils greater than 1’ bgs have been sufficiently characterized

during previous investigations in AOC 13. Approximately ten post-excavation sidewall soil samples will be collected to confirm that the remedial objectives were achieved. Soil samples will be submitted to a state-certified laboratory under chain-of-custody protocol and analyzed for arsenic via EPA Method 6010.

3.4.3 Waste Handling, Storage and Disposal

Based on the location of AOC 13 excavation areas in highly wooded and limited access areas, it is anticipated that excavated soil from these areas will be stockpiled at a designated area on-site prior to transportation to an approved disposal facility permitted to accept such waste.

Additional waste streams generated during remediation in AOC 13 will include trees and shrubbery generated during clearing of the planned excavation areas. Removed trees and shrubbery will be chipped and used for ground cover at the site following completion of excavation activities, or alternatively, may be treated as land clearing waste. If appropriate (based on analytical results), land clearing waste may be processed as mulch and stored by the Town for future landscaping use. CTDEEP promotes such use to reduce the disposal burden on landfills and resource recovery facilities.

3.4.4 Equipment Decontamination

All equipment that has contacted arsenic-impacted soil shall be decontaminated before being moved to another area or removed from the site. All non-porous surfaces (e.g., metal buckets on excavators) will be brushed clean so that no visible dirt remains. Other materials will either be decontaminated in the same manner or disposed of with the soil from the excavation.

3.4.5 Site Restoration

Following receipt of post-excavation sampling results, this area will be restored. Clean backfill will be placed in the excavation followed by topsoil. All tree and brush clearing necessary to complete the remediation will be approved by the Town of Greenwich Tree Warden prior to implementing remedial actions. It is anticipated that landscaping, including the planting of replacement trees, shrubs and ground cover, will be required for areas that are currently vegetated. The objective of restoration in this area will be to maintain aesthetics as well as prevent any erosion that may occur as a result of clearing and tree removal in this area. Areas in AOC 13 that are currently clear are anticipated to be restored to their current condition. Additional details pertaining to the restoration of wooded areas will be included in the remediation bid documents. Inspections will be performed to determine that all vegetation planted has survived and provides sufficient cover to prevent soil erosion. However, long-term inspection and maintenance will not be performed as the soil fill placed will not serve as an engineered protective barrier.

3.4.6 Underground Storage Tank Removal

A UST was identified in AOC 13 during a previous investigation. During utility clearing for soil boring placement, GPR identified what appeared to be a former fuel oil UST likely associated with one of the former residential properties at the Site. It should be noted that the age, suspected use and anticipated size of this UST precludes any registration with the CT DEEP UST Program. However, removal and any post-removal sampling will be conducted in accordance with CT DEEP guidance for evaluating former USTs. Removal and disposal of this UST will be conducted during remediation efforts in AOC 13. The following general procedure will be followed during the UST removal:

1. The location of the UST will be confirmed;
2. The UST will be uncovered and any remaining liquid will be removed;
3. The inside UST will be cleaned;
4. Removal of the UST;
5. Removal of any impacted soil (if present); and
6. Backfill tank grave and restore area.

The removal of the UST and the tank grave will be observed and documented. If soil impacts are observed, impacted soil will be removed to the extent possible and transported to an approved facility permitted to accept petroleum waste. If impacted soil is excavated, up to five soil samples may be collected from the base and sidewalls of the excavation to confirm the effectiveness of the remedial efforts. Samples will be analyzed for VOCs, PAHs, ETPH and/or metals.

3.5 Benzo (a) Pyrene Areas

3.5.1 Soil Excavation

Remedial activities in the BAP areas will include excavation of potentially accessible surficial soils from three areas on the southern portion of the site and three areas on the northern portion of the site (Fields 6 and 7). In the HHRA, PRGs were developed for BAP in both the Southern Area and Athletic Fields – Non-Fill Area.

BAP excavation areas are depicted on **Figure 3-1**. Excavation in these areas will be conducted to remove areas where BAP was reported at concentrations above the calculated PRG of 0.159 mg/kg. All BAP concentrations determined in soil were less than the CT DEEP Residential Direct Exposure Criteria which was used as a screening standard. However, the HHRA determined a PRG less than this value for the Site Visitor exposure scenario. Thus, BAP impacts greater than the PRG will be excavated from surficial soil (0 to 1 ft bgs). PCBs have not been detected at the area of these excavations at concentrations >1 mg/kg. Thus, the federal PCB regulations are not applicable for these excavations.

Because of the small areas of these excavations, soil will be excavated and then backfilled to current grades with clean materials. Soil excavation will be completed to approximately 1' bgs at all of the locations shown on **Figure 3-1**. Approximately 360 CY (610 tons) of soil will be excavated from these areas.

3.5.2 Post-Excavation Sampling

Post-excavation base and sidewall soil samples will be collected on an as-needed basis where BAP has not been evaluated in soils greater than 1' bgs or at the horizontal extent of the excavation. Approximately fifteen post-excavation soil samples will be collected to confirm that the remedial objectives were achieved. Soil samples will be submitted to a state-certified laboratory under chain-of-custody protocol and analyzed PAHs via EPA Method 8270 with selected ion monitoring so that reporting limits are low enough to indicate that remedial goals have been achieved.

3.5.3 Waste Handling, Storage and Disposal

Based on the location of the BAP excavation areas in wooded and/or limited access areas, it is anticipated that excavated soil from these areas will be stockpiled at a designated area on-site, prior to transportation to an approved disposal facility permitted to accept such waste.

Additional waste streams generated during remediation in BAP-impacted areas will include trees and shrubbery generated during clearing of some of the planned excavation areas. Removed trees and shrubbery may be saved for replacement following completion of excavation activities, or alternatively, may be treated as land clearing waste. If appropriate (based on analytical results), land clearing waste may be processed as mulch and stored by the Town for future landscaping use.

3.5.4 Equipment Decontamination

All equipment that has contacted BAP-impacted soil shall be decontaminated before being moved to another area or removed from the site. All non-porous surfaces (e.g., metal buckets on excavators) will be brushed clean so that no visible dirt remains. Other materials will either be decontaminated in the same manner or disposed of with the soil from the excavation.

3.5.5 Site Restoration

Following receipt of post-excavation sampling results, these areas will be restored to their current condition. Clean backfill will be placed in the excavation, followed by placing sod or topsoil and grass seed to restore the landscaped cover. Additionally, trees and shrubbery will be replaced to the satisfaction of the Town. Additional details pertaining to the restoration of wooded areas will be included in the remediation bidding documents. These areas will be restored to its existing grade. Inspections will be performed to determine that all vegetation planted has survived and provides sufficient cover to prevent soil erosion. However, long-term inspection and maintenance will not be performed as the soil fill placed will not serve as an engineered protective barrier.

3.6 Post-Remediation Conceptual Site Model

Upon completion of the soil remediation, the significant exposure pathways identified for the site in the HHRA will be eliminated. These include the potential direct exposure migration pathways of dermal contact, ingestion, and inhalation.

In order to monitor the effectiveness of soil remediation and to evaluate groundwater compliance applicable remediation criteria, a post remediation groundwater monitoring program will be implemented following the completion of remedial activities. Post-remediation groundwater monitoring is further described in **Section 7.2**.

An ELUR will be recorded on the land records to ensure that remedial efforts will not be disturbed by future site activities. If disturbance is required, the Town will request a temporary release of the ELUR and will provide soil management plans to CTDEEP. The planned ELUR is described further in **Section 7.3**.

4.0 Remediation Planning

The following sections describe the remediation planning tasks that will be performed prior to and/or in conjunction with the implementation of the remedial action plan.

4.1 Health and Safety

AECOM has prepared a HASP for activities previously conducted at the site which meets the requirements of 29 CFR 1910.120. Prior to initiating remediation activities, the existing HASP will be updated to include activities described in this RAP. AECOM employees will conduct activities in accordance with the HASP. Remediation service providers contracted to the Town will be required to develop and follow their own HASP during all remediation activities. All remediation activities will be conducted by personnel that have completed 40-hour OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) training.

The objective of the HASP will be as follows:

- To protect the health and safety of on-site personnel.
- To protect the public from exposure to materials generated during remediation activities.

The updated HASP will include the following:

- Brief Site Description
- Site Safety Hazards
- Task Hazard Analysis
- Chemical Compounds of Concern
- Project Personnel
- Site Training/Medical Surveillance Requirements
- Personnel Protective Equipment (PPE) Requirements
- Air Monitoring Requirements
- Decontamination Procedures
- Work Zones
- Remediation Derived Waste Disposal/Handling
- Emergency Response
- Special Operations Safety Requirements
- Emergency Resources
- Generic First Aid

4.2 Notification and Certification

In accordance with §761.61(a)(3)(E), this RAP serves as the Notification by the Town to the EPA Region 1 Coordinator and will be provided to state (CT DEEP and CT DPH) and local environmental officials (Town Health Department). Attached in **Appendix F** is a written certification, signed by a representative of the Town, the owner of the property where the cleanup site is located, indicating that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location designated in the certificate, and are available for EPA inspection.

4.3 Permits and Approval

The following permits and approvals from federal, state or local governmental agencies and boards will be applied for and received prior to conducting remedial actions at the site:

1. EPA approval of a Risk Based Corrective Action (40 CFR § 761.61(c)). This Notification serves as the application for this Approval. All required information for the Notification is included within this RAP or the RI report which is attached as **Appendix A**.
2. Town of Greenwich Inland Wetlands and Watercourses Agency (IWWA) approval for performance of activities that will disturb soil within the 100-foot buffer zone of a delineated wetlands or watercourse.

The site is not currently enrolled in any CT DEEP regulatory program (property transfer program or voluntary remediation program) and environmental conditions are not subject to any orders or directives issued by CT DEEP. Therefore, proposed remediation activities do not require CT DEEP review or approval. However, AECOM and the Town will continue to provide updates and respond to any inquiries by CT DEEP pertaining to remediation activities at the site. The Town will continue to seek concurrence from CT DEEP and CT DPH that the remedial actions are appropriate for the site given its current and potential future uses.

Depending on the total area disturbed during remediation, it may be necessary to register the project for and follow the CT DEEP "General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities." The area to be disturbed as currently designed does not require this general permit but this requirement will be evaluated as the project progresses. In addition, depending on the specifics of the waste staging and handling activities, it may be necessary to register the project for and follow the requirements of the CT DEEP "General Permit for Contaminated Soil and/or Sediment Management." PCB-impacted soil will be stored temporarily onsite in lined containers and a permit for these activities is not anticipated. However, the means and methods for handling of other impacted soil to be excavated will be left to the Contractor performing the work and a soil management general permit may be required.

No work is proposed within the high-water mark of a watercourse or wetlands. Remediation of sediments on the site may be performed but additional investigation and data analysis is being performed. Thus, no permit application will be made to the United States Army Corp of Engineers (USACE) at this time. If remediation of on-site sediments is performed, the need for a permit from USACE to perform the work will be assessed.

4.4 Public Involvement Plan

The CT DEEP RSRs require notice of planned remediation activities to be communicated to the public prior to initiation of remedial activities at sites enrolled in CT DEEP remediation programs or under CT DEEP order. The prescribed process includes a requirement for public notice of remediation activities to be placed in a local newspaper having substantial circulation in the area of a remediation site a minimum of 45 days prior commencement of remediation activities and notification to the Director of Public Health for the town in which remedial activities are planned. Additionally, either notice of the planned remediation activities must be mailed to each owner of record for properties abutting the parcel, at the address for such property on the last-completed grand list for the town or a sign must be placed at the site which is visible from the road which states that an environmental clean-up is in progress at the site. In accordance with the referenced General Statute, if a sign is posted at the site, it will not be less than six feet by four feet, clearly visible from the road and include a name and telephone number of a person who can provide additional information about the project.

Although the planned remediation activities at the site are not subject to any CT DEEP approvals, and, while the site is not currently enrolled in any CT DEEP remediation programs or subject to any orders, public notice of the planned remediation activities will be completed as described above. Also, following submittal of this RAP, the Town will schedule a public meeting to hear questions, comments and concerns pertaining to the planned remedial activities. Following review of this RAP, the EPA may also conduct a 30-day public notice/comment period. As the site is an active school building and soils having PCB concentrations greater than 1 mg/kg will remain at the site following remediation, a public outreach program will be required.

AECOM in conjunction with the Town Board of Education (BOE) and Department of Public Works (DPW) have set up a communication system of posting public updates on the BOE website. These updates have been an effective way of communicating investigation activities to the community and will continue to be prepared leading up to and during the remediation activities. Public communications to be performed in support of this RAP are described in **Section 6.2**.

4.5 Dust Control and Air Monitoring

Air monitoring will be performed for the duration of the remedial activities in accordance with the procedures established in the Perimeter Air Monitoring Plan (PAMP) that will be established for the site. The PAMP will be submitted to EPA and CT DEEP prior to the start of remedial actions for review and approval or concurrence. Air monitoring will be conducted to monitor ambient air conditions during soil excavation activities and to protect the surrounding community from any airborne emissions generated as a result of the remedial activities. The air monitoring program will include continuous particulate matter (PM_{10}) monitoring via monitoring stations deployed at select locations along the site perimeter and downwind of the work areas. Proposed air monitoring locations are depicted on **Figure 4-1**. Monitoring results will be reviewed in real-time and compared to airborne dust and particulate action levels established in the PAMP. Monitoring results will be evaluated to determine if dust control measures are required. The air monitoring program will consist of the following:

- Preparation of a PAMP which will be submitted to EPA and CT DEEP for review and approval or concurrence.

- Real-time monitoring for PM_{10}.
- Hand-held and observational monitoring for PM_{10} and visible dust (as necessary).
- Continuous meteorological monitoring.
- Baseline monitoring program.
- Quality assurance and quality control (QA/QC).
- Reporting.

If air monitoring indicates that dust control measures are required (i.e., action levels have been exceeded), water will be sprayed on soil in the work area to mitigate airborne migration of particulates. Water will also be sprayed onto high-traffic areas, such as temporary construction/trucking routes in the work areas to mitigate dust emissions caused by vehicular traffic.

4.6 Sedimentation and Erosion Control

Prior to excavation of impacted soil, an erosion and sedimentation control system (hay bales and/or silt fencing) will be installed around the designated work areas. Site erosion and sedimentation controls will be installed and maintained in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control. Sediment and erosion control plans will be developed in detail in the application for a permit from the Town IWWA. Copies of the approved permit application will be provided to federal, state, and local regulatory authorities.

4.7 Decontamination

Items requiring decontamination during and following the completion of the remedial activities include heavy equipment used to perform the remedial actions such as soil excavators and backhoes, and any equipment used for transporting impacted material across the site, such as loaders and dump trucks. All decontamination activities will be conducted in accordance with §761.79(c)(2). Non-porous metal parts of equipment that have contacted soil classified as PCB Remediation Waste will be double washed/rinsed in accordance with the procedures specified in 40 CFR Part 761 Subpart S. The decontamination area will be located as to facilitate ease of movement and access for on-site equipment. The proposed location of the decontamination area is depicted on **Figure 4-1**.

All vehicular traffic entering and leaving the site will utilize the established construction entrance where an anti-tracking pad will help to prevent tracking of material from the work area onto the street. The anticipated construction entrance and trucking route is shown on **Figure 4-1**.

4.8 Site Restoration

Following completion of the remedial activities, the site will be restored to conditions as indicated on **Figure 3-5** and to the satisfaction of the Town per the remediation contractor bidding documents. Restoration activities will include:

- Placement of clean backfill material into the excavated areas. Designated excavation areas will be backfilled to existing grade with clean back-fill imported to the site. Excavation areas to be paved will be backfilled to the designed grade with clean backfill and suitable subgrade and then paved in accordance with the contract documents.
- Placement of topsoil and grass. Proposed excavation areas on the northern portion of the site (Fields 6 and 7), the central portion of the site (Fields 3 and 4) and surrounding the football stadium (Field 1), currently have grass cover. These areas will be restored to their current conditions with either sod or grass seed.
- Planting of trees and shrubbery. Proposed excavation areas on the southeastern portion of the site are located in heavily wooded areas. These areas will be restored by placement of new plantings to the extent practicable. The extent of restoration in these areas will ultimately be determined by the Town and described in the remediation bidding documents. Additional plantings will be performed around the perimeter of the west parking lot.
- Restoration of Field 2. Field 2 is currently an active baseball field including a diamond and outfield. The proposed remedial activities will disturb a large portion of this area. Restoration of Field 2 will include placement of sod in the outfield areas, placement of infield material (typically clay, sand and silt mix) to any disturbed infield areas and repair of any damages drainage and sprinkler components to the field. All field fencing and foul poles will also be replaced as necessary. Field 2 may also be restored with artificial turf. A detailed description of the baseball field restoration will be included in the remediation bidding documents.

4.9 Site Security

Temporary fencing will be used to secure the work area(s) during remediation activities. Signage will be used to alert the public to the site conditions, the nature of the project activities and to provide contact information. Updates pertaining to remediation activities, including closure of the school athletic fields during the work, will be also be communicated to the community via public updates posted on the Greenwich Public Schools website and distributed via electronic mail, as was done during previous environmental work.

4.10 Demobilization

Environmental contractor equipment, excess materials and wastes shall be removed from the site following completion of soil remediation activities during each phase.

5.0 Sampling and Analysis Plan

Soil sampling during and following remediation activities will include post-excavation soil quality sampling, sampling of clean fill materials prior to their delivery to the site and waste characterization sampling for soil disposal. The sampling and analysis plan will be submitted to the EPA in a Quality Assurance Project Plan (QAPP) for review and approval prior to implementation of remediation activities.

5.1 Post-Remediation Soil Quality Evaluation Sampling

Post-remediation soil quality evaluation sampling will be conducted as described in **Section 3.0** of this RAP.

5.2 Clean Fill Sampling

Prior to delivery of imported backfill materials to the site, representative samples will be collected and analyzed. The sampling frequency for clean fill materials to be brought on site will be one sample per every 2000 CY. Based on the anticipated volumes of material to be imported, approximately seven to eight composite samples of imported material will be submitted under chain of custody for laboratory analysis. As an alternative, the suppliers may issue recent analyses for materials from the same source. All data will be reviewed and approved prior to delivery of off-site materials to the site.

Clean fill material will be analyzed for the following parameters: VOCs by EPA method 8260, SVOCs by EPA Method 8270, ETPH, pesticides by EPA Method 8081, PCBs by EPA method 8082 and CT DEEP metals by EPA Method 6000 and 7000 series. Synthetic precipitation leaching procedure (SPLP) analyses will also be conducted on select samples based on the total mass analytical results.

5.3 Waste Characterization Sampling

Waste characterization sampling will be performed when necessary to supplement existing information and data for the purposes of satisfying the permit requirements of the disposal facilities. Sampling frequency and analytical parameters/procedures will be in accordance with these disposal facilities requirements. Waste characterization samples will be submitted under chain of custody for laboratory analysis.

5.4 Sampling Protocol

The typical equipment requirements and collection procedures used to sample soil are described below.

<u>Equipment</u>

- Stainless Steel Trowels, Spoons, or Scoops
- Stainless Steel Bowls
- Sample Containers (provided by the laboratory)

Sample Collection Procedures

Soil samples will be collected according to the following procedure. Changes to these procedures will be recorded in the field logbook.

1. Decontaminate sampling equipment.

2. Record the weather conditions and other notable site conditions.

3. Sketch and record the sampling location and conditions on the site map and in the field notebook.

4. Photograph the sampling location and conditions.

5. Collect the fill sample in a manner that is appropriate for the depth of the samples and the physical access.

6. Samples for the analysis of VOCs should not be composited or mixed. These samples should be placed into sample containers as quickly as possible with minimal disturbance. Sample containers should be filled to minimize headspace.

7. Mix the remainder of the sample. Fill containers at least ¾ full for all parameters.

8. Immediately label and refrigerate/ice the sample.

9. Record GPS location of sample and record in logbook.

10. Submit the samples to the laboratory under chain of custody protocol.

Documentation

The following information is typical of that documented and reported in the field logbook when collecting confirmatory samples:

- Description of the sample that is being submitted to the laboratory including the physical characteristics of the sample (e.g., color, odor, and texture), and any unusual characteristics.

- Type of sample (grab or composite).

- Sample designation and location.

5.5 Laboratory Analysis

All proposed laboratory analyses will be performed by a laboratory certified to perform such analyses in the State of Connecticut. Targeted laboratory reporting limits will be below applicable remediation, verification, and/or disposal criteria and may be considered unusable if target reporting limits are not met. The Standard Operating Procedures (SOPs) laboratory protocols specific to the laboratory subcontractor will be applied. Details regarding the laboratory analytical methods will be provided in the QAPP that accompanies this project.

5.6 Quality Assurance/Quality Control

The analytical laboratory will be required to perform all internal quality control procedures that are specified in the analytical methods. These include, but are not limited to:

- Blanks – The laboratory will analyze method blanks prepared and analyzed with each set of samples. These are a check of the accuracy of the system and indicate if there are positive biases.

- Calibration Checks – These are standards, generally from a different source than the calibration standards that are analyzed along with the samples. The purpose of the calibration checks are to determine if the analytical equipment is functioning properly.

Field QA/QC samples will be submitted along with the laboratory samples. A description of each of the sample QC types is described below:

- Field duplicates – Field duplicates provide an indication of the overall precision of the field sampling and analytical method. Approximately one field duplicate will be collected for every 20 samples analyzed.

- Matrix Spike/Matrix Spike Duplicates – Matrix spike and matrix spike duplicate (MS/MSD) samples are used to evaluate the performance of an analytical method to the specific sample matrix being tested. Approximately one MS/MSD sample will be collected for every 20 samples analyzed.

- Equipment Blank – Equipment blanks are used to evaluate decontamination procedures for field sampling equipment. Preparation of an equipment blank will include pouring analyte-free water over/through decontaminated field sampling equipment and containerizing the rinseate for analysis.

Upon receipt of the laboratory data, AECOM will perform a review of the data to evaluate its usability. This will include checking of such items as:

- Holding times;

- Field and laboratory blanks;

- Field and laboratory duplicates;

- Surrogate recoveries, if applicable;

- Calibration checks;

- Spike recoveries, if applicable, and

- Analytical method detection limits (MDLs).

Items such as gas chromatography/mass spectrometry (GC/MS) tuning, initial calibrations, calculations, and raw data will be checked by the laboratory. The SOP laboratory protocols for the project analytical laboratory will be applied.

6.0 Field Documentation and Community Interaction

AECOM, on behalf of the Town, will be on-site during the planned remediation activities to maintain a record of the activities performed, to conduct perimeter air monitoring, and to perform verification sampling. AECOM will be responsible for documenting that the work is completed in accordance with the specifications of this RAP and for providing this information for inclusion in the Remedial Action Report (see **Section 7.1**) to be completed after the completion of remediation activities.

6.1 Field Documentation

The following list identifies the specific documentation and reporting requirements that will be required for this project.

- Documenting completion of remedial actions at each area, including verification sampling as described in this RAP;
- Surveying, performed by a Connecticut licensed surveyor, of all verification sample locations and the extent and limits of all excavations;
- Maintaining an accounting of materials entering and leaving the site, including waste soils and other materials;
- Photographic documentation of completed excavations, completed remediation areas, and other pertinent observations;
- Documenting that all work activities are conducted in accordance with the HASP and the PAMP, including perimeter air monitoring and any implemented dust control measures;
- Documenting segregation, storage, and accounting of wastes that may be stockpiled at the site;
- Documenting and reporting of any disruption/damage to utility structures;
- Documenting that erosion control and site security measures are installed prior to commencing excavation activities and adequately maintained throughout the project;
- Maintaining transportation/disposal documentation including waste manifests and certifications; and
- Documenting decontamination prior to demobilization.

6.2 Community Interaction

Project updates will be prepared and submitted to the community, EPA, CT DEEP, and CT DPH prior to implementing remedial activities, during the performance of the work, and following the completion of each phase of the remediation. These project updates will be distributed in the same manner as project updates already prepared and disseminated for the remedial investigation performed at the site. The project updates will include a summary of activities to be performed, work completed to date, and a description of the schedule moving forward.

The community will also be provided with a central point of contact during the remediation. The point of contact, the website established for the project, will give the community an opportunity to post any

questions, comments, or concerns they have concerning the implementation of the remediation project. Concerns raised on the website will be discussed during daily safety meetings held with the remediation contractor on the site and documented in field records. The Town will work to post written responses to comments on the website as received.

7.0 Post-Remediation Activities

Post remediation activities to be performed include:

- Preparation and submittal of a Remedial Action Report (RAR) within 60-days of completion of all remediation activities at the site;
- Inspection and maintenance of all engineered barriers either constructed during remediation or already in place (e.g., artificial turf fields 3 and 4);
- Groundwater monitoring performed to verify that groundwater impacts measured at the site are not migrating offsite;
- Establishing Environmental Land Use Restrictions for the site; and
- Establishing a Financial Surety in accordance with federal and state regulations.

The post-remediation activities described below are for the entire site and include activities required to be performed following the separate MISA remediation. No separate inspection, maintenance, or monitoring will be required for the MISA remediation.

7.1 Remedial Action Report and Record Keeping

A RAR will be prepared and submitted to EPA, CT DEEP, and CT DPH within 60 days of the completion of all remedial activities at the site. At a minimum, this RAR will include a short narrative of the project activities with photo-documentation, verification sample results in tables with figures depicting sample locations, the quantities for each waste stream generated for disposal and associated waste manifests and copies of certificates of disposal for PCB Remediation Wastes. The RAR will also include:

- Record site plans(s) showing the surveyed limits of the completed excavation areas;
- Complete laboratory reports;
- Documentation of all materials incorporated into the project (sand, topsoil, etc.) including any testing data associated with these materials; and
- Documentation related to the geotextile used to line excavations as to liner manufacturer's and the liner installer's quality control for the liner material and the stitched seams made to secure the liner; and

A central file location for storage of all records and documents required by 40 CFR Part 761 and state regulations will also be established at the Town of Greenwich Department of Public Works. The location of these files will be provided in the RAR prepared for the site. These records will include information required under Subparts J and K of 40 CFR Part 761 and other information pertinent to the remedial efforts. The files will be made available to EPA for inspection and any time and will be maintained until EPA indicates in writing an alternative disposition for these records.

7.2 Engineered Barrier Inspection and Maintenance

An Inspection, Maintenance, and Monitoring Plan (IMMP) will be prepared and submitted to EPA for review and approval with the RAR. The IMMP will detail post-remediation inspection and

maintenance procedures for the engineered barrier and groundwater monitoring (discussed further in **Section 7.3**) for the duration of time that impacted soil remains in place. It is anticipated that the engineered barrier will be maintained and inspected twice annually. This barrier will include all surface materials over the area designated as AOC 1 such as the asphalt already in place and to be installed within the western parking lot, artificial turf fields 3, 4, and 6, natural turf athletic fields 2 and 5, and the clean fill used in other excavated areas.

Inspections will include an evaluation of surface conditions and not any deterioration of the surface materials (e.g., failing asphalt or eroded soil cover). Inspections will not be invasive and no evaluation of the geotextile barrier installed at the base of the clean fill materials placed is anticipated. Inspections will be documented on pre-prepared forms and pictures representative of site conditions will be maintained electronically. Any necessary repairs or issues with the engineered barrier will be recorded during inspection. Repairs will be completed and the extent of the repairs will be recorded during the following inspection event.

Reports, including filled out forms and photographs documenting the condition of the engineered barrier, will be prepared annually. These reports will be maintained in the files for the GHS project and made available for inspection by federal, state, and local agencies when requested.

7.3 Groundwater Monitoring

At a minimum, post-remediation groundwater monitoring will comply with the requirements of the State of Connecticut Regulation of Department of Energy and Environmental Protection Section 22a-133k-3. This will measure the effectiveness of the remediation and document that groundwater impacts are not migrating offsite.

The details of the post-remediation groundwater monitoring plan will be provided in the IMMP submitted with the RAR. It is anticipated that post-remediation monitoring will begin with a comprehensive analysis of all of the site wells and that the number of wells sampled and the types of analyses used will reduce as the post-monitoring period progresses. However, groundwater monitoring will be performed for as long as impacted soil remains at the site. The likely post-remediation groundwater monitoring program will include:

- Quarterly for the first year of the post-remediation period and will include sampling of all 29 site monitoring wells with analysis for ETPH, PAHs via SIM, Metals, VOCs, and PCBs via homologs.
- Semi-annual groundwater monitoring for the following four years which will include the sampling of approximately 25 site wells with analysis for PAHs via SIM, Metals, and PCBs via homologs.
- Annual monitoring for the next 5 years with sampling for the same analytical parameters in approximately 20 monitoring wells.

If groundwater impacts at the site are unchanged during the first 10 years of monitoring, groundwater monitoring will be performed for the duration of time that impacted soil is left in place at the site and will be performed every two years at wells to be selected.

Reports documenting results of chemical analyses and determination of groundwater elevation contours will be prepared and submitted to the regulatory agencies on an annual basis. All records associated with groundwater monitoring will be maintained in the central file location established for

the project. Any change in the groundwater monitoring program (e.g., a request to reduce from quarterly monitoring to semi-annual monitoring with a reduced number of wells sampled and fewer chemical parameters tested) will be submitted in writing as part of the annual reports for review and approval by EPA and concurrence from CT DEEP.

Given that groundwater monitoring over the last seven quarterly monitoring periods indicates that groundwater impacts and flow conditions are stable, no significant changes in these measured parameters are expected. However, in the case that a change in the groundwater conditions at the site is noted during monitoring, a report will be prepared and submitted to the regulatory agencies within 30 days of receipt of the data indicating the change in site conditions.

Changes that might require this type of reporting is receipt of data indicating the migration of chemical impacts beyond the currently established limits (but not necessarily offsite migration) or significant changes in groundwater elevation contours indicating a change in groundwater flow direction at the site. Changes in groundwater elevations and hydraulic gradients have been measured at the site and are expected due to seasonal variation (e.g., changes caused by periods of high precipitation) and, if changes in general groundwater flow direction is not observed, will not require special reporting. In addition, groundwater analytical data collected to date have had sporadic detections of metals exceeding the CT DEEP Surface Water and Groundwater Protection Criteria. However, these detections have not indicated a consistent impact to groundwater or a groundwater plume. Thus, sporadic detections of metals exceeding screening criteria are anticipated and will not require special reporting to the regulatory agencies.

The report provided to regulators when a change in site conditions is identified will include analytical data collected, figures showing hydraulic gradients and indicate changes in flow patterns observed, and any proposed changes in the groundwater monitoring program such that sufficient monitoring is performed to continue verifying that groundwater impacts are not migrating offsite. Active remediation of groundwater impacts may not be required, especially if groundwater impacts are not migrating offsite. However, active remediation will be evaluated, if necessary.

7.4 Environmental Land Use Restriction

Environmental Land Use Restrictions consistent with the requirements of Section 22a-133q-1 of the Regulations of Connecticut State Agencies (RCSA) will be filed on the property land records following the completion of remedial activities. AECOM will prepare the ELUR documents on behalf of the Town. ELUR documents will be reviewed by the CT DEEP prior to filing. The filing on the land records will indicate:

- Areas of the site where clean backfill materials have been placed and the depth of these clean materials;
- Areas of the site where impacts remain;
- Restrictions on intrusive activities for all areas of the site. These restrictions will include:
    - Procedures for notifying regulatory agencies that the engineered barriers will be breached to perform construction or other activities;
    - Health and safety requirements to be protective of site workers, site users, the surrounding community, and the environment to perform intrusive work; and
    - Soil handling and disposal requirements.

Any use or pumping of groundwater at the site will be prohibited. In lieu of following specified soil handling and disposal requirements, the Town may perform a site investigation to generate sufficient data to support development of a remedial action plan in support of a construction project or other activity. The remedial action plan would be submitted to federal and state authorities for review and approval or concurrence with the proposed activities.

A certification will be submitted to EPA from the Town indicating that the land use restrictions have been filed on the property. The land use restrictions will be recorded on the deed for the property and records of these restrictions will be maintained in the central file for the remediation project.

7.5 Financial Surety

A financial surety plan will be established pursuant to the Code of Federal Regulations Chapter 40 Subsection 761.65 sections (f) and (g). The surety will consider the post-remediation costs associated with maintaining and monitoring the remediation zones. Costs for artificial turf field maintenance and replacement, annual asphalt maintenance, and post-remediation groundwater monitoring will be accounted for in the post-closure costs based on quotes from subcontractors and the Greenwich DPW - Highway Division.

8.0 Schedule

The following section summarizes the anticipated schedule for remedial activities. Note that a majority of remedial activities will take place during high school summer breaks. However, planning, design, notification and reporting activities may occur throughout the year.

2013	
Draft RAP made public to community	September
RAP Public Meeting	September
Second revision based on public comments	October
Submit Final RAP to EPA	November
2014 – Phase I	
Remedial planning and design	November – February
Bidding and Contracts	February - June
Initiate remediation	June (start of summer break)
Complete first phase of remediation	August (start of school and fall athletics)
Project update	September
2015 – Phase II	
Remedial planning and design	November 2014 - February
Bidding and Contracts	February - June
Initiate remediation	June (start of summer break)
Complete second phase of remediation	August (start of school and fall athletics)
Project update	September
Prepare Final Remedial Action Report	September - October

It is anticipated that remediation within AOC 1 at the border with the western parking lot will be performed during the first phase of remediation so that the additional parking may be established. Remediation of arsenic impacts on the south side of the site and other select areas will also be performed. The remainder of the remediation within AOC 1 will be performed during the second phase of the remediation as well as other remediation areas that were not completed during the first phase.

9.0 References

AECOM, 2012a. *Soil Remedial Action Plan,* Greenwich High School MISA Phase IIB Construction. Greenwich, CT. AECOM. January 2012.

AECOM, 2012b. *Soil Remedial Action Plan Addendum,* Greenwich High School MISA Phase IIB Construction. Greenwich, CT. AECOM. April 2012.

AECOM, 2013a. *Remedial Investigation Report*. Greenwich High School Property. Greenwich, CT. AECOM. February 2013.

AECOM, 2013b. *Human Health Risk Assessment*. Greenwich High School Property. Greenwich, CT. AECOM. February 2013.

AECOM, 2013c. *Focused Feasibility Study*. Greenwich High School Property. Greenwich, CT. AECOM. April 2013.

AECOM, 2013d. *Screening Level Ecological Risk Assessment*. Greenwich High School Property. Greenwich, CT. AECOM. February 2013.

DTC, 2011, *Phase I Environmental Site Assessment*, Greenwich High School, 10 Hillside Road, Greenwich, CT. DTC. August 2011.

EPA. 2002c. Draft guidance for evaluating the vapor intrusion to indoor air pathway from groundwater and soils (Subsurface Vapor Intrusion Guidance). Federal Register Notice – Nov 29, 2002.

Table 1-1
Areas of Concern and Chemicals of Concern Summary Table
Remedial Action Plan

AOC Name	AOC Description	Location	Constitents of Concern (COCs)	Impacted media	Status of AOC	Remediation Anticipated	Remediation Notes
AOC 1 Fill Area	Fill Area - impacted fill used for grading and filling of former wetlands area prior to construction of the high school (current location of athletic fields and western parking area).	Fields 2, 3, 4, 5, 6 and west parking lot	PCBs Pesticides ETPH Metals PAHs VOCs	Soil	COCs reported at concentrations above RDEC. PCBs reported at concentrations above RDEC and federal regulatory limits, will require remediation.	Yes	Federal PCB regulations limit remedial options for PCBs to excavation and disposal or engineered barrier.
AOCs 2 - 6 15,000-gallon UST 1,000-gallon UST 200-gallon AST Boiler Room Wing B Transformers	15,000-gallon #2 fuel oil UST services boiler room.	Outside boiler room	ETPH PAHs Metals PCBs	Soil	ETPH, arsenic and lead reported at concentrations above RDEC. PAHs reported at concentrations above laboratory reporting limits (V21-SB345 5-6'). PCBs reported above RDEC at SS-248 and SS-249.	Yes	V21-SB345 is located within the electrical substation which is enclosed with a chain link fence. Impacted soils are inaccessible beneath a paved surface. Remediation plan includes soil excavation in areas of SS-248 and SS-249, which had previously been included in the Non-AOC area.
	1,000-gallon diesel UST services the emergency generator in the transormer area	Adjacent to transformer area					
	200-gallon diesel AST services the emergency generator in the transformer area	Transformer area					
	Boiler room located in basement of Wing B. Serviced by 15,000-gallon UST (AOC 2). Release of 75-100 gallons of fuel oil reported.	Basement of Wing B					
	Transformers located within cages area west of Wing B. Reportedly do not contain PCBs	Transformer area					
AOC 7 Floor Drain, Oil/Water Separator and Hydraulic Lift	Hydraulic lift, oil/water separator and floor drain located in the Science and Technology Wing. Chemical storage also	Science and Technology Wing	None	Soil	Remediation of impacts within AOC 7 to be performed during MISA construction.	Yes	PAHs reported at concentrations above the RDEC in the 2-3' bgd sample collected from boring AH23-SB204. AH23 to be removed during MISA construction project.
AOC 8 Pesticides	Pesticides and herbicides may have been applied during groundskeeping and maintenance activities	Southern portion of Site	Pesticides	Soil	Pesticides and arsenic reported above RDEC in surficial soil samples collected from this area. Remediation required for AOC-8.	Yes	Pesticides identified in shallow soils (0-1' bgd).
AOC 9 Former Residences	Prior to construction of the high school, several residences were located on the property. Residences were demolished prior to high school construciton. USTs associated with the residential properties may remain/were not properly abandoned.	Site-wide	None	Soil	Remediation of impacts within AOC 9 to be performed during remediation of other AOCs.	No	PCB and arsenic impacts to be remediated under separate AOCs as they are not believed to be due to activities within AOC 9. Removal/abandonment of fuel oil UST will be completed and planned for as part of AOC 13.
AOC 10 Site Groundwater	Groundwater has been impacted by PCBs and PAHs within AOC 1. Sporadic detections of VOCs, ETPH, and Metals also found in groundwater. Offsite migration of groundwater impacts is not observed.	Site-wide	ETPH PCBs PAHs Metals VOCs	Groundwater	ETPH, metals, PAHs and PCBs reported above GWPC and/or SWPC.	No	Impacts to groundwater do not appear to be migrating offsite. Long-term monitoring of groundwater will be performed to verify that site conditions do not change.
AOC 13 Southern Arsenic Area	Arsenic detected surrounding the southern boundary of West Brothers Brook to East Putnam Avenue and south of the high school building.	Southern portion of Site	Metals	Soil	Arsenic reported above RDEC. Remediation necessary in this area to remove arsenic 'hot spots'	Yes	Background arsenic determination for non-fill areas indicate background concentration of arsenic is 20 mg/kg. Remediation will be performed to remove shallow arsenic concentrations greater than the background level.
AOC 14 Parking Lots	ETPH and PAHs have been reported in soil samples collected from beneath the northern and eastern parking lots. ETPH also reported in soil samples collected from the football stadium area.	Northern and eastern paved parking areas. Southern football stadium area	ETPH PAHs	Soil	ETPH and PAHs reported above the RDEC. Impacts potentially related to asphalt in sample.	No	Limited ETPH and PAHs above RDEC at borings D10, AH29 and AW32 which are located beneath the paved asphalt surface and are not accessible.
Non-AOC	Includes areas where soil borings were advanced for additional Site characterization information. Locations are not associated with a specifice AOC.	Site-wide	PCBs ETPH	Soil	ETPH and PCBs reported at concentrations above the RDEC in soil samples collected from the non-AOC area.	Yes	Remediation of ETPH and PCBs to be performed.

Notes:

RDEC, GWPC, and SWPC are recommended screening criteria for COCs

Abbreviations:

AST - Aboveground Storage Tank
COCs - Constituents of Concern
ETPH - Extractable Total Petroleum Hydrocarbons
GWPC - Groundwater Protection Criteria
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls
R DEC (RDEC) - Residential Direct Exposure Criteria
SWPC - Surface Water Protection Criteria
UST - Underground Storage Tank
VOCs - Volatile Organic Compounds

AECOM

Table 1-2
Calculated Site-Specific PRGs for COCs Based on 10^{-6} Cumulative Risk Level and Target HI of 1
Remedial Action Plan

Greenwich High School
Greenwich, CT

Exposure Area	Media	COC	Receptor (a)	CAS	Units	Site-Specific EPC	Site-Specific Total Potential ELCR	Site-Specific Total Potential HI	Calculated PRG Based on Cancer Effects (b) Target ELCR= 1E-6	Calculated PRG Based on Cancer Effects (b) Target ELCR=1E-5	Calculated PRG Based on Cancer Effects (b) Target ELCR=1E-4	Calculated PRG Based on Noncancer Effects (b) Target HQ=1
Athletic Fields - Fill Area	Surface Soil	Total PCB Aroclors	Maintenance Worker (Outdoor)	RACALC-PCB	mg/kg	4.29E+00	3.46E-06	2.42E-01	1.24E+00	1.24E+01	1.24E+02	1.77E+01
	Combined Soil	Total PCB Aroclors	Construction Worker	RACALC-PCB	mg/kg	1.65E+02	1.13E-05	1.97E+01	1.47E+01	1.47E+02	1.47E+03	8.39E+00
	Groundwater	Total PCB Homologues	Construction Worker	RACALC-PCB-H	ug/L	1.64E+01	3.83E-08	1.92E+00	4.28E+02	4.28E+03	4.28E+04	8.56E+00
Athletic Fields - NonFill Area	Combined Soil	Arsenic	Construction Worker	7440-38-2	mg/kg	5.73E+02	2.25E-05	3.49E+00	2.55E+01	2.55E+02	2.55E+03	1.64E+02
	Combined Soil	Benzo(a)pyrene	Construction Worker	50-32-8	mg/kg	9.68E+00	2.36E-06	NC	4.11E+00	4.11E+01	4.11E+02	NC
	Surface soil	Benzo(a)pyrene	Site Visitor	50-32-8	mg/kg	7.56E-01	4.74E-06	NC	1.59E-01	1.59E+00	1.59E+01	NC
Southern Area	Surface soil	Arsenic	Maintenance Worker (Outdoor)	7440-38-2	mg/kg	1.89E+01	7.13E-06	4.44E-02	2.65E+00	2.65E+01	2.65E+02	4.27E+02
	Surface soil	Benzo(a)pyrene	Site Visitor	50-32-8	mg/kg	4.05E-01	2.54E-06	NC	1.59E-01	1.59E+00	1.59E+01	NC
	Surface soil	Chlordane	Maintenance Worker (Outdoor)	57-74-9	mg/kg	1.24E+01	1.15E-06	1.84E-02	1.08E+01	1.08E+02	1.08E+03	6.74E+02

Notes:
CAS - Chemical Abstracts Service.
COC - Compound of concern identified in the human health risk assessment.
ELCR - Excess Lifetime Cancer Risk.
EPC - Exposure point concentration.
mg/kg - milligram per kilogram.
NC - Not Calculated.
HI - Hazard Index.
HQ - Hazard Quotient.
PRG - Preliminary Remedial Goals.
ug/L - microgram per liter.
(a) Selected receptors have the highest ELCR/HI for those compounds selected as COCs for multiple receptors.
(b) The PRG is calculated using the following equation:

$$PRG = \frac{\text{Target ELCR or HQ} * \text{EPC}}{\text{Total Potential ELCR or HQ}}$$

Shaded value equals the selected PRG concentration based on the lower of the PRGs calculated based on cancer and noncancer effects.

Table 2-1
Remedial Design Investigation Soil Analytical Data
Remedial Action Plan

Location ID Depth Interval Sample ID Sample Date SDG	RES DEC	PRG	34-SB316A 0-1 34-SB316A(0-1)_062513-1 6/25/2013 SB72106	34-SB316B 0-1 34-SB316B(0-1)_062513-1 6/25/2013 SB72106	34-SB316C 0-1 34-SB316C(0-1)_062513-1 6/25/2013 SB72106	AH29-SB231A 0-1 AH29-SB231A(0-1)_062513-1 6/25/2013 SB72106	AN19-SS117A 0-1 AN19-SS117A(0-1)_062513-1 6/25/2013 SB72106	AN19-SS117A 0-1 AN19-SS117A(0-1)_062513-2 6/25/2013 SB72106	AQ18-SS144A 0-1 AQ18-SS144A(0-1)_062513-1 6/25/2013 SB72106	AX31-SS232A 0-1 AX31-SS232A(0-1)_062513-1 6/25/2013 SB72106	BB20-SS139A 0-1 BB20-SS139A(0-1)_062513-1 6/25/2013 SB72106	BB31-SS230A 0-1 BB31-SS230A(0-1)_062513-1 6/25/2013 SB72106	BC22-SS161A 0-1 BC22-SS161A(0-1)_062513-1 6/25/2013 SB72106
PAHs (ug/Kg)													
Acenaphthylene	1000000	NE	NA	NA	NA	<71	<73	<70	<73	<78	**140**	<68	<73
Anthracene	1000000	NE	NA	NA	NA	<71	<73	<70	<73	<78	**330**	<68	<73
Benzo(a)anthracene	1000	NE	NA	NA	NA	**77**	<73	<70	<73	<78	**590**	<68	**93**
Benzo(a)pyrene	1000	159 [1]	NA	NA	NA	**79**	**75**	<70	<73	<78	**510**	<68	**90**
Benzo(b)fluoranthene	1000	NE	NA	NA	NA	**110**	**94**	**73**	<73	<78	**680**	**83**	**120**
Benzo(g,h,i)perylene	*1000000 (g)*	NE	NA	NA	NA	<71	<73	<70	<73	<78	**310**	<68	**79**
Benzo(k)fluoranthene	8400	NE	NA	NA	NA	<71	<73	<70	<73	<78	**240**	<68	<73
Chrysene	*84000 (g)*	NE	NA	NA	NA	**74**	<73	<70	<73	<78	**560**	<68	**87**
Dibenzo(a,h)anthracene	*1000 (g)*	NE	NA	NA	NA	<71	<73	<70	<73	<78	**81**	<68	<73
Fluoranthene	1000000	NE	NA	NA	NA	**91**	**110**	<70	<73	<78	**1300**	**110**	**160**
Fluorene	1000000	NE	NA	NA	NA	<71	<73	<70	<73	<78	**100**	<68	<73
Indeno(1,2,3-cd)pyrene	*1000 (g)*	NE	NA	NA	NA	<71	<73	<70	<73	<78	**390**	<68	**79**
Phenanthrene	1000000	NE	NA	NA	NA	<71	<73	<70	<73	<78	**880**	<68	<73
Pyrene	1000000	NE	NA	NA	NA	**78**	**97**	<70	<73	<78	**1100**	**92**	**140**
Total PAHs	NE	NE	NA	NA	NA	**509**	**376**	**73**	<0	<0	**7211**	**285**	**848**
Metals (mg/Kg)													
Arsenic	10	20 [2]	**6.32**	**4.12**	**33.6**	NA	NA	NA	NA	NA	NA	NA	NA

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PRG = Preliminary Remedial Goals.

NE = Criteria has not been established.

NA = Not analyzed for this constituent.

ug/kg = microgram per kilogram

mg/kg = milligram per kilogram

Italics requires CT DEEP approval

[1] Based on Human Health Risk Assessment criteria (AECOM, 2012).

[2] Based on CTDEEP-approved background concentration for arsenic.

Table 2-1
Remedial Design Investigation Soil Analytical Data
Remedial Action Plan

Location ID Depth Interval Sample ID Sample Date SDG	RES DEC	PRG	C11-SS01A 0-1 C11-SS01A(0-1)_062513-1 6/25/2013 SB72106	C13-SS02A 0-1 C13-SS02A(0-1)_062513-1 6/25/2013 SB72106	C19-SS5A 0-1 C19-SS5A(0-1)_062513-1 6/25/2013 SB72106	C20-SS5B 0-1 C20-SS5B(0-1)_062513-1 6/25/2013 SB72106	C25-SB321A 0-1 C25-SB321A(0-1)-062613-1 6/26/2013 SB72189	C35-SB500 0-1 C35-SB500(0-1)_062513-1 6/25/2013 SB72106	D24-SB321B 0-1 D24-SB321B(0-1)-062613-1 6/26/2013 SB72189	D25-SB321C 0-1 D25-SB321C(0-1)-062613-1 6/26/2013 SB72189	D25-SB321D 0-1 D25-SB321D(0-1)-062613-1 6/26/2013 SB72189	D4-SS06A 0-1 D4-SS06A(0-1)_062513-1 6/25/2013 SB72106	D4-SS06A 0-1 D4-SS06A(0-1)_062513-2 6/25/2013 SB72106
PAHs (ug/Kg)													
Acenaphthylene	1000000	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Anthracene	1000000	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Benzo(a)anthracene	1000	NE	**96**	<77	NA	NA	NA	NA	NA	NA	NA	**75**	<73
Benzo(a)pyrene	1000	159 [1]	**100**	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Benzo(b)fluoranthene	1000	NE	**150**	<77	NA	NA	NA	NA	NA	NA	NA	**99**	**88**
Benzo(g,h,i)perylene	*1000000 (g)*	NE	**79**	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Benzo(k)fluoranthene	8400	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Chrysene	*84000 (g)*	NE	**120**	<77	NA	NA	NA	NA	NA	NA	NA	**78**	<73
Dibenzo(a,h)anthracene	*1000 (g)*	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Fluoranthene	1000000	NE	**220**	<77	NA	NA	NA	NA	NA	NA	NA	**150**	**150**
Fluorene	1000000	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Indeno(1,2,3-cd)pyrene	*1000 (g)*	NE	**91**	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Phenanthrene	1000000	NE	<78	<77	NA	NA	NA	NA	NA	NA	NA	<74	<73
Pyrene	1000000	NE	**180**	<77	NA	NA	NA	NA	NA	NA	NA	**140**	**130**
Total PAHs	NE	NE	**1036**	<0	NA	NA	NA	NA	NA	NA	NA	**542**	**368**
Metals (mg/Kg)													
Arsenic	10	20 [2]	NA	NA	**2.76**	**3.69**	**19.4**	**15.6**	**68.9**	**16.6**	**28.1**	NA	NA

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NA = Not analyzed for this constituent.

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mg/kg = milligram per kilogram

Italics requires CT DEEP approval

[1] Based on Human Health Risk Assessment criteria (AECOM, 2012).

[2] Based on CTDEEP-approved background concentration for arsenic.

Table 2-1
Remedial Design Investigation Soil Analytical Data
Remedial Action Plan

Location ID Depth Interval Sample ID Sample Date SDG	RES DEC	PRG	E16-SS08A 0-1 E16-SS08A(0-1)_062513-1 6/25/2013 SB72106	E18-SS09 0-1 E18-SS09(0-1)_062513-1 6/25/2013 SB72106	E3-SS07A 0-1 E3-SS07A(0-1)_062513-1 6/25/2013 SB72106	F35-SB287B 0-1 F35-SB287B(0-1)_062513-1 6/25/2013 SB72106	F35-SB487A 0-1 F35-SB487A(0-1)_062513-1 6/25/2013 SB72106	F35-SB487A 0-1 F35-SB487A(0-1)_062513-2 6/25/2013 SB72106	F4-S1A 0-1 F4-S1A(0-1)_062513-1 6/25/2013 SB72106	G29-SB248B 0-1 G29-SB248B(0-1)_062513-1 6/25/2013 SB72106	G30-SB248C 0-1 G30-SB248C(0-1)_062513-1 6/25/2013 SB72106	G30-SB248D 0-1 G30-SB248D(0-1)_062513-1 6/25/2013 SB72106	I2-SS14A 0-1 I2-SS14A(0-1)_062513-1 6/25/2013 SB72106
PAHs (ug/Kg)													
Acenaphthylene	1000000	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	**280**
Anthracene	1000000	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	**150**
Benzo(a)anthracene	1000	NE	<84	<73	**81**	NA	NA	NA	<77	NA	NA	NA	**560**
Benzo(a)pyrene	1000	159 [1]	<84	<73	**93**	NA	NA	NA	<77	NA	NA	NA	**610**
Benzo(b)fluoranthene	1000	NE	**110**	<73	**130**	NA	NA	NA	<77	NA	NA	NA	**830**
Benzo(g,h,i)perylene	*1000000 (g)*	NE	<84	<73	**91**	NA	NA	NA	<77	NA	NA	NA	**390**
Benzo(k)fluoranthene	8400	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	**310**
Chrysene	*84000 (g)*	NE	**92**	<73	**92**	NA	NA	NA	<77	NA	NA	NA	**700**
Dibenzo(a,h)anthracene	*1000 (g)*	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	**91**
Fluoranthene	1000000	NE	**170**	<73	**150**	NA	NA	NA	<77	NA	NA	NA	**1400**
Fluorene	1000000	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	<77
Indeno(1,2,3-cd)pyrene	*1000 (g)*	NE	<84	<73	**90**	NA	NA	NA	<77	NA	NA	NA	**480**
Phenanthrene	1000000	NE	<84	<73	<76	NA	NA	NA	<77	NA	NA	NA	**450**
Pyrene	1000000	NE	**150**	<73	**130**	NA	NA	NA	<77	NA	NA	NA	**1100**
Total PAHs	NE	NE	**522**	<0	**857**	NA	NA	NA	<0	NA	NA	NA	**7351**
Metals (mg/Kg)													
Arsenic	10	20 [2]	NA	NA	NA	**3.58**	**3.83**	**4.32**	NA	**12.4**	**11.6**	**31.4**	NA

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Italics requires CT DEEP approval

[1] Based on Human Health Risk Assessment criteria (AECOM, 2012).

[2] Based on CTDEEP-approved background concentration for arsenic.

Table 2-1
Remedial Design Investigation Soil Analytical Data
Remedial Action Plan

Location ID Depth Interval Sample ID Sample Date SDG	RES DEC	PRG	J23-SB245A 0-1 J23-SB245A(0-1)_062513-1 6/25/2013 SB72106	K23-SB245B 0-1 K23-SB245B(0-1)-062613-1 6/26/2013 SB72189	L14-SS17A 0-1 L14-SS17A(0-1)_062513-1 6/25/2013 SB72106	L23-SB245C 0-1 L23-SB245C(0-1)_062513-1 6/25/2013 SB72106	M10-SS21A 0-1 M10-SS21A(0-1)_062513-1 6/25/2013 SB72106	M9-SS257B 0-1 M9-SS257B(0-1)_062513-1 6/25/2013 SB72106	N4-SS20A 0-1 N4-SS20A(0-1)_062513-1 6/25/2013 SB72106	N8-SS257A 0-1 N8-SS257A(0-1)_062513-1 6/25/2013 SB72106	R11-SS147A 0-1 R11-SS147A(0-1)_062513-1 6/25/2013 SB72106	SS-235A 0-1 SS235A(0-1)_062513-1 6/25/2013 SB72106	SS-238A1 0-1 SS-238A1(0-1)_062513-1 6/25/2013 SB72106
PAHs (ug/Kg)													
Acenaphthylene	1000000	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	<74	<100
Anthracene	1000000	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	<74	<100
Benzo(a)anthracene	1000	NE	NA	NA	<73	NA	NA	NA	**100**	NA	<74	**190**	<100
Benzo(a)pyrene	1000	159 [1]	NA	NA	<73	NA	NA	NA	**99**	NA	<74	**280**	<100
Benzo(b)fluoranthene	1000	NE	NA	NA	**99**	NA	NA	NA	**150**	NA	<74	**350**	<100
Benzo(g,h,i)perylene	*1000000 (g)*	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	**290**	<100
Benzo(k)fluoranthene	8400	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	**130**	<100
Chrysene	*84000 (g)*	NE	NA	NA	**78**	NA	NA	NA	**110**	NA	<74	**210**	<100
Dibenzo(a,h)anthracene	*1000 (g)*	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	<74	<100
Fluoranthene	1000000	NE	NA	NA	**130**	NA	NA	NA	**200**	NA	<74	**380**	**140**
Fluorene	1000000	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	<74	<100
Indeno(1,2,3-cd)pyrene	*1000 (g)*	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	**300**	<100
Phenanthrene	1000000	NE	NA	NA	<73	NA	NA	NA	<86	NA	<74	**110**	<100
Pyrene	1000000	NE	NA	NA	**97**	NA	NA	NA	**180**	NA	<74	**320**	**110**
Total PAHs	NE	NE	NA	NA	**404**	NA	NA	NA	**839**	NA	<0	**2560**	**250**
Metals (mg/Kg)													
Arsenic	10	20 [2]	**41**	**17**	NA	**2.95**	**8.39**	**4.88**	NA	**7.42**	NA	NA	NA

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mg/kg = milligram per kilogram

Italics requires CT DEEP approval

[1] Based on Human Health Risk Assessment criteria (AECOM, 2012).

[2] Based on CTDEEP-approved background concentration for arsenic.

Table 2-1
Remedial Design Investigation Soil Analytical Data
Remedial Action Plan

Location ID Depth Interval Sample ID Sample Date SDG	RES DEC	PRG	SS-240A 0-1 SS-240A(0-1)-062613-1 6/26/2013 SB72189	SS-240B 0-1 SS-240B(0-1)-062613-1 6/26/2013 SB72189	SS-241A 0-1 SS-241A(0-1)-062613-1 6/26/2013 SB72189	SS-241B 0-1 SS-241B(0-1)-062613-1 6/26/2013 SB72189	T12-SS146A 0-1 T12-SS146A(0-1)_062513-1 6/25/2013 SB72106
PAHs (ug/Kg)							
Acenaphthylene	1000000	NE	<73	<110	**120**	**110**	<76
Anthracene	1000000	NE	<73	<110	**160**	<71	<76
Benzo(a)anthracene	1000	NE	<73	**200**	**500**	**390**	<76
Benzo(a)pyrene	1000	159 [1]	<73	**210**	**590**	**400**	<76
Benzo(b)fluoranthene	1000	NE	**85**	**280**	**720**	**480**	<76
Benzo(g,h,i)perylene	*1000000 (g)*	NE	<73	**140**	**380**	**260**	<76
Benzo(k)fluoranthene	8400	NE	<73	<110	**300**	**190**	<76
Chrysene	*84000 (g)*	NE	<73	**250**	**630**	**370**	<76
Dibenzo(a,h)anthracene	*1000 (g)*	NE	<73	<110	**84**	<71	<76
Fluoranthene	1000000	NE	**110**	**460**	**1200**	**730**	<76
Fluorene	1000000	NE	<73	<110	<75	<71	<76
Indeno(1,2,3-cd)pyrene	*1000 (g)*	NE	<73	**170**	**460**	**320**	<76
Phenanthrene	1000000	NE	<73	**160**	**410**	**240**	<76
Pyrene	1000000	NE	**92**	**370**	**930**	**600**	<76
Total PAHs	NE	NE	**287**	**2240**	**6484**	**4090**	<0
Metals (mg/Kg)							
Arsenic	10	20 [2]	**4.71**	**18.1**	**8.04**	**3.89**	NA

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[1] Based on Human Health Risk Assessment criteria (AECOM, 2012).

[2] Based on CTDEEP-approved background concentration for arsenic.

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date / SDG	GWPC	1996 RES GWVC	SWPC	MW-28 MW-28-072612-1 7/26/2012 12070542	MW-28 MW-28-021313-1 2/13/2013 SB64486	MW-28 MW-28-051413-1 5/14/2013 SB69540	MW-28 MW-28-08192013-1 8/19/2013 SB75322	MW-35 MW-35-072612-1 7/26/2012 12070542	MW-35 MW-35-021313-1 2/13/2013 SB64486	MW-35 MW-35-051413-1 5/14/2013 SB69540	MW-35 MW-35-08192013-1 8/19/2013 SB75322	MW-AA12 MW-AA12-072512-1 7/25/2012 SB53469	MW-AA12 MW-AA12-021513-1 2/15/2013 SB64640	MW-AA12 MW-AA12-051513-1 5/15/2013 SB69757	MW-AA12 MW-AA12-08222013-1 8/22/2013 SB75529	MW-AA19 MW-AA19-072612-1 7/26/2012 12070542	MW-AA19 MW-AA19-021213-1 2/12/2013 SB64486	MW-AA19 MW-AA19-051513-1 5/15/2013 SB69668	MW-AA19 MW-AA19-08212013-1 8/21/2013 SB75423	MW-AE8 MW-AE8-072512-1 7/25/2012 SB53469	MW-AE8 MW-AE8-021413-1 2/14/2013 SB64588	MW-AE8 MW-AE8-051513-1 5/15/2013 SB69668
CT ETPH (mg/L)																						
C_9-C_{32} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	**1.2**	NS	<0.2	NS	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2
VOC (ug/L)																						
1,2-Dibromoethane	0.05	4	NE	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	NS	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	**1850**	<10.0	<10.0	NS	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0
Acetone	700	50000	NE	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	**16**	<10.0	<10.0	NS	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0
Chloroform	6	287	14100	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
Chloromethane	NE	NE	NE	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00
cis-1,2-Dichloroethylene	70	NE	NE	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
m,p-Xylenes	530	21300	NE	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	**2.77**	<2.00	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	NS	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
Naphthalene	280	NE	NE	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	**63.4**	<1.00	**1.67**	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
Tetrahydrofuran	NE	NE	NE	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00
Toluene	1000	23500	4000000	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
Trichloroethene	5	219	2340	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00
PAH-SIMS (ug/L)																						
1-Methylnaphthalene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	**0.203**	**1.08**	**1.73**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.601**	**1.67**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Acenaphthene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	**6.14**	**1.36**	**3.63**	**4.28**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Acenaphthylene	420	NE	0.3	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	<0.065	**0.087**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Anthracene	2000	NE	1100000	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.674**	**0.834**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.182**	**0.186**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.133**	**0.179**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.097**	**0.173**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	<0.065	**0.121**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 UJ	<0.161	**0.079**	**0.132**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Chrysene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.165**	**0.14**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	<0.065	**0.055**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Fluoranthene	280	NE	3700	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	**0.313**	**0.812**	**0.669**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Fluorene	280	NE	140000	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 UJ	**0.352**	**1.79**	**2.63**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	<0.161	**0.077**	**0.159**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Naphthalene	280	NE	NE	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	**21.1**	<0.161	**0.59**	**10.1**	<0.050 U	<0.050	<0.050	<0.090	<0.050 U	<0.050	<0.050
Phenanthrene	200	NE	0.077	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	**8.73**	**0.41**	**3.29**	**3.39**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Pyrene	200	NE	110000	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<5.43 U	**0.206**	**0.577**	**0.523**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050
Total PAHs	NE	NE	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**35.97**	**2.844**	**13.777**	**27.058**	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Metals (mg/L)																						
Antimony	0.006	NE	86	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	NS	NS	<0.0060 U	<0.0060	<0.0060	**0.0062**	<0.0060 U	<0.0060	<0.0060
Arsenic	0.05	NE	0.004	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	NS	NS	<0.0040 U	<0.0040	<0.0040	<0.0040	**0.0046**	<0.0040	<0.0040
Barium	1	NE	NE	**0.0583**	**0.0546**	**0.0424**	**0.0486**	**0.181**	**0.182**	**0.291**	**0.232**	**1.48**	**0.0627**	NS	NS	**2.74**	**1.91**	**2.22**	**2.44**	**0.235**	**0.0854**	**0.1**
Beryllium	0.004	NE	0.004	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	NS	NS	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020
Cadmium	0.005	NE	0.006	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	NS	NS	**0.003**	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025
Calcium	NE	NE	NE	**22.6**	**35.8**	**25.4**	**25.2**	**36.4**	**34.2**	**64.5**	**50.8**	**83**	**25.4**	NS	NS	**230**	**249**	**200**	**224**	**41.6**	**68.4**	**38.6**
Chromium	0.05	NE	NE	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0056**	<0.0050	NS	NS	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Copper	1.3	NE	0.048	**0.0052**	<0.0050	<0.0050	<0.0050	<0.0050 U	**0.0062**	<0.0050	<0.0050	**0.0168**	<0.0050	NS	NS	<0.0050 U	<0.0050	**0.0066**	<0.0050	<0.0050 U	<0.0050	<0.0050
Iron	NE	NE	NE	**0.648 J**	**1.48**	**0.633**	**6.1**	**0.0581 J**	**0.189**	**0.741**	**0.0395**	**13.3**	**0.0968**	NS	NS	**115**	**56.3**	**82**	**134**	**35.6**	**2.18**	**34.4**
Lead	0.015	NE	0.013	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	**0.0366**	<0.0075	NS	NS	<0.0075 U	<0.0075	**0.0081**	**0.0114**	<0.0075 U	<0.0075	<0.0075
Magnesium	NE	NE	NE	**7.79**	**12.3**	**8.9**	**9.03**	**8.15**	**7.77**	**14.1**	**11.7**	**36.8**	**1.46**	NS	NS	**77.2**	**58**	**68.8**	**69.4**	**12.8**	**13.7**	**18**
Manganese	NE	NE	NE	**0.872 J**	**1.78**	**2.29**	**3.12**	**0.724 J**	**0.104**	**0.425**	**0.536**	**0.320 J-**	**0.0342**	NS	NS	**7**	**4.04**	**6.62**	**8.36**	**1.02 J-**	**0.306**	**1.18**
Mercury	0.002	NE	0.0004	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	**0.00032**	<0.00020	NS	NS	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020
Nickel	0.1	NE	0.88	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0054**	<0.0050	<0.0050	**0.005**	<0.0050 U	<0.0050	NS	NS	**0.0058**	<0.0050	**0.0057**	<0.0050	<0.0050 U	<0.0050	<0.0050
Potassium	NE	NE	NE	**4.37 J**	**3.21**	**3.09**	**4.16**	**7.78 J**	**5.47**	**9.21**	**9.02**	**40.8**	**3.17**	NS	NS	**19.2**	**22.3**	**16.4**	**22.6**	**8.08**	**5.82**	**2.64**
Selenium	0.05	NE	0.05	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	NS	NS	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150
Silver	0.036	NE	0.012	<0.0050 UJ	<0.0050	<0.0050	<0.0050	<0.0050 UJ	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	NS	NS	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Sodium	NE	NE	NE	**30.2**	**28.8**	**27**	**28.2**	**67.2**	**60.8**	**97.8**	**77.4**	**70.2 J-**	**6.63**	NS	NS	**926**	**2520**	**991**	**1110**	**13.4 J-**	**6.37**	**15.9**
Thallium	0.005	NE	0.063	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	NS	NS	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Vanadium	0.05	NE	NE	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0052**	<0.0050	NS	NS	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Zinc	5	NE	0.123	**0.053**	**0.0696**	**0.0274**	**0.0798**	<0.0050 U	**0.0086**	**0.0126**	<0.0050	<0.0500 U	**0.119**	NS	NS	**0.0065**	**0.0056**	<0.0050	<0.0050	<0.0500 U	**0.0116**	**0.0165**
PCB Homologs (ug/L)																						
Monochlorobiphenyl	NE	NE	NE	<0.005 U	<0.005	<0.00505	<0.005	<0.005 U	<0.005	<0.005	<0.005	**0.884 J-**	**0.144**	**0.154**	**0.252**	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556
Dichlorobiphenyl	NE	NE	NE	**0.00678**	<0.005	<0.00505	<0.005	<0.005 U	<0.005	<0.005	<0.005	**1.73 J-**	**1.47**	**1.08**	**1.39**	**0.00649**	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556
Trichlorobiphenyl	NE	NE	NE	<0.005 U	<0.005	<0.00505	<0.005	<0.005 U	<0.005	<0.005	<0.005	**1.29 J-**	**0.478**	**0.568**	**0.525**	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556
Tetrachlorobiphenyl	NE	NE	NE	<0.01 U	<0.01	<0.0101	<0.01	<0.01 U	<0.01	<0.01	<0.01	**0.604 J-**	<0.0152	**0.116**	**0.0406**	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.0111
Pentachlorobiphenyl	NE	NE	NE	<0.01 U	<0.01	<0.0101	<0.01	<0.01 U	<0.01	<0.01	<0.01	**0.0807 J-**	<0.0152	<0.0118	<0.0118	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.0111
Total PCB	0.5	NE	0.5	**0.00678**	<0.025	<0.0253	<0.025	<0.025 U	<0.025	<0.025	<0.025	**4.58**	**2.09**	**1.92**	**2.21**	**0.00649**	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.0278

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criteriion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the Connecticut Department of Public Health.

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date / SDG	GWPC	1996 RES GWVC	SWPC	MW-AE8	MW-AG10	MW-AG10	MW-AG10	MW-AG10	MW-AG30	MW-AG30	MW-AG30	MW-AG30	MW-AH16	MW-AH16	MW-AH16	MW-AH16	MW-AJ13	MW-AJ13	MW-AJ13	MW-AJ13	MW-AJ13	MW-AJ13
Sample ID				MW-AE8-08202013-1	MW-AG10-072512-1	MW-AG10-021413-1	MW-AG10-051513-1	MW-AG10-08222013-1	MW-AG30-072412-1	MW-AG30-021513-1	MW-AG30-051613-1	MW-AG30-08212013-1	MW-AH16-072612-1	MW-AH16-021413-1	MW-AH16-051613-1	MW-AH16-08212013-1	MW-AJ13-072512-1	MW-AJ13-072512-2	MW-AJ13-021413-1	MW-AJ13-021413-2	MW-AJ13-051613-1	MW-AJ13-051613-2
Sample Date				8/20/2013	7/25/2012	2/14/2013	5/15/2013	8/22/2013	7/24/2012	2/15/2013	5/16/2013	8/21/2013	7/26/2012	2/14/2013	5/16/2013	8/21/2013	7/25/2012	7/25/2012	2/14/2013	2/14/2013	5/16/2013	5/16/2013
SDG				SB75423	SB53469	SB64588	SB69668	SB75529	SB53379	SB64640	SB69757	SB75423	12070542	SB64588	SB69757	SB75423	SB53469	SB53469	SB64588	SB64588	SB69757	SB69757
CT ETPH (mg/L)																						
C_9-C_{36} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	**0.5**	<0.2	**0.2**	<0.1 U	<0.1 U	<0.2	<0.2	<0.2	<0.2
VOC (ug/L)																						
1,2-Dibromoethane	0.05	4	NE	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50 U	<0.50	<0.50	<0.50	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0	**18.6**	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0
Acetone	700	50000	NE	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0
Chloroform	6	287	14100	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
Chloromethane	NE	NE	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
m,p-Xylenes	530	21300	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
Naphthalene	280	NE	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
Tetrahydrofuran	NE	NE	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00
Toluene	1000	23500	4000000	**1.33**	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	**2.62**	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
Trichloroethene	5	219	2340	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00
PAH-SIMS (ug/L)																						
1-Methylnaphthalene	NE	NE	NE	<0.050	<0.050 U	**0.087**	<0.050	**0.083**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	**0.129**	<0.050	**0.069**	<0.050 U	<0.050 U	**0.086**	**0.088**	<0.050	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050	<0.050 U	**0.215**	<0.050	**0.062**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	**0.251**	**0.262**	<0.050	<0.050
Acenaphthene	NE	NE	NE	<0.050	<0.050 U	**0.234**	<0.050	**0.054**	<0.050 U	<0.050	<0.050	<0.050	**0.296**	**1.35**	**1.62**	**1.64**	<0.050 U	<0.050 U	**0.262**	**0.275**	<0.050	<0.050
Acenaphthylene	420	NE	0.3	<0.050	<0.050 U	**0.085**	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	**0.078**	**0.081**	<0.050	<0.050
Anthracene	2000	NE	1100000	<0.050	<0.050 U	**0.061**	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	**0.148**	**0.096**	**0.074**	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Chrysene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Fluoranthene	280	NE	3700	<0.050	<0.050 U	**0.063**	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	**0.102**	**0.258**	**0.258**	**0.223**	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Fluorene	280	NE	140000	<0.050	<0.050 U	**0.16**	<0.050	**0.072**	<0.050 U	<0.050	<0.050	<0.050	**0.163**	**0.852**	**0.906**	**1.01**	<0.050 U	<0.050 U	**0.16**	**0.158**	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Naphthalene	280	NE	NE	<0.090	<0.050 U	**0.52**	<0.050	**0.07**	<0.050 U	<0.050	<0.050	<0.090	<0.050 U	<0.050	<0.050	<0.090	<0.050 U	<0.050 U	**0.65**	**0.695**	<0.050	<0.050
Phenanthrene	200	NE	0.077	<0.050	<0.050 U	**0.179**	<0.050	**0.059**	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	**0.064**	<0.050	<0.050	<0.050 U	<0.050 U	**0.177**	**0.17**	<0.050	<0.050
Pyrene	200	NE	110000	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	**0.068**	**0.169**	**0.176**	**0.155**	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050
Total PAHs	NE	NE	NE	<0.050	<0.050	**1.604**	<0.050	**0.4**	<0.050	<0.050	<0.050	<0.050	**0.629**	**2.97**	**3.056**	**3.171**	<0.050	<0.050	**1.664**	**1.729**	<0.050	<0.050
Metals (mg/L)																						
Antimony	0.006	NE	86	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060
Arsenic	0.05	NE	0.004	**0.0064**	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040	**0.0046**	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040
Barium	1	NE	NE	**0.156**	**0.876**	**0.279**	**0.0752**	**0.437**	**0.265**	**0.0796**	**0.168**	**0.221**	**0.166**	**0.397**	**0.449**	**0.633**	**0.163**	**0.157**	**0.0951**	**0.109**	**0.113**	**0.119**
Beryllium	0.004	NE	0.004	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020
Cadmium	0.005	NE	0.006	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	**0.0055**	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025
Calcium	NE	NE	NE	**35.6**	**119**	**52.1**	**34.2**	**130**	**569**	**35**	**133**	**137**	**61.6**	**128**	**136**	**142**	**28.5**	**27.7**	**21.4**	**23.8**	**29.2**	**31.3**
Chromium	0.05	NE	NE	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1.3	NE	0.048	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050
Iron	NE	NE	NE	**52**	**48**	**17.9**	**6.72**	**49.7**	**0.354**	**0.0278**	**0.195**	**0.56**	**15.3**	**11.5**	**15.8**	**66**	**7.14**	**7.19**	**2.3**	**2.89**	**8.67**	**9.58**
Lead	0.015	NE	0.013	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075
Magnesium	NE	NE	NE	**18.3**	**43.7**	**13.6**	**4.36**	**27**	**172**	**7.5**	**24.7**	**26.1**	**12.1**	**52.2**	**49.6**	**62**	**13.1**	**12.8**	**6.62**	**7.88**	**13.5**	**14.5**
Manganese	NE	NE	NE	**1.47**	**3.85 J-**	**1.4**	**0.463**	**2.64**	**6.14**	**0.588**	**0.452**	**0.537**	**0.711**	**0.756**	**0.857**	**1.71**	**0.564 J-**	**0.548 J-**	**0.272**	**0.327**	**0.583**	**0.634**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.1	NE	0.88	<0.0050	**0.0096**	<0.0050	<0.0050	<0.0050	**0.0496**	<0.0050	**0.0068**	**0.01**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	**0.0067**	**0.0074**	<0.0050	<0.0050
Potassium	NE	NE	NE	**4.33**	**6.51**	**2.71**	**2.46**	**7.15**	**46**	**9.74**	**17.3**	**22.7**	**17.4**	**25.3**	**29**	**31.2**	**4.62**	**5.24**	**3.42**	**3.6**	**3.53**	**3.63**
Selenium	0.05	NE	0.05	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150
Silver	0.036	NE	0.012	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	NE	NE	NE	**26**	**85.4 J-**	**31**	**20.9**	**51**	**1880**	**887**	**1430**	**1530**	**40.9**	**55.8**	**56.4**	**73.4**	**7.92 J-**	**7.84 J-**	**5.42**	**6.11**	**7.72**	**7.21**
Thallium	0.005	NE	0.063	<0.0050	<0.0050 U	<0.0050	<0.0050	**0.0056**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050
Vanadium	0.05	NE	NE	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0062**	<0.0050	**0.005**	**0.0068**	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	5	NE	0.123	<0.0050	<0.0500 U	**0.164**	**0.0626**	**0.0178**	<0.0300 U	<0.0050	<0.0080	**0.0051**	**0.0994**	**0.0437**	**0.0836**	**0.264**	<0.0500 U	<0.0500 U	**0.132**	**0.105**	**0.22**	**0.0121**
PCB Homologs (ug/L)																						
Monochlorobiphenyl	NE	NE	NE	<0.005	<0.005 UJ	<0.005	<0.00526	<0.005	<0.005 U	<0.005	<0.005	<0.005	**20.6**	**33.9**	**45.8**	**47**	NS	**0.246**	**0.153**	**0.114**	**0.0702**	**0.0823**
Dichlorobiphenyl	NE	NE	NE	<0.005	<0.005 UJ	<0.005	<0.00526	**0.0103**	<0.005 U	<0.005	<0.005	<0.005	**24.6**	**41.3**	**50**	**48.8**	NS	**1.01**	**3.32**	**3.21**	**0.598**	**0.723**
Trichlorobiphenyl	NE	NE	NE	<0.005	<0.005 UJ	<0.005	<0.00526	**0.00983**	<0.005 U	<0.005	<0.005	<0.005	**7.61**	**8.57**	**9.58**	**8.74**	NS	**1.62**	**3.12**	**2.9**	**0.362**	**0.472**
Tetrachlorobiphenyl	NE	NE	NE	<0.01	<0.01 UJ	<0.01	<0.0105	<0.01	<0.01 U	<0.01	<0.01	<0.01	**1.53**	<0.1	<0.2	<0.1	NS	**0.583**	**0.493**	**0.307**	**0.103**	**0.13**
Pentachlorobiphenyl	NE	NE	NE	<0.01	<0.01 UJ	<0.01	<0.0105	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.05 U	<0.1	<0.2	<0.1	NS	<0.01 U	<0.01	<0.01	<0.0105	<0.0111
Total PCB	0.5	NE	0.5	<0.025	<0.025 U	<0.025	<0.0263	**0.0202**	<0.025 U	<0.025	<0.025	<0.025	**54.4**	**83.8**	**105**	**105**	NS	**3.46**	**7.09**	**6.54**	**1.13**	**1.41**

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criterion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date / SDG	GWPC	1996 RES GWVC	SWPC	MW-AJ13 / MW-AJ13-08212013-1 / 8/21/2013 / SB75529	MW-AJ13 / MW-AJ13-08212013-2 / 8/21/2013 / SB75529	MW-AJ19 / MW-AJ19-072412-1 / 7/24/2012 / SB53379	MW-AJ19 / MW-AJ19-021213-1 / 2/12/2013 / SB64419	MW-AJ19 / MW-AJ19-051613-1 / 5/16/2013 / SB69757	MW-AJ19 / MW-AJ19-08212013-1 / 8/21/2013 / SB75529	MW-AM16 / MW-AM16-072412-1 / 7/24/2012 / SB53379	MW-AM16 / MW-AM16-021413-1 / 2/14/2013 / SB64640	MW-AM16 / MW-AM16-051613-1 / 5/16/2013 / SB69757	MW-AM16 / MW-AM16-08212013-1 / 8/21/2013 / SB75423	MW-AM21 / MW-AM21-072412-1 / 7/24/2012 / SB53379	MW-AM21 / MW-AM21-021213-1 / 2/12/2013 / SB64419	MW-AM21 / MW-AM21-051513-1 / 5/15/2013 / SB69668	MW-AM21 / MW-AM21-08212013-1 / 8/21/2013 / SB75423	MW-AV17 / MW-AV17-072412-1 / 7/24/2012 / SB53379	MW-AV17 / MW-AV17-021413-1 / 2/14/2013 / SB64640	MW-AV17 / MW-AV17-051613-1 / 5/16/2013 / SB69757	MW-AV17 / MW-AV17-08212013-1 / 8/21/2013 / SB75423	MW-BB34 / MW-BB34-072312-1 / 7/23/2012 / SB53282
CT ETPH (mg/L)																						
C_9-C_{32} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U
VOC (ug/L)																						
1,2-Dibromoethane	0.05	4	NE	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U
2-Butanone (MEK)	400	50000	NE	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U
Acetone	700	50000	NE	<10.0	<10.0	<10.0 U	**27.9**	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 UJ
Chloroform	6	287	14100	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Chloromethane	NE	NE	NE	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
m,p-Xylenes	530	21300	NE	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
Methyl Isobutyl Ketone	350	50000	NE	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	**2.01**
Naphthalene	280	NE	NE	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Tetrahydrofuran	NE	NE	NE	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
Toluene	1000	23500	4000000	<1.00	<1.00	<1.00 U	**1.41**	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	**3.46**	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Trichloroethene	5	219	2340	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
PAH-SIMS (ug/L)																						
1-Methylnaphthalene	NE	NE	NE	**0.166**	**0.078**	**0.107**	<0.050	**0.17**	**0.432**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.067**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
2-Methylnaphthalene	NE	NE	NE	**0.085**	**0.05**	**0.077**	<0.050	**0.087**	**0.221**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.081**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Acenaphthene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	**0.089**	**0.093**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.09**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Acenaphthylene	420	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.073**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Anthracene	2000	NE	1100000	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.055**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Benzo(a)anthracene	0.06	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Benzo(a)pyrene	0.2	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ
Chrysene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Fluoranthene	280	NE	3700	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.066**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Fluorene	280	NE	140000	<0.050	<0.050	**0.098**	<0.050	**0.095**	**0.126**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.085**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Naphthalene	280	NE	NE	**0.081**	**0.054**	<0.050 U	<0.050	**0.18**	**0.274**	<0.050 U	<0.050	<0.050	<0.090	<0.050 U	<0.050	<0.050	<0.090	<0.050 U	<0.050	<0.050	<0.090	<0.050 U
Phenanthrene	200	NE	0.077	<0.050	<0.050	<0.050 U	<0.050	**0.16**	**0.159**	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	**0.087**	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ
Pyrene	200	NE	110000	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.051**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U
Total PAHs	NE	NE	NE	**0.332**	**0.182**	**0.282**	<0.050	**0.781**	**1.422**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.538**	<0.050	<0.050	<0.050	<0.050	<0.050
Metals (mg/L)																						
Antimony	0.006	NE	86	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0300	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U
Arsenic	0.05	NE	0.004	<0.0040	<0.0040	**0.0074**	<0.0040	<0.0040	**0.0058**	<0.0040 U	<0.0040	<0.0040	<0.0040	**0.0042**	<0.0040	<0.0040	<0.0040	**0.0048**	<0.0040	<0.0040	<0.0040	<0.0040 U
Barium	1	NE	NE	**0.17**	**0.172**	**0.713**	**0.72**	**1.19**	**0.938**	**0.324**	**0.26**	**0.365**	**0.328**	**0.608**	**0.281**	**0.397**	**0.496**	**0.179**	**0.184**	**0.121**	**0.161**	**0.706**
Beryllium	0.004	NE	0.004	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U
Cadmium	0.005	NE	0.006	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U
Calcium	NE	NE	NE	**41.3**	**42**	**125**	**160**	**231**	**152**	**112**	**119**	**129**	**99.4**	**67.1**	**95**	**103**	**88.8**	**45.6**	**91.5**	**72.4**	**68.6**	**268**
Chromium	0.05	NE	NE	<0.0050	<0.0050	**0.0085**	<0.0050	<0.0050	**0.0266**	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0052**	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Copper	1.3	NE	0.048	<0.0050	<0.0050	**0.009**	<0.0050	<0.0050	**0.0311**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Iron	NE	NE	NE	**13.3**	**13.5**	**56.3**	**24.9**	**69.2**	**76.4**	**50.3**	**51.6**	**64**	**50.2**	**33**	**4.79**	**16.6**	**30.8**	**37.2**	**23.4**	**21.1**	**55.8**	**0.0194**
Lead	0.015	NE	0.013	<0.0075	<0.0075	**0.0232**	<0.0075	<0.0075	**0.0916**	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U
Magnesium	NE	NE	NE	**18.5**	**18.7**	**27.7**	**21.8**	**47.7**	**36.5**	**32.5**	**33**	**37.7**	**30.4**	**19.4**	**24.4**	**25.2**	**23.7**	**8.21**	**12.3**	**9.8**	**10.3**	**102**
Manganese	NE	NE	NE	**0.813**	**0.818**	**3.53**	**2.08**	**4.48**	**4.23**	**8.1**	**8.16**	**11.6**	**9.65**	**3.5**	**1.51**	**2.77**	**3.11**	**0.642**	**0.377**	**0.257**	**0.59**	**1.96**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U
Nickel	0.1	NE	0.88	<0.0050	<0.0050	**0.0052**	<0.0050	<0.0050	**0.015**	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0088**	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0136**
Potassium	NE	NE	NE	**4.53**	**4.63**	**14.6**	**13.4**	**14.3**	**14.6**	**6.86**	**6.36**	**5.7**	**6.18**	**6.69**	**7.44**	**7.64**	**8.22**	**10**	**10.9**	**8.56**	**10.7**	**14**
Selenium	0.05	NE	0.05	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0750	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0300	<0.0150	<0.0150	<0.0150 U
Silver	0.036	NE	0.012	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Sodium	NE	NE	NE	**9.4**	**9.56**	**208**	**986**	**641**	**332**	**24**	**19.2**	**20**	**21.4**	**74.5**	**297**	**225**	**243**	**115**	**54.8**	**35.2**	**44**	**332**
Thallium	0.005	NE	0.063	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	**0.0072**	**0.006**	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Vanadium	0.05	NE	NE	<0.0050	<0.0050	**0.0071**	<0.0050	<0.0050	**0.0238**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Zinc	5	NE	0.123	<0.0125	<0.0125	<0.0300 U	**0.0094**	<0.0080	**0.108**	<0.0300 U	<0.0050	**0.0502**	**0.0064**	<0.0300 U	**0.0398**	**0.0058**	<0.0050	**1.05**	**0.0148**	**0.0211**	**0.332**	**0.0069**
PCB Homologs (ug/L)																						
Monochlorobiphenyl	NE	NE	NE	**0.16**	**0.145**	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556	<0.005	<0.005 U
Dichlorobiphenyl	NE	NE	NE	**0.767**	**0.717**	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556	<0.005	<0.005 U
Trichlorobiphenyl	NE	NE	NE	**0.357**	**0.374**	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.00556	<0.005	<0.005 U
Tetrachlorobiphenyl	NE	NE	NE	**0.0691**	**0.0726**	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.0111	<0.01	<0.01 U
Pentachlorobiphenyl	NE	NE	NE	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.0111	<0.01	<0.01 U
Total PCB	0.5	NE	0.5	**1.35**	**1.31**	<0.025 U	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.0278	<0.025	<0.025 U

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criterion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date	GWPC	1996 RES GWVC	SWPC	MW-BB34	MW-BB34	MW-BB34	MW-F35	MW-F35	MW-F35	MW-F35	MW-L25	MW-L25	MW-L25	MW-L25	MW-AP11	MW-AP11	MW-AP28	MW-AP28	MW-AP28	MW-P11	MW-P11	MW-P11
Sample ID				MW-BB34-021213-1	MWBB34-051413-1	MW-BB34-08212013-1	MW-F35-072612-1	MW-F35-021313-1	MW-F35-051413-1	MW-F35-08192013-1	MW-L25-072612-1	MW-L25-021313-1	MW-L25-051413-1	MW-L25-08192013-1	MW-AP11-021413-1	MW-AP11-051513-1	MW-AP28-072312-1	MW-AP28-051513-1	MW-AP28-08212013-1	MW-P11-072412-1	MW-P11-021313-1	MW-P11-051413-1
Sample Date				2/12/2013	5/14/2013	8/21/2013	7/26/2012	2/13/2013	5/14/2013	8/19/2013	7/26/2012	2/13/2013	5/14/2013	8/19/2013	2/14/2013	5/15/2013	7/23/2012	5/15/2013	8/21/2013	7/24/2012	2/13/2013	5/14/2013
SDG				SB64419	SB69668	SB75423	12070542	SB64486	SB69540	SB75322	12070542	SB64486	SB69540	SB75322	SB64640	SB69757	SB53282	SB69757	SB75423	SB53469	SB64588	SB69540
CT ETPH (mg/L)																						
C_9-C_{36} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	<0.2	<0.2	NS	<0.2	<0.2	<0.2	<0.1 U	<0.3	<0.2	<0.2	<0.2	<0.3	<0.1 U	<0.2	<0.2	<0.1 U	<0.2	<0.2
VOC (ug/L)																						
1,2-Dibromoethane	0.05	4	NE	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50 U	<0.50	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0 U	<10.0	<10.0
Acetone	700	50000	NE	<10.0	<10.0	<10.0	<12.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0 U	<10.0	<10.0
Chloroform	6	287	14100	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	**1.85**	<1.00	<1.00 U	<1.00	<1.00
Chloromethane	NE	NE	NE	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00 U	<2.00	<2.00
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00 U	<1.00	<1.00
m,p-Xylenes	530	21300	NE	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00 U	<2.00	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0 U	<10.0	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	**2.45**	**1.59**	**1.66**	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00 U	<1.00	<1.00
Naphthalene	280	NE	NE	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00 U	<1.00	<1.00
Tetrahydrofuran	NE	NE	NE	**2.68**	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00 U	<2.00	<2.00
Toluene	1000	23500	4000000	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00 U	<1.00	<1.00
Trichloroethene	5	219	2340	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00 U	<1.00	<1.00
PAH-SIMS (ug/L)																						
1-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Acenaphthene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	**0.073**	<0.050	<0.050	<0.050 U	<0.050	<0.050
Acenaphthylene	420	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Anthracene	2000	NE	1100000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 UJ	<0.050	<0.050	<0.050 U	<0.050	<0.050
Chrysene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Fluoranthene	280	NE	3700	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Fluorene	280	NE	140000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	**0.088**	<0.050	<0.050	<0.050 U	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Naphthalene	280	NE	NE	<0.050	<0.050	<0.090	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.090	<0.050 U	<0.050	<0.050
Phenanthrene	200	NE	0.077	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 UJ	<0.050	<0.050	<0.050 U	<0.050	<0.050
Pyrene	200	NE	110000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.066	<0.050 U	<0.050	<0.050	<0.050 U	<0.050	<0.050
Total PAHs	NE	NE	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.161**	<0.050	<0.050	<0.050	<0.050	<0.050
Metals (mg/L)																						
Antimony	0.006	NE	86	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060
Arsenic	0.05	NE	0.004	<0.0040	<0.0040	<0.0040	**0.0086**	<0.0040	<0.0040	<0.0040	<0.0040 U	**0.0047**	**0.0088**	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040
Barium	1	NE	NE	**0.61**	**0.476**	**0.561**	**0.166**	**0.453**	**0.201**	**0.162**	**0.103**	**0.834**	**0.146**	**0.265**	**0.0703**	**0.08**	**0.0982**	**0.32**	**0.269**	**0.181**	**0.0766**	**0.0935**
Beryllium	0.004	NE	0.004	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020
Cadmium	0.005	NE	0.006	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025
Calcium	NE	NE	NE	**249**	**234**	**221**	**64.5**	**115**	**66.6**	**52.4**	**35**	**148**	**51.8**	**74.8**	**20.9**	**23.5**	**19.1**	**59.2**	**44.5**	**77.8**	**74.4**	**39.7**
Chromium	0.05	NE	NE	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Copper	1.3	NE	0.048	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	**0.0086**	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Iron	NE	NE	NE	**0.448**	**0.0856**	**0.0938**	**2.29 J**	**0.0798**	**0.0358**	**0.403**	**0.738**	**10.5**	**6.55**	**0.968**	**0.443**	**8.14**	**0.221**	**0.188**	**0.24**	**9.82**	**0.0546**	**0.318**
Lead	0.015	NE	0.013	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075
Magnesium	NE	NE	NE	**107**	**107**	**106**	**13.7**	**27.8**	**18.6**	**13.6**	**7.91**	**28.9**	**11.8**	**15.9**	**5.65**	**7**	**5.94**	**15.2**	**12.8**	**20.5**	**17.5**	**15.9**
Manganese	NE	NE	NE	**1.8**	**3.34**	**3.98**	**2.46 J**	**2.22**	**2.64**	**2.37**	**1.48**	**10.7**	**3.76**	**2.73**	**1.1**	**1.54**	**0.145**	**0.058**	**0.203**	**0.840 J-**	**0.63**	**0.984**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020
Nickel	0.1	NE	0.88	**0.0122**	**0.0127**	**0.013**	<0.0050 U	**0.0071**	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	**0.0128**	**0.0162**	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Potassium	NE	NE	NE	**12.9**	**11.8**	**14.5**	**8.70 J**	**12.3**	**7.8**	**7.84**	**5.97**	**15.1**	**6.26**	**10.7**	**3.75**	**4.55**	**4.91**	**7.38**	**7.58**	**7.72**	**5.15**	**4.9**
Selenium	0.05	NE	0.05	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150
Silver	0.036	NE	0.012	<0.0050	<0.0050	<0.0050	<0.0050 UJ	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Sodium	NE	NE	NE	**224**	**146**	**205**	**119**	**414**	**122**	**108**	**82**	**610**	**101**	**292**	**60.1**	**38.8**	**142**	**225**	**183**	**16.7 J-**	**12.1**	**11.7**
Thallium	0.005	NE	0.063	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	**0.0076**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Vanadium	0.05	NE	NE	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050
Zinc	5	NE	0.123	**0.01**	**0.0084**	**0.0078**	<0.0050 U	**0.01**	<0.0050	<0.0050	**0.0086**	**0.0071**	<0.0050	<0.0050	**0.0342**	**0.0796**	<0.0050 U	<0.0080	**0.0086**	<0.0500 U	**0.015**	<0.0050
PCB Homologs (ug/L)																						
Monochlorobiphenyl	NE	NE	NE	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 UJ	<0.005	<0.005	<0.005	<0.005	<0.00505	<0.005 U	<0.005	<0.005	<0.005 U	<0.005	<0.005
Dichlorobiphenyl	NE	NE	NE	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005	<0.00505	<0.005 U	<0.005	<0.005	<0.005 U	<0.005	<0.005
Trichlorobiphenyl	NE	NE	NE	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005	<0.00505	<0.005 U	<0.005	<0.005	<0.005 U	<0.005	<0.005
Tetrachlorobiphenyl	NE	NE	NE	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01	<0.0101	<0.01 U	<0.01	<0.01	<0.01 U	<0.01	<0.01
Pentachlorobiphenyl	NE	NE	NE	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01	<0.0101	<0.01 U	<0.01	<0.01	<0.01 U	<0.01	<0.01
Total PCB	0.5	NE	0.5	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.025	<0.025	<0.025	<0.0253	<0.025 U	<0.025	<0.025	<0.025 U	<0.025	<0.025

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criteriion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date / SDG	GWPC	1996 RES GWVC	SWPC	MW-P11 MW-P11-08202013-1 8/20/2013 SB75322	MW-P7 MW-P7-072412-1 7/24/2012 SB53469	MW-P7 MW-P7-021313-1 2/13/2013 SB64486	MW-P7 MW-P7-051413-1 5/14/2013 SB69540	MW-P7 MW-P7-08202013-1 8/20/2013 SB75322	MW-R20 MW-R20-072612-1 7/26/2012 12070542	MW-R20 MW-R20-021313-1 2/13/2013 SB64486	MW-R20 MW-R20-051413-1 5/14/2013 SB69540	MW-R20 MW-R20-08202013-1 8/20/2013 SB75322	MW-S15 MW-S15-072512-1 7/25/2012 12070542	MW-S15 MW-S15-072512-2 7/25/2012 12070542	MW-S15 MW-S15-021313-1 2/13/2013 SB64486	MW-S15 MW-S15-021313-2 2/13/2013 SB64486	MW-S15 MW-S15-051513-1 5/15/2013 SB69668	MW-S15 MW-S15-051513-2 5/15/2013 SB69668	MW-S15 MW-S15-08202013-1 8/20/2013 SB75322	MW-S15 MW-S15-08202013-2 8/20/2013 SB75322	MW-T23 MW-T23-072612-1 7/26/2012 12070542	MW-T23 MW-T23-021313-1 2/13/2013 SB64588
CT ETPH (mg/L)																						
C_9-C_{32} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.1 U	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NS	<0.2
VOC (ug/L)																						
1,2-Dibromoethane	0.05	4	NE	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50 U	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 U	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0
Acetone	700	50000	NE	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0
Chloroform	6	287	14100	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
Chloromethane	NE	NE	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
m,p-Xylenes	530	21300	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0 U	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0 U	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
Naphthalene	280	NE	NE	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
Tetrahydrofuran	NE	NE	NE	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00 U	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 U	<2.00
Toluene	1000	23500	4000000	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
Trichloroethene	5	219	2340	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00 U	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 U	<1.00
PAH-SIMS (ug/L)																						
1-Methylnaphthalene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Acenaphthene	NE	NE	NE	<0.050	**0.056**	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.275**	<0.050
Acenaphthylene	420	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Anthracene	2000	NE	1100000	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Chrysene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Fluoranthene	280	NE	3700	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.099**	<0.050
Fluorene	280	NE	140000	<0.050	**0.06**	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.134**	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Naphthalene	280	NE	NE	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050 U	<0.050
Phenanthrene	200	NE	0.077	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050 UJ	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.218 J**	<0.050
Pyrene	200	NE	110000	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050 U	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.084**	<0.050
Total PAHs	NE	NE	NE	<0.050	**0.116**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.81**	<0.050
Metals (mg/L)																						
Antimony	0.006	NE	86	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060
Arsenic	0.05	NE	0.004	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040	**0.0046**	**0.0047**	<0.0040	**0.005**	**0.0047**	<0.0080	**0.0051**	**0.005**	**0.0084**	**0.0072**
Barium	1	NE	NE	**0.0975**	**0.0816**	**0.0804**	**0.0916**	**0.0964**	**0.119**	**0.0773**	**0.0714**	**0.0796**	**0.155**	**0.153**	**0.195**	**0.216**	**0.207**	**0.212**	**0.189**	**0.191**	**0.641**	**0.448**
Beryllium	0.004	NE	0.004	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020
Cadmium	0.005	NE	0.006	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025
Calcium	NE	NE	NE	**43.7**	**30.9**	**30.3**	**29.2**	**28.5**	**49**	**50.1**	**41.3**	**33.9**	**42.2**	**42.3**	**57.6**	**59.2**	**57.2**	**58.8**	**49.8**	**50**	**105**	**44.2**
Chromium	0.05	NE	NE	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**0.0474**	**0.0474**
Copper	1.3	NE	0.048	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**0.0259**	**0.0308**
Iron	NE	NE	NE	**2.06**	**0.378**	**0.218**	**0.232**	**0.487**	**0.0395**	**0.0636**	**0.048**	<0.0150	**9.5**	**9.45**	**11.7**	**12.4**	**13.5**	**13.8**	**11.7**	**11.8**	**22.5 J**	**21.8**
Lead	0.015	NE	0.013	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	**0.0196**	**0.0226**
Magnesium	NE	NE	NE	**16**	**11.3**	**10.7**	**10.8**	**10.4**	**8.59**	**8.4**	**7.32**	**6.33**	**18**	**17.9**	**19.2**	**20.8**	**23.4**	**24**	**20.6**	**20.7**	**31.9**	**14.7**
Manganese	NE	NE	NE	**0.898**	**2.81 J-**	**2.03**	**1.79**	**2.02**	**0.0116**	**0.0098**	**0.0046**	<0.0020	**0.768**	**0.765**	**0.833**	**0.902**	**0.951**	**0.97**	**0.838**	**0.84**	**3.76 J**	**1.74**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020
Nickel	0.1	NE	0.88	**0.0106**	**0.0058**	**0.005**	**0.0058**	**0.009**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**0.0242**	**0.0182**
Potassium	NE	NE	NE	**5.41**	**7.31**	**6.02**	**5.75**	**6.3**	**5.87**	**3.9**	**3.96**	**4.46**	**7.3**	**7.24**	**7.42**	**7.84**	**7.86**	**8.04**	**7.8**	**7.9**	**21.4 J**	**12.5**
Selenium	0.05	NE	0.05	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150
Silver	0.036	NE	0.012	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 UJ	<0.0050
Sodium	NE	NE	NE	**12.8**	**19.8 J-**	**11.7**	**11.3**	**10.7**	**7.27**	**5**	**5.23**	**6.24**	**25.6**	**25.6**	**20.5**	**23.4**	**28.3**	**29.2**	**29.8**	**30.1**	**104**	**85.8**
Thallium	0.005	NE	0.063	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050
Vanadium	0.05	NE	NE	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**0.0443**	**0.0412**
Zinc	5	NE	0.123	<0.0050	<0.0500 U	**0.04**	**0.01**	<0.0050	<0.0050 U	**0.0232**	**0.0096**	<0.0050	<0.0050 U	<0.0050 U	<0.0050	**0.0053**	<0.0050	<0.0050	<0.0050	<0.0050	**0.0572**	**0.106**
PCB Homologs (ug/L)																						
Monochlorobiphenyl	NE	NE	NE	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 UJ	<0.005	<0.005	<0.00521	<0.005 UJ	<0.005 U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0108 J-**	<0.005
Dichlorobiphenyl	NE	NE	NE	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 UJ	<0.005	<0.005	<0.00521	<0.005 UJ	<0.005 U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.00958 J-**	<0.005
Trichlorobiphenyl	NE	NE	NE	<0.005	<0.005 U	<0.005	<0.005	<0.005	<0.005 UJ	<0.005	<0.005	<0.00521	<0.005 UJ	**0.00803**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 UJ	<0.005
Tetrachlorobiphenyl	NE	NE	NE	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 UJ	<0.01	<0.01	<0.0104	<0.01 UJ	**0.0123**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01 UJ	<0.01
Pentachlorobiphenyl	NE	NE	NE	<0.01	<0.01 U	<0.01	<0.01	<0.01	<0.01 UJ	<0.01	<0.01	<0.0104	<0.01 UJ	<0.01 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01 UJ	<0.01
Total PCB	0.5	NE	0.5	<0.025	<0.025 U	<0.025	<0.025	<0.025	<0.025 U	<0.025	<0.025	<0.026	<0.025 U	**0.0203**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	**0.0204**	<0.025

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criteriion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID / Sample ID / Sample Date / SDG	GWPC	1996 RES GWVC	SWPC	MW-T23 / MW-T23-051413-1 / 5/14/2013 / SB69668	MW-T23 / MW-T23-08212013-1 / 8/21/2013 / SB75529	MW-V12 / MW-V12-072512-1 / 7/25/2012 / 12070542	MW-V12 / MW-V12-021413-1 / 2/14/2013 / SB64588	MW-V12 / MW-V12-051513-1 / 5/15/2013 / SB69668	MW-V12 / MW-V12-08202013-1 / 8/20/2013 / SB75322	MW-V18 / MW-V18-072512-1 / 7/25/2012 / 12070542	MW-V18 / MW-V18-021213-1 / 2/12/2013 / SB64419	MW-V18 / MW-V18-051413-1 / 5/14/2013 / SB69540	MW-V18 / MW-V18-08202013-1 / 8/20/2013 / SB75322
CT ETPH (mg/L)													
C_9-C_{36} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	NS	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2
VOC (ug/L)													
1,2-Dibromoethane	0.05	4	NE	<0.50	NS	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0	NS	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0
Acetone	700	50000	NE	<10.0	NS	<10.0 U	**176**	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0
Chloroform	6	287	14100	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Chloromethane	NE	NE	NE	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	**17.5**
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
m,p-Xylenes	530	21300	NE	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0	NS	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Naphthalene	280	NE	NE	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Tetrahydrofuran	NE	NE	NE	<2.00	NS	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00
Toluene	1000	23500	4000000	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Trichloroethene	5	219	2340	<1.00	NS	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	**1.7**
PAH-SIMS (ug/L)													
1-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Acenaphthene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Acenaphthylene	420	NE	0.3	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Anthracene	2000	NE	1100000	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050	**0.073**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050	**0.093**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	**0.076**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	**0.07**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	**0.09**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Chrysene	NE	NE	NE	<0.050	**0.073**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Fluoranthene	280	NE	3700	<0.050	**0.179**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Fluorene	280	NE	140000	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	**0.068**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Naphthalene	280	NE	NE	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.066**	<0.050 U	<0.050	<0.050	<0.050
Phenanthrene	200	NE	0.077	<0.050	**0.061**	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050
Pyrene	200	NE	110000	<0.050	**0.173**	<0.050 U	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Total PAHs	NE	NE	NE	<0.050	**0.956**	<0.050	<0.050	<0.050	**0.066**	<0.050	<0.050	<0.050	<0.050
Metals (mg/L)													
Antimony	0.006	NE	86	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060
Arsenic	0.05	NE	0.004	**0.0114**	**0.0224**	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U	<0.0040	<0.0040	<0.0040
Barium	1	NE	NE	**0.454**	**1.55**	**0.718**	**0.75**	**0.473**	**0.622**	**0.642**	**0.64**	**0.407**	**0.383**
Beryllium	0.004	NE	0.004	**0.0049**	**0.0064**	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020
Cadmium	0.005	NE	0.006	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025
Calcium	NE	NE	NE	**51.3**	**110**	**142**	**90.6**	**91.6**	**108**	**205**	**264**	**169**	**125**
Chromium	0.05	NE	NE	**0.0564**	**0.167**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Copper	1.3	NE	0.048	**0.0504**	**0.11**	<0.0050 U	**0.0056**	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Iron	NE	NE	NE	**31.2**	**82.6**	**13.4**	**7.8**	**14.8**	**16.6**	**5.94**	**2.51**	**1.72**	**7.11**
Lead	0.015	NE	0.013	**0.0492**	**0.0858**	<0.0075 U	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075
Magnesium	NE	NE	NE	**16.5**	**43.6**	**67.6**	**46**	**42.1**	**52.2**	**41.7**	**56**	**33.9**	**27.4**
Manganese	NE	NE	NE	**0.991**	**3.78**	**0.546**	**0.36**	**0.263**	**0.313**	**1.57**	**1**	**0.626**	**1.22**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020
Nickel	0.1	NE	0.88	**0.0266**	**0.0666**	**0.0051**	<0.0050	<0.0050	**0.0088**	<0.0050 U	<0.0050	<0.0050	**0.005**
Potassium	NE	NE	NE	**12.5**	**33.3**	**52**	**43.4**	**42.9**	**45.8**	**28.5**	**29**	**23.4**	**19.2**
Selenium	0.05	NE	0.05	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150
Silver	0.036	NE	0.012	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Sodium	NE	NE	NE	**55**	**76.4**	**224**	**168**	**203**	**219**	**592**	**692**	**632**	**414**
Thallium	0.005	NE	0.063	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Vanadium	0.05	NE	NE	**0.062**	**0.154**	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Zinc	5	NE	0.123	**0.107**	**0.221**	<0.0050 U	**0.0093**	<0.0050	<0.0050	<0.0050 U	**0.0096**	<0.0050	<0.0050
PCB Homologs (ug/L)													
Monochlorobiphenyl	NE	NE	NE	<0.00556	<0.0061	<0.005 U	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005
Dichlorobiphenyl	NE	NE	NE	<0.00556	<0.0061	**0.0133**	<0.005	<0.005	<0.005	<0.005 U	<0.005	<0.005	<0.005
Trichlorobiphenyl	NE	NE	NE	<0.00556	<0.0061	**0.0221**	<0.005	<0.005	<0.005	**0.00631**	<0.005	<0.005	<0.005
Tetrachlorobiphenyl	NE	NE	NE	<0.0111	<0.0122	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01
Pentachlorobiphenyl	NE	NE	NE	<0.0111	<0.0122	<0.01 U	<0.01	<0.01	<0.01	<0.01 U	<0.01	<0.01	<0.01
Total PCB	0.5	NE	0.5	<0.0278	<0.0305	**0.0353**	<0.025	<0.025	<0.025	**0.00631**	<0.025	<0.025	<0.025

Location ID / Sample ID / Sample Date / SDG	MW-X17 / MW-X17-072512-1 / 7/25/2012 / SB53550	MW-X17 / MW-X17-021213-1 / 2/12/2013 / SB64419	MW-X17 / MW-X17-051513-1 / 5/15/2013 / SB69668	MW-X17 / MW-X17-08202013-1 / 8/20/2013 / SB75322	MW-Y15 / MW-Y15-072512-1 / 7/25/2012 / SB53469	MW-Y15 / MW-Y15-021413-1 / 2/14/2013 / SB64588	MW-Y15 / MW-Y15-051513-1 / 5/15/2013 / SB69668	MW-Y15 / MW-Y15-08202013-1 / 8/20/2013 / SB75322	MW-Y26 / MW-Y26-072612-1 / 7/26/2012 / 12070542
CT ETPH (mg/L)									
C_9-C_{36} Aliphatic Hydrocarbons (ETPH)	<0.1 U	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	**0.4**	<0.1 U
VOC (ug/L)									
1,2-Dibromoethane	<0.50 U	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50	<0.50 U
2-Butanone (MEK)	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U
Acetone	<10.0 U	**25.7**	<10.0	**19.9**	<10.0 U	<10.0	<10.0	<10.0	<10.0 U
Chloroform	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Chloromethane	<2.00 U	<2.00	<2.00	**42.7**	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
cis-1,2-Dichloroethylene	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	**1**
m,p-Xylenes	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
Methyl Isobutyl Ketone	<10.0 U	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0	<10.0 U
Methyl Tert Butyl Ether (MTBE)	**2.38**	<1.00	**1.97**	**3.81**	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Naphthalene	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Tetrahydrofuran	<2.00 U	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00	<2.00 U
Toluene	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
Trichloroethene	<1.00 U	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00	<1.00 U
PAH-SIMS (ug/L)									
1-Methylnaphthalene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	**0.222**	**0.463**	**0.252**	<0.050 U
2-Methylnaphthalene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	**0.095**	**0.177**	**0.116**	<0.050 U
Acenaphthene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	**0.318**	**0.756**	**0.484**	<0.050 U
Acenaphthylene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Anthracene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	**0.071**	<0.050	<0.050 U
Benzo(a)anthracene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Benzo(a)pyrene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Benzo(b)fluoranthene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Benzo(g,h,i)perylene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Benzo(k)fluoranthene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Chrysene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Dibenzo(a,h)anthracene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Fluoranthene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Fluorene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	**0.168**	**0.335**	**0.257**	<0.050 U
Indeno(1,2,3-cd)pyrene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Naphthalene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	**0.079**	<0.050	<0.050 U
Phenanthrene	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 UJ	**0.078**	**0.107**	**0.077**	<0.050 UJ
Pyrene	<0.050 U	<0.050	<0.050	<0.050	<0.050 UJ	<0.050	<0.050	<0.050	<0.050 U
Total PAHs	<0.050	<0.050	<0.050	<0.050	<0.050	**0.881**	**1.988**	**1.186**	<0.050
Metals (mg/L)									
Antimony	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060	<0.0060 U
Arsenic	<0.0040 U	<0.0040	<0.0040	**0.0051**	<0.0040 U	<0.0040	<0.0040	<0.0040	<0.0040 U
Barium	**2.44**	**1.67**	**2.24**	**2.9**	**0.508**	**0.421**	**0.638**	**0.803**	**0.222**
Beryllium	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020	<0.0020 U
Cadmium	**0.0025**	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025	<0.0025 U
Calcium	**276**	**218**	**314**	**321**	**94.7**	**90**	**84.4**	**82.8**	**146**
Chromium	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	**0.0056**	**0.0155**	<0.0050 U
Copper	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	**0.007**	**0.0179**	**0.062**	<0.0050 U
Iron	**99**	**44.8**	**107**	**142**	**18.2**	**12.8**	**21.9**	**31.2**	**0.0623**
Lead	<0.0075 U	<0.0075	**0.0119**	**0.0125**	**0.012**	**0.0096**	**0.057**	**0.186**	<0.0075 U
Magnesium	**83.6**	**39**	**93.4**	**103**	**39.8**	**32.2**	**39.4**	**43.5**	**41.6**
Manganese	**6.48**	**3.54**	**7.97**	**11.4**	**0.888 J-**	**0.658**	**0.936**	**1.22**	**3.15**
Mercury	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020	<0.00020 U
Nickel	<0.0050 U	<0.0050	**0.0062**	**0.0068**	<0.0050 U	<0.0050	<0.0050	**0.0142**	**0.0102**
Potassium	**82**	**37.6**	**65.9**	**74**	**42**	**28**	**44.4**	**53.8**	**13.4**
Selenium	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150	<0.0150 U
Silver	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Sodium	**1600**	**2940**	**2000**	**1890**	**89.2 J-**	**55.8**	**92.7**	**113**	**159**
Thallium	<0.0075 U	<0.0050	<0.0050	<0.0250	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U
Vanadium	<0.0050 U	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	**0.0126**	<0.0050 U
Zinc	**0.0546**	**0.0144**	**0.006**	**0.0079**	<0.0500 U	**0.0346**	**0.0852**	**0.294**	<0.0050 U
PCB Homologs (ug/L)									
Monochlorobiphenyl	NS	<0.005	<0.005	<0.005	**2.08**	**1.69**	**4.46**	**4.59**	<0.005 UJ
Dichlorobiphenyl	NS	<0.005	<0.005	<0.005	**2.58**	**2.47**	**5.43**	**7.07**	<0.005 UJ
Trichlorobiphenyl	NS	<0.005	<0.005	<0.005	**1.49**	**0.468**	**1.39**	**2.44**	<0.005 UJ
Tetrachlorobiphenyl	NS	<0.01	<0.01	<0.01	**0.507**	<0.01	**0.889**	**0.974**	<0.01 UJ
Pentachlorobiphenyl	NS	<0.01	<0.01	<0.01	**0.0132**	<0.01	**0.0465**	**0.246**	<0.01 UJ
Total PCB	NS	<0.025	<0.025	<0.025	**6.68**	**4.63**	**12.3**	**15.3**	<0.025 U

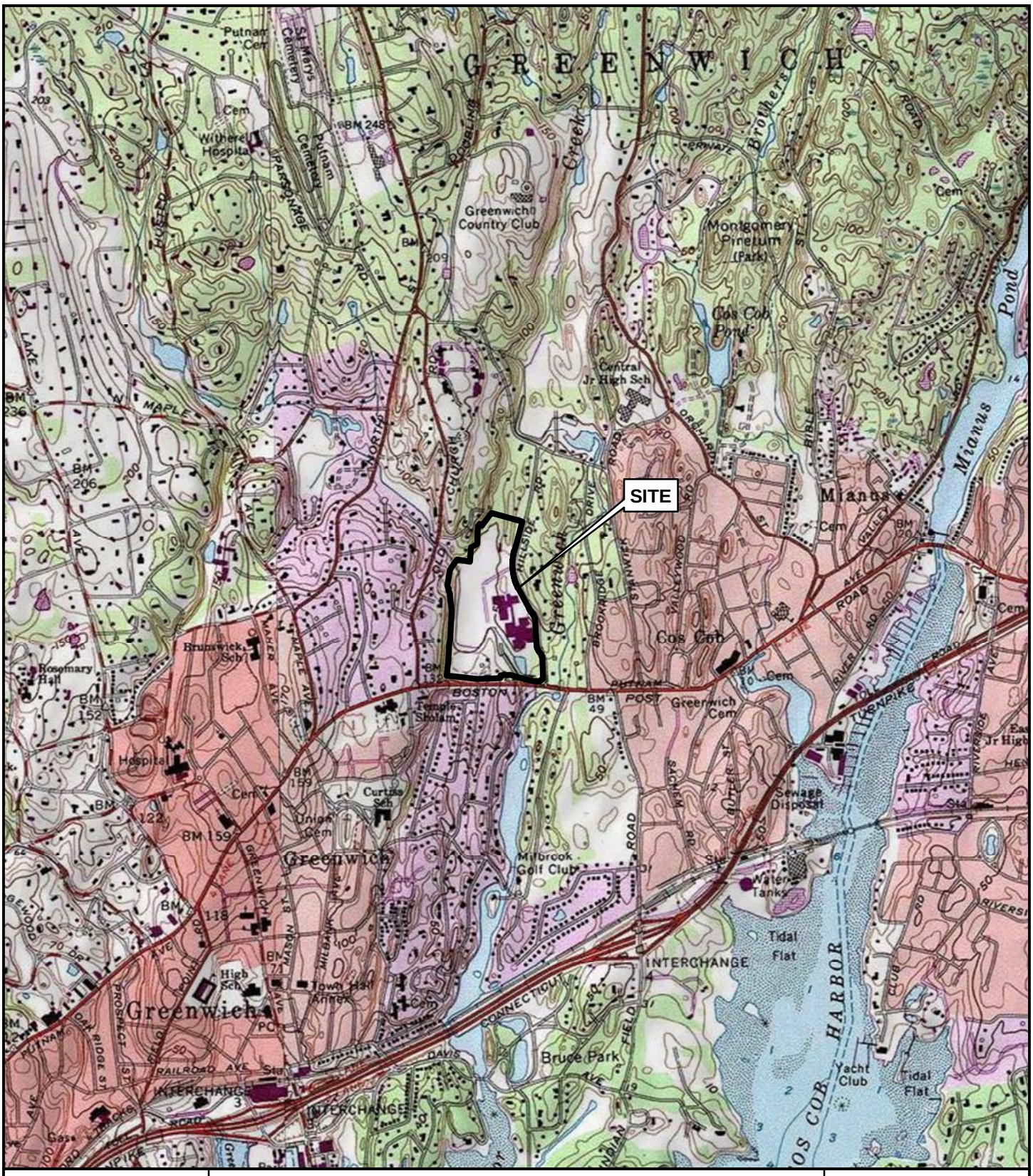
Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criteriion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Table 2-2
Groundwater Analytical Data
Remedial Action Plan

Location ID Sample ID Sample Date SDG	GWPC	1996 RES GWVC	SWPC	MW-Y26 MW-Y26-021213-1 2/12/2013 SB64486	MW-Y26 MW-Y26-051413-1 5/14/2013 SB69540	MW-Y26 MW-Y26-08202013-1 8/20/2013 SB75322	MW-Y9 MW-Y9-072512-1 7/25/2012 SB53469	MW-Y9 MW-Y9-021413-1 2/14/2013 SB64588	MW-Y9 MW-Y9-051513-1 5/15/2013 SB69668	MW-Y9 MW-Y9-08202013-1 8/20/2013 SB75423
CT ETPH (mg/L)										
C_5-C_{36} Aliphatic Hydrocarbons (ETPH)	0.25	NE	NE	<0.2	<0.2	<0.2	<0.1 U	<0.2	<0.2	<0.2
VOC (ug/L)										
1,2-Dibromoethane	0.05	4	NE	<0.50	<0.50	<0.50	<0.50 U	<0.50	<0.50	<0.50
2-Butanone (MEK)	400	50000	NE	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0
Acetone	700	50000	NE	<10.0	<10.0	<10.0	<12.0 U	<10.0	<10.0	<10.0
Chloroform	6	287	14100	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Chloromethane	NE	NE	NE	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00
cis-1,2-Dichloroethylene	70	NE	NE	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
m,p-Xylenes	530	21300	NE	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00
Methyl Isobutyl Ketone	350	50000	NE	<10.0	<10.0	<10.0	<10.0 U	<10.0	<10.0	<10.0
Methyl Tert Butyl Ether (MTBE)	70 (1)	50000	NE	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Naphthalene	280	NE	NE	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Tetrahydrofuran	NE	NE	NE	<2.00	<2.00	<2.00	<2.00 U	<2.00	<2.00	<2.00
Toluene	1000	23500	4000000	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
Trichloroethene	5	219	2340	<1.00	<1.00	<1.00	<1.00 U	<1.00	<1.00	<1.00
PAH-SIMS (ug/L)										
1-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
2-Methylnaphthalene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Acenaphthene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	**0.053**
Acenaphthylene	420	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Anthracene	2000	NE	1100000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.06	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.2	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.08	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.5	NE	0.3	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Chrysene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Fluoranthene	280	NE	3700	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Fluorene	280	NE	140000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	NE	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Naphthalene	280	NE	NE	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.090
Phenanthrene	200	NE	0.077	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Pyrene	200	NE	110000	<0.050	<0.050	<0.050	<0.050 U	<0.050	<0.050	<0.050
Total PAHs	NE	NE	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.053**
Metals (mg/L)										
Antimony	0.006	NE	86	<0.0060	<0.0060	<0.0060	<0.0060 U	<0.0060	<0.0060	<0.0060
Arsenic	0.05	NE	0.004	<0.0040	<0.0040	<0.0040	**0.01**	<0.0040	**0.005**	<0.0040
Barium	1	NE	NE	**0.228**	**0.19**	**0.174**	**0.602**	**0.888**	**0.972**	**0.842**
Beryllium	0.004	NE	0.004	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020	<0.0020	<0.0020
Cadmium	0.005	NE	0.006	<0.0025	<0.0025	<0.0025	<0.0025 U	<0.0025	<0.0025	<0.0025
Calcium	NE	NE	NE	**168**	**174**	**134**	**114**	**49.8**	**67**	**72.6**
Chromium	0.05	NE	NE	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Copper	1.3	NE	0.048	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Iron	NE	NE	NE	**0.0241**	**0.0159**	<0.0150	**43.8**	**2.63**	**15.2**	**36**
Lead	0.015	NE	0.013	<0.0075	<0.0075	<0.0075	<0.0075 U	<0.0075	<0.0075	<0.0075
Magnesium	NE	NE	NE	**45.2**	**47.2**	**35**	**53.4**	**31.2**	**40.7**	**41.1**
Manganese	NE	NE	NE	**3.16**	**3.39**	**2.56**	**1.72 J-**	**0.187**	**0.64**	**1.2**
Mercury	0.002	NE	0.0004	<0.00020	<0.00020	<0.00020	<0.00020 U	<0.00020	<0.00020	<0.00020
Nickel	0.1	NE	0.88	**0.0094**	**0.0098**	**0.0064**	**0.0086**	<0.0050	<0.0050	<0.0050
Potassium	NE	NE	NE	**13.4**	**12.8**	**11.3**	**36.3**	**27.3**	**31.7**	**33.3**
Selenium	0.05	NE	0.05	<0.0150	<0.0150	<0.0150	<0.0150 U	<0.0150	<0.0150	<0.0150
Silver	0.036	NE	0.012	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Sodium	NE	NE	NE	**218**	**203**	**155**	**142 J-**	**61.8**	**81.3**	**92.6**
Thallium	0.005	NE	0.063	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Vanadium	0.05	NE	NE	<0.0050	<0.0050	<0.0050	<0.0050 U	<0.0050	<0.0050	<0.0050
Zinc	5	NE	0.123	**0.0134**	**0.0066**	**0.0064**	<0.0500 U	**0.0508**	**0.0268**	<0.0050
PCB Homologs (ug/L)										
Monochlorobiphenyl	NE	NE	NE	NS	<0.005	<0.0051	<0.005 U	<0.00505	<0.00526	<0.005
Dichlorobiphenyl	NE	NE	NE	NS	<0.005	<0.0051	<0.005 U	<0.00505	<0.00526	<0.005
Trichlorobiphenyl	NE	NE	NE	NS	<0.005	<0.0051	<0.005 U	<0.00505	<0.00526	<0.005
Tetrachlorobiphenyl	NE	NE	NE	NS	<0.01	<0.0102	<0.01 U	<0.0101	<0.0105	<0.01
Pentachlorobiphenyl	NE	NE	NE	NS	<0.01	<0.0102	<0.01 U	<0.0101	<0.0105	<0.01
Total PCB	0.5	NE	0.5	NS	<0.025	<0.0255	<0.025 U	<0.0253	<0.0263	<0.025

Notes:
This is a summary table. Only detected compounds are presented.
Bold = Detected above reporting limit
Orange highlighted cells exceed GWPC.
Yellow highlighted cells exceed SWPC.
<0.01 = Not detected above the specified laboratory reporting limit
GWPC = Ground water protection criteria.
RES VC = Residential volatilization criteria.
SWPC = Surface water protection criteria.
J = Estimated value
U = Not detected above the specified sample reporting limit
NE = Criteriion has not been established
NS = Not Sampled for Specific Analyte
ug/L = microgram per liter
NS = Not sampled for this constituent..
mg/L = miligram per Liter
(1) 100 µg/l is the promulgated GWPC. 70 ug/l is the Drinking Water Action Level set by the

Tables



Map Location

SITE LOCATION MAP
GREENWICH HIGH SCHOOL
10 HILLSIDE ROAD
GREENWICH, CT

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: National Geographic Society Quadrangle: Stamford, CT.

Scale: 1:24,000

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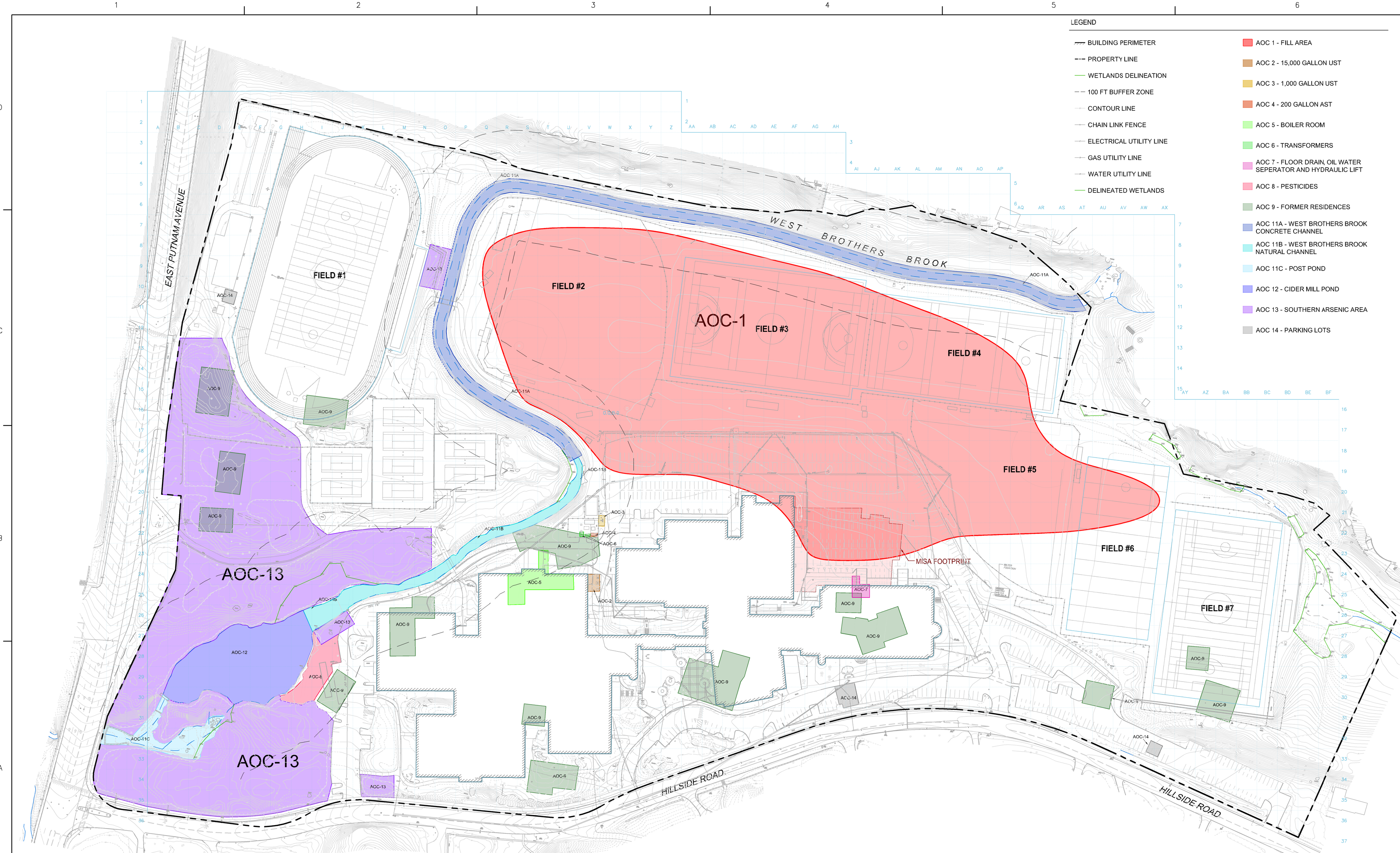
Figure 1-1

Project #: 60225155

Path: J:\Indl_Service\Project Files\Greenwich_High_School\GIS\Projects\Remedial_Investigation_Report\Figure_1-1_Site_Location_Map.mxd



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SCALE:

1" = 80'

0 80 160 240
SCALE FEET

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GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 1-2
SITE PLAN
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155
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CAD FILE REMEDIAL ACTION PLAN
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PATH/FILENAME: P:\60225155 - GHS\GREENWICH HIGH SCHOOL\ORIGINAL DRAWING FILES\PROJECT\UPDATED\SUPPLEMENTAL DRAWINGS\RAP JULY 2013\REMEDIAL ACTION PLAN.DWG
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PLOT DATE: Monday, August 12, 2013 11:59:49 AM
ARCH D - 3-7-05

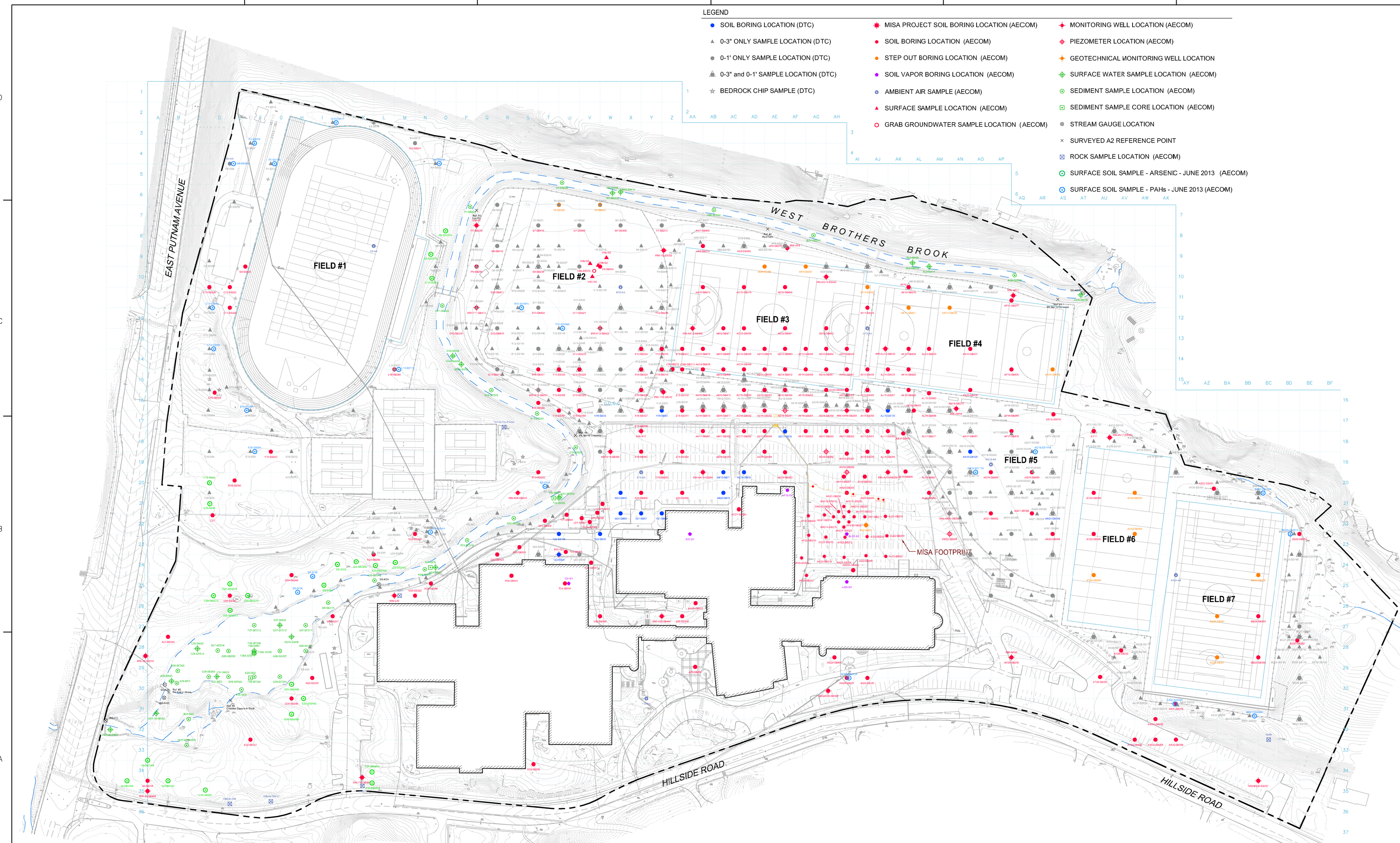

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FIGURE 2-1
SAMPLING LOCATIONS
REMEDIAL ACTION PLAN

SEPTEMBER 2013

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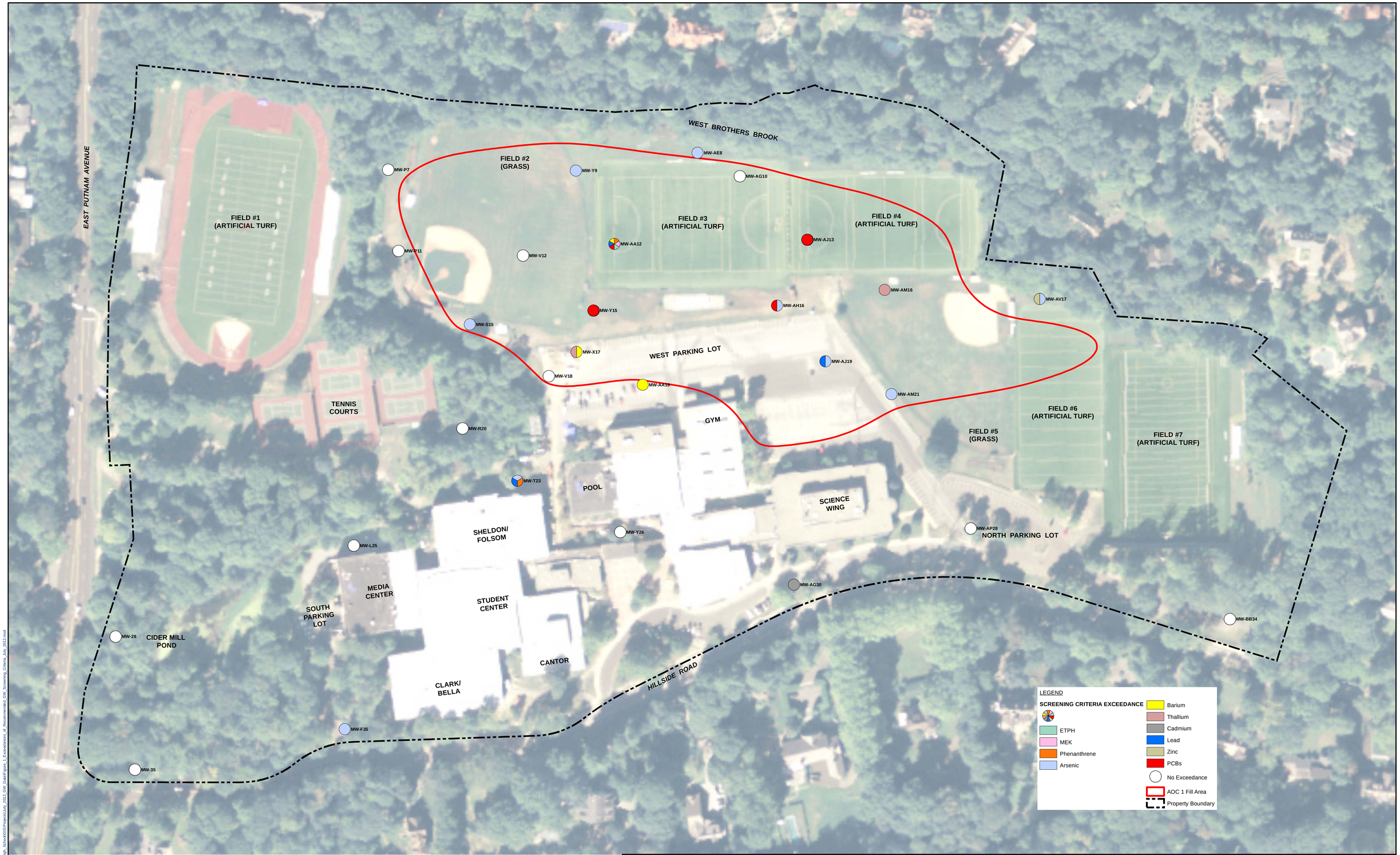

SOURCE:
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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-2
EXCEEDANCES OF RECOMMENDED GROUNDWATER
SCREENING CRITERIA - JULY 2012
REMEDIAL ACTION PLAN

JOB 60225155

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CAD FILE

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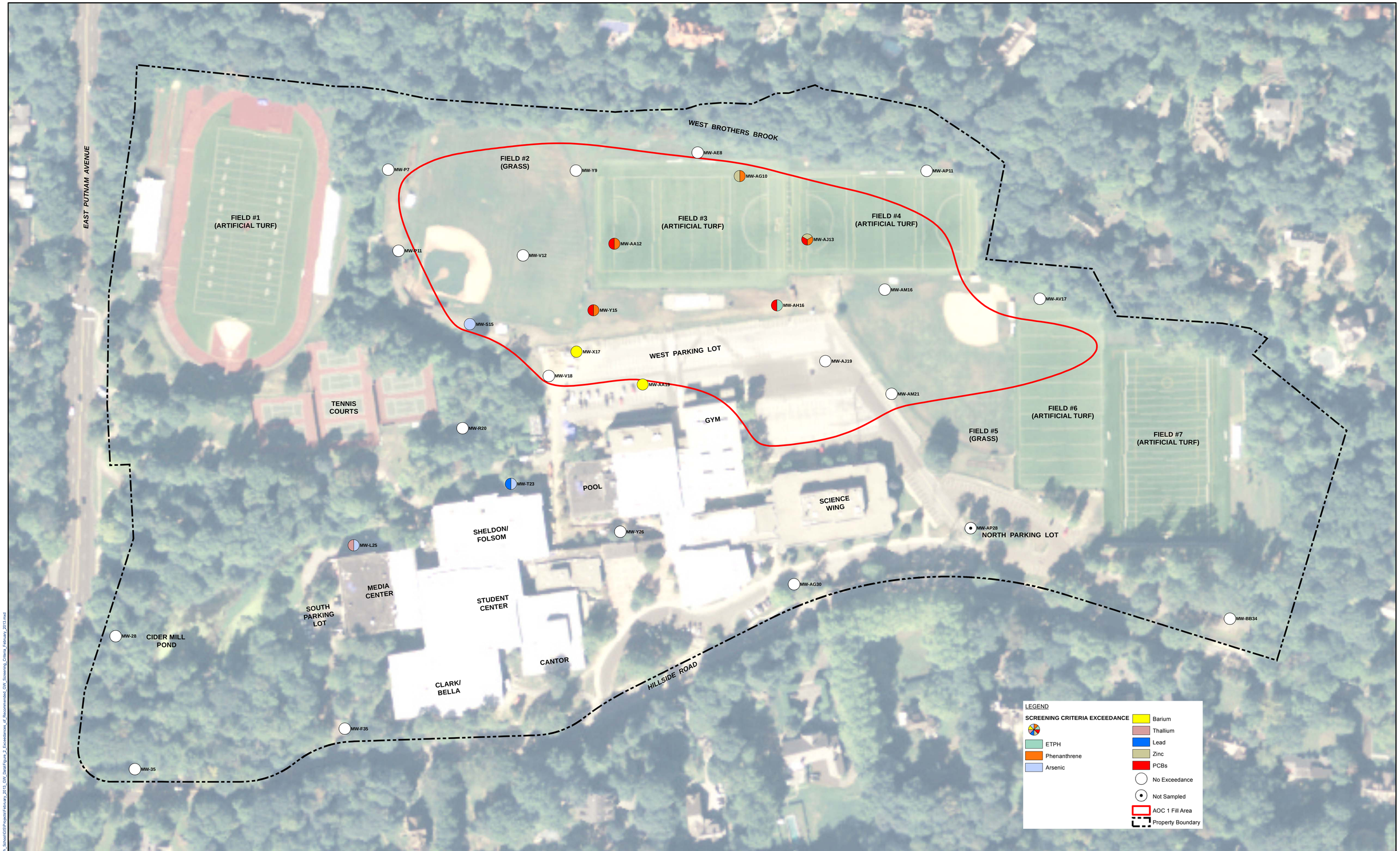

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0 40 80 160 240 Feet

SCALE

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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-3
EXCEEDANCES OF RECOMMENDED GROUNDWATER
SCREENING CRITERIA - FEBRUARY 2013
REMEDIAL ACTION PLAN

JOB 60225155

FILE NO.

CAD FILE

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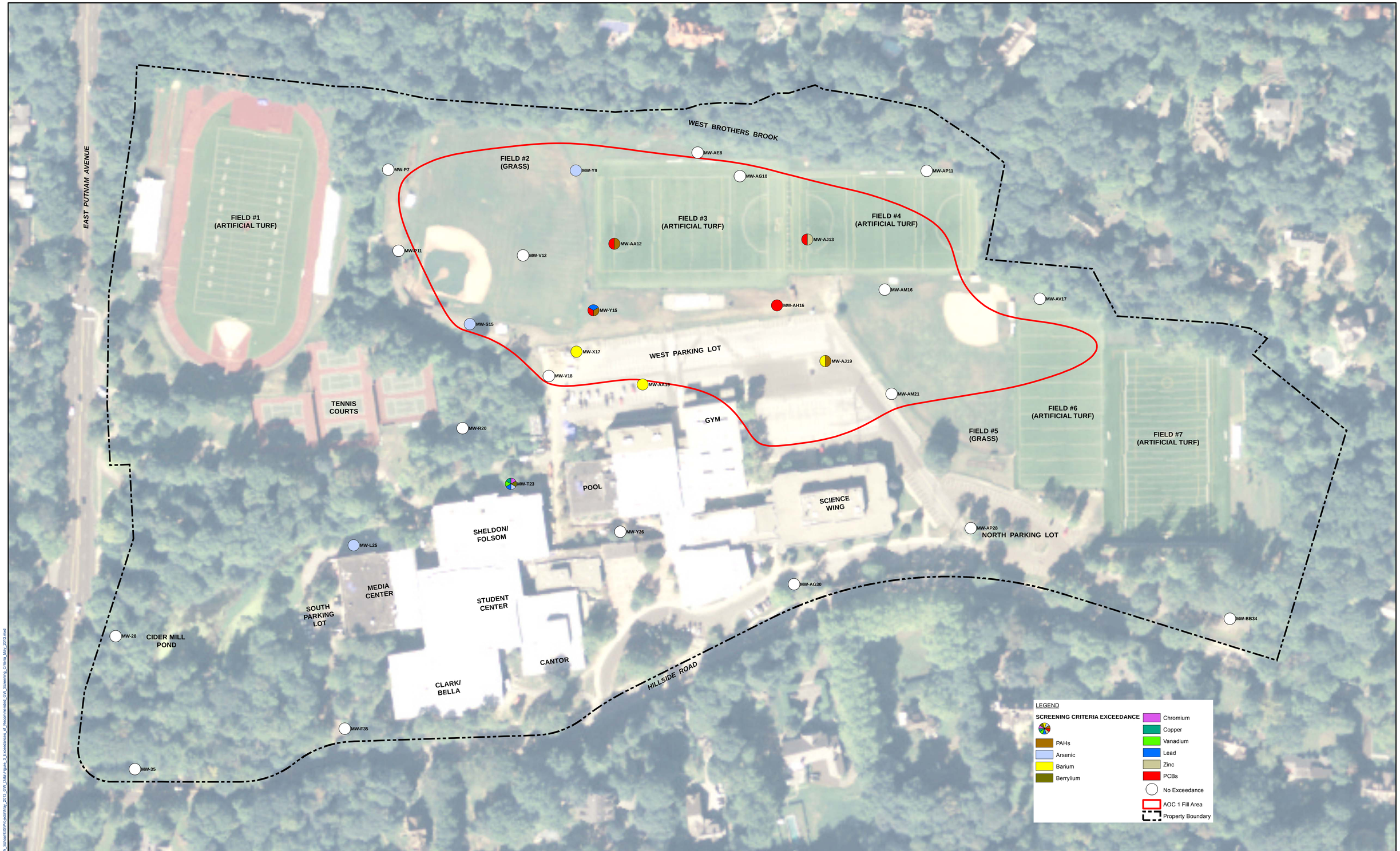

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SCALE:

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0 40 80 160 240 Feet

SCALE

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GREENWICH HIGH SCHOOL
10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-4
EXCEEDANCES OF RECOMMENDED GROUNDWATER SCREENING CRITERIA - MAY 2013
REMEDIAL ACTION PLAN

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FILE NO.

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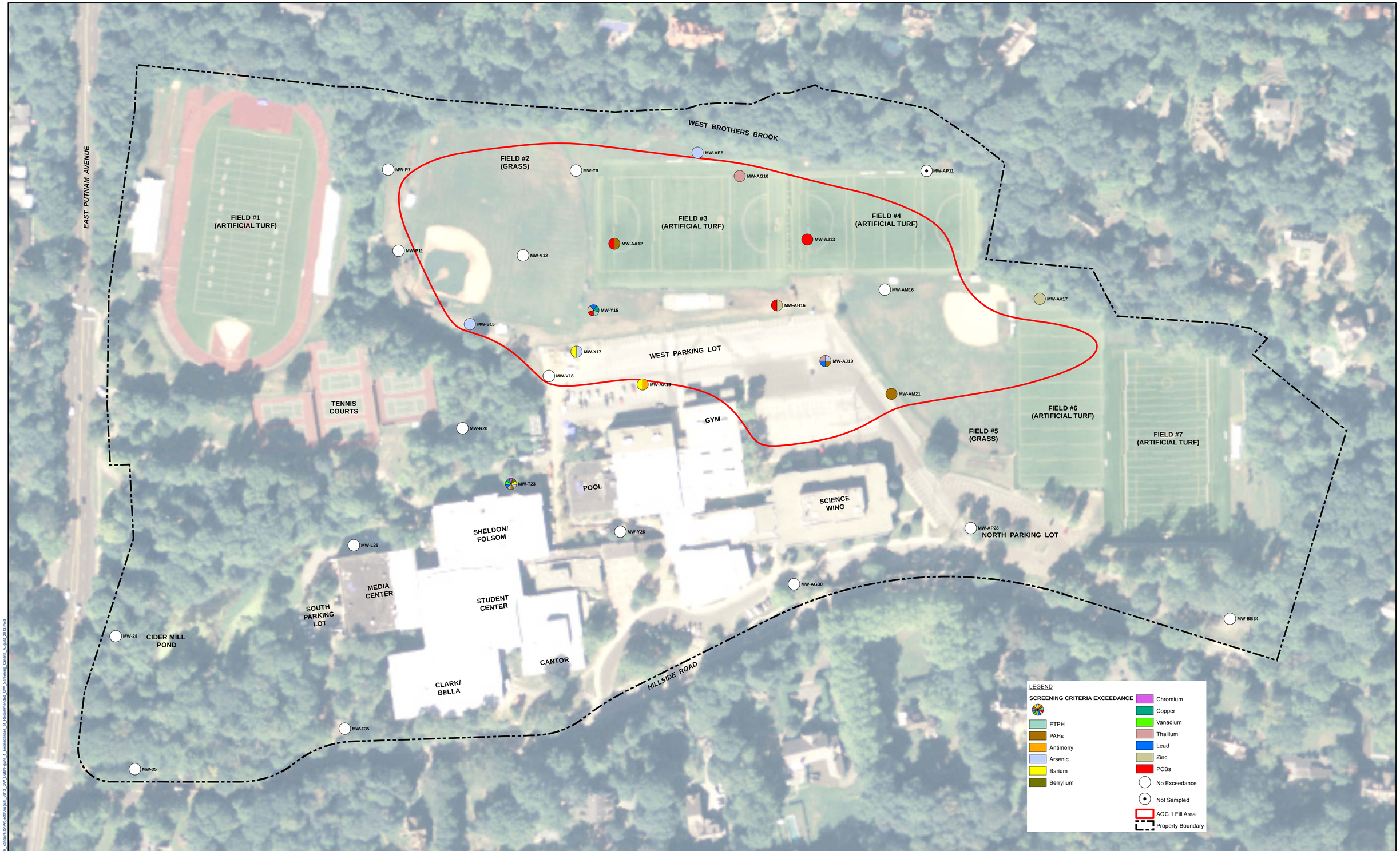
Path: J:\Hist_Services\Project Files\Greenwich_High_School\GRSP\Projects\May_2013_GW_Data\Figure_3_Exceedances_of_Recommended_GW_Screening_Criteria_May_2013.mxd



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0 40 80 160 240 Feet

SCALE

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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-5
EXCEEDANCES OF RECOMMENDED GROUNDWATER SCREENING CRITERIA - AUGUST 2013
REMEDIAL ACTION PLAN

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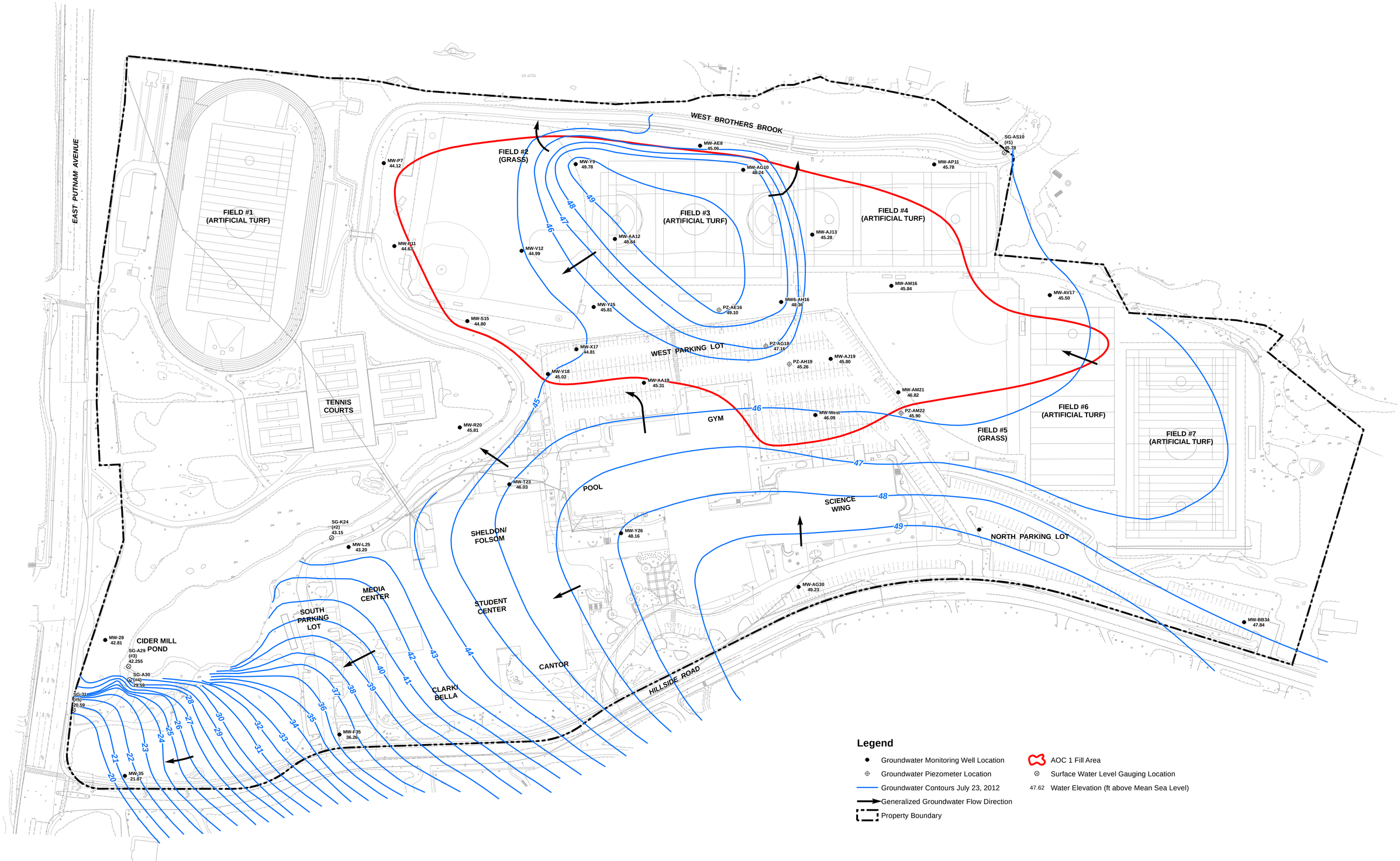

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SCALE

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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-6
GROUNDWATER ELEVATION CONTOURS - JULY 2012
REMEDIAL ACTION PLAN

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CAD FILE

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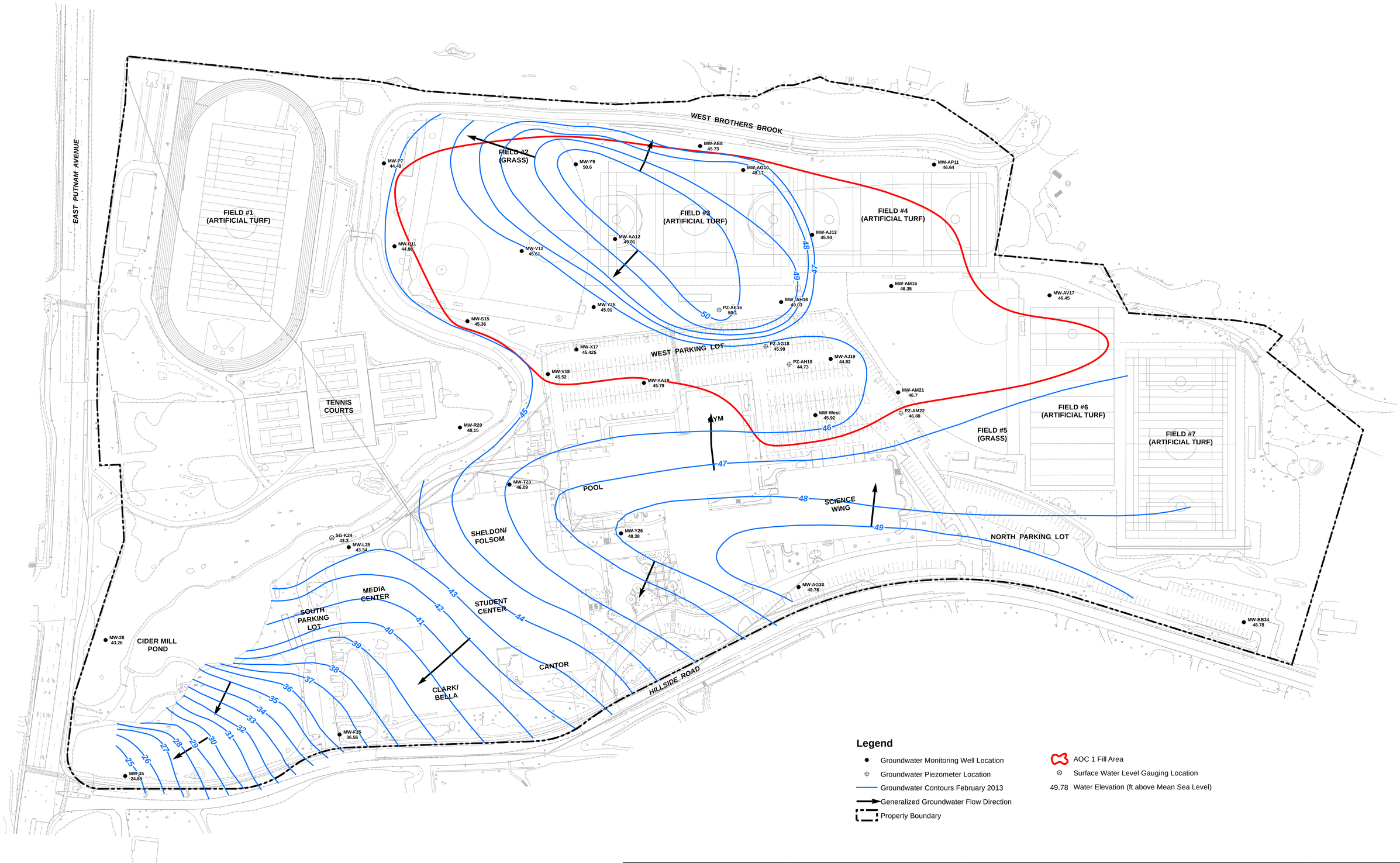

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SCALE:

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SCALE

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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-7
GROUNDWATER ELEVATION CONTOURS - FEBRUARY 2013
REMEDIAL ACTION PLAN

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CAD FILE
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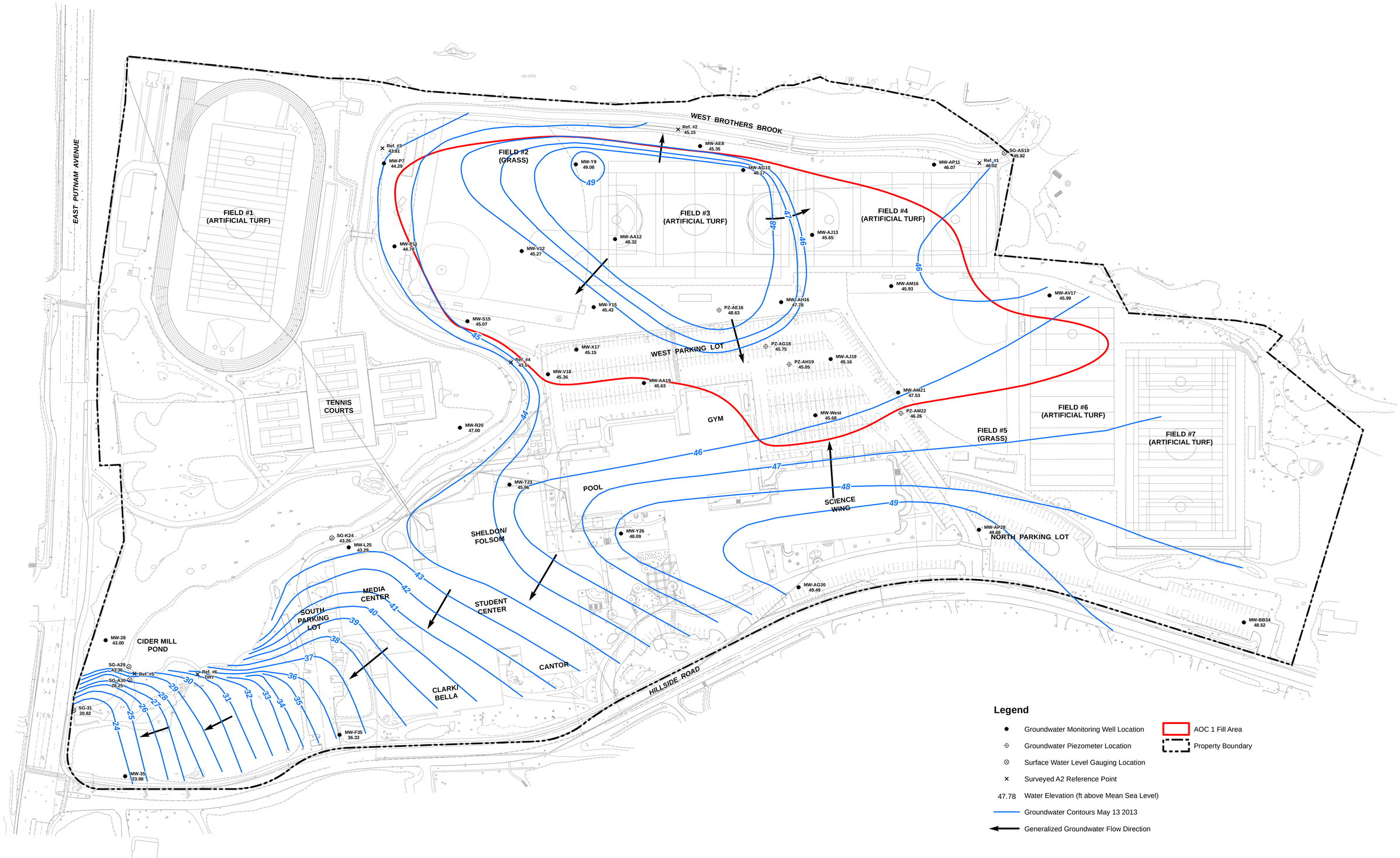
Path: J:\Hill_Service\Project Files\Greenwich_High_School\GIS\Projects\Groundwater_Elevation_Contours_February_2013\Figure_6_Groundwater_Elevation_Contours_February_2013.mxd



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SCALE:

1" = 80' 0 40 80 160 240 Feet
SCALE

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10 HILLSIDE ROAD
GREENWICH, CT

FIGURE 2-8
GROUNDWATER ELEVATION CONTOURS - MAY 2013
REMEDIAL ACTION PLAN

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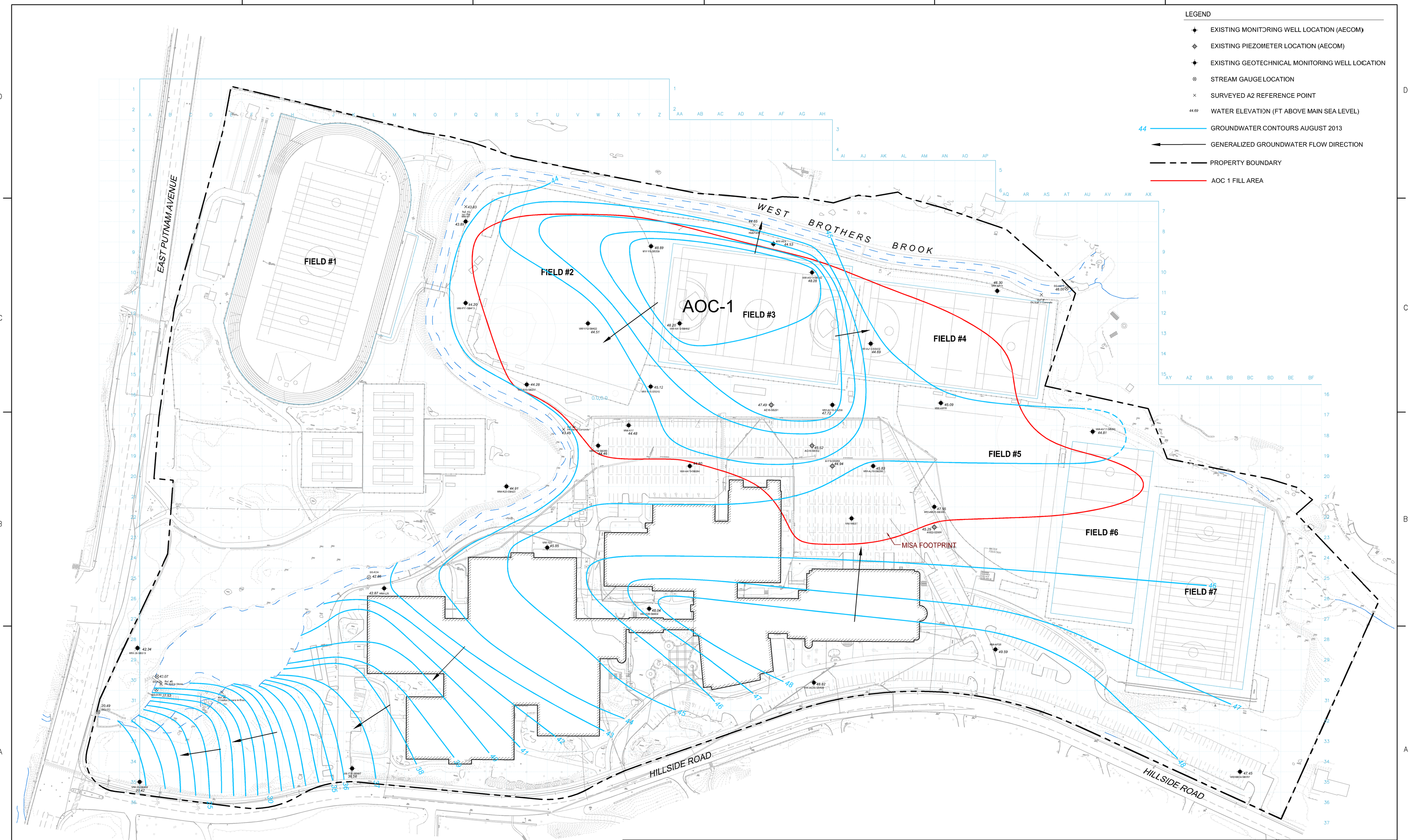

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0 80 160 240
SCALE FEET

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GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 2-9
GROUNDWATER ELEVATION CONTOURS - AUGUST 2013
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155
FILE NO.
CAD FILE SURVEYED GROUNDWATER NETWORK
SHEET

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LAST UPDATE: Tuesday, September 17, 2013 2:18:20 PM
PLOT DATE: Thursday, October 03, 2013 9:58:28 AM
ARCH D - 3-7-05

SAMPLING POINTS

- SOIL BORING LOCATION (DTC)
- 0-3" ONLY SAMPLE LOCATION (DTC)
- 0-1' ONLY SAMPLE LOCATION (DTC)
- 0-3" and 0-1' SAMPLE LOCATION (DTC)
- MISA PROJECT SOIL BORING LOCATION (AECOM)
- SOIL BORING LOCATION (AECOM)
- STEP OUT BORING LOCATION (AECOM)
- SURFACE SAMPLE LOCATION (AECOM)
- MONITORING WELL LOCATION (AECOM)
- PIEZOMETER LOCATION (AECOM)
- SURFACE SOIL SAMPLE - ARSENIC - JUNE 2013 (AECOM)
- SURFACE SOIL SAMPLE - PAHs - JUNE 2013 (AECOM)

LEGEND

- BENZO (a) PYRENE REMEDIATION AREA
- ARSENIC REMEDIATION AREA
- PESTICIDE REMEDIATION AREA
- PCB REMEDIATION AREA (0-3' BGS)
- PCB REMEDIATION AREA (0-2' BGS)
- PCB REMEDIATION AREA (0-1' BGS)
- MISA FOOTPRINT
- A — APPROXIMATE LOCATION OF CROSS SECTION

EAST PUTNAM AVENUE

WEST BROTHERS BROOK

FIELD #1

FIELD #2

FIELD #3

FIELD #4

FIELD #5

FIELD #6

FIELD #7

0-2 FT BGS

0-1 FT BGS

0-3 FT BGS

MISA FOOTPRINT

HILLSIDE ROAD

HILLSIDE ROAD

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0 80 160 240

SCALE FEET

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10 HILLSIDE RD
GREENWICH, CT

FIGURE 3-1
PROPOSED REMEDIATION AREAS
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155

FILE NO.

CAD FILE PROPOSED REMDIATION AREAS

SHEET

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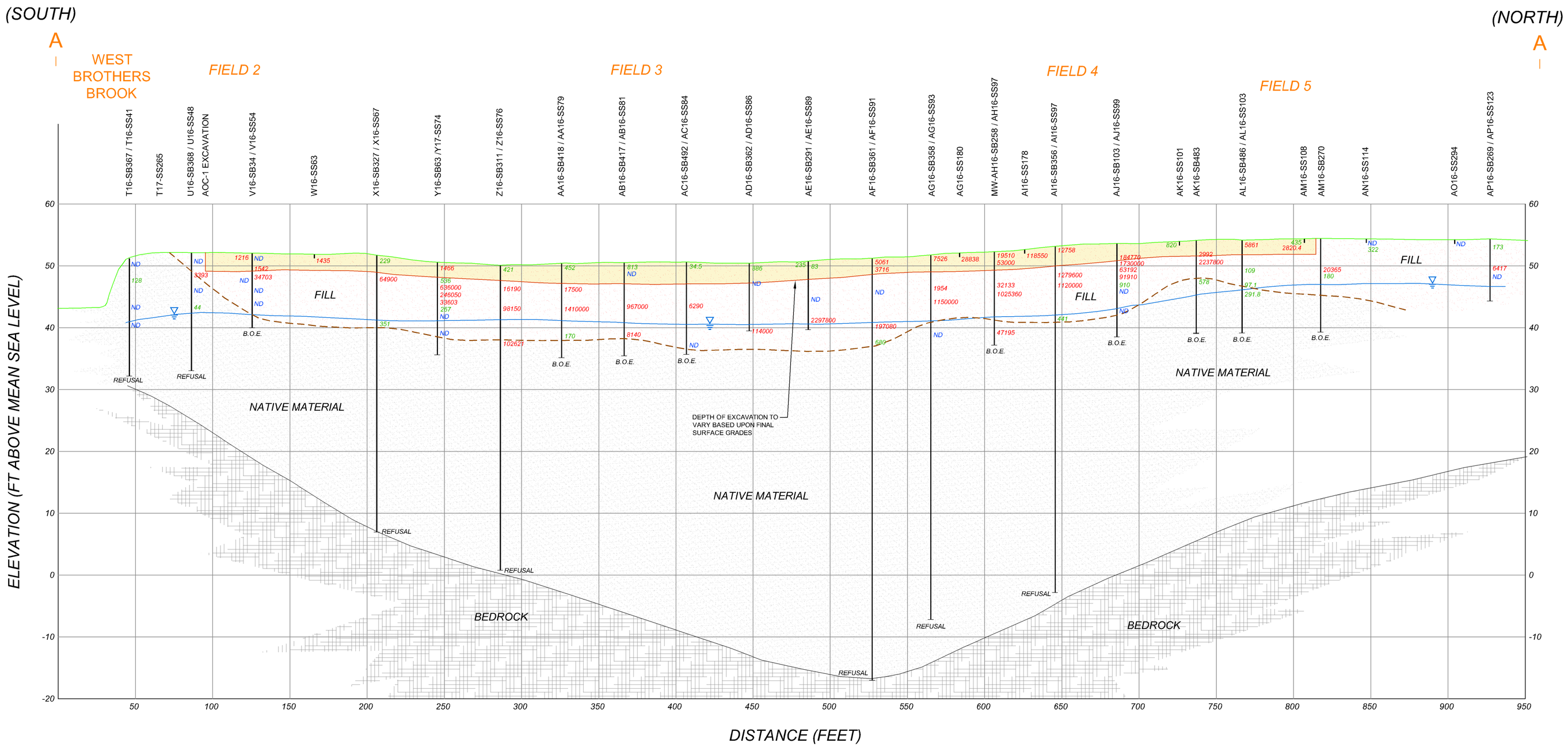

LEGEND:

B.O.E.	BOTTOM OF EXPLORATION
▽	WATER TABLE INDICATOR
ND	PCBs NOT DETECTED
44	PCB CONCENTRATION (µg/kg) <1,000
3393	PCB CONCENTRATION (µg/kg) >1,000
	EXCAVATION AREA
	APPROXIMATE FILL BOUNDARY

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1" = 40' HORIZONTAL SCALE (0, 40, 80, 120 FEET)

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GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 3-2
CROSS SECTION A-A'
REMEDIAL ACTION PLAN

SEPTEMBER 2013

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FILE NO.

CAD FILE CROSS SECTIONS

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PATH/FILENAME: P:\60225155 - GHS\GREENWICH HIGH SCHOOL\ORIGINAL DRAWING FILES\PROJECT\UPDATED\SUPPLEMENTAL DRAWINGS\RAP JULY 2013\CROSS SECTIONS.DWG
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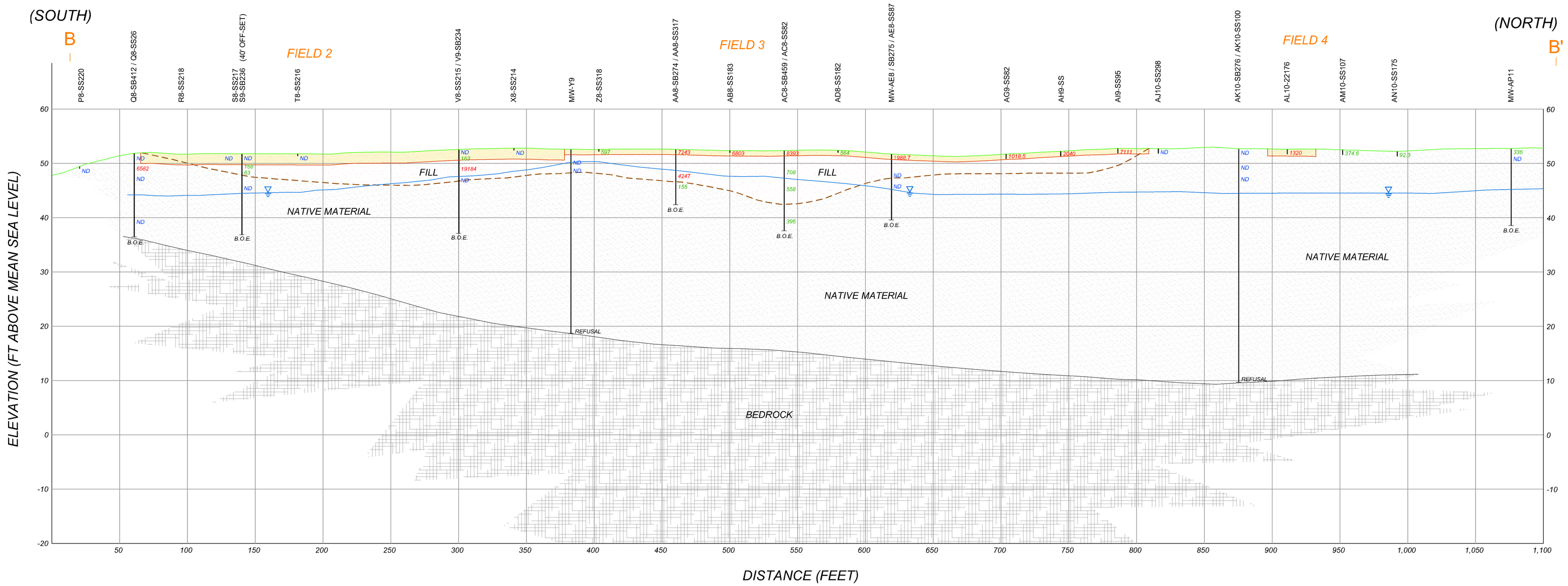

LEGEND:

B.O.E.	BOTTOM OF EXPLORATION
▽	WATER TABLE INDICATOR
ND	PCBs NOT DETECTED
44	PCB CONCENTRATION (µg/kg) <1,000
3393	PCB CONCENTRATION (µg/kg) >1,000
	EXCAVATION AREA
	APPROXIMATE FILL BOUNDARY

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GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 3-3
CROSS SECTION B-B'
REMEDIAL ACTION PLAN

SEPTEMBER 2013

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FILE NO.
CAD FILE CROSS SECTIONS
SHEET

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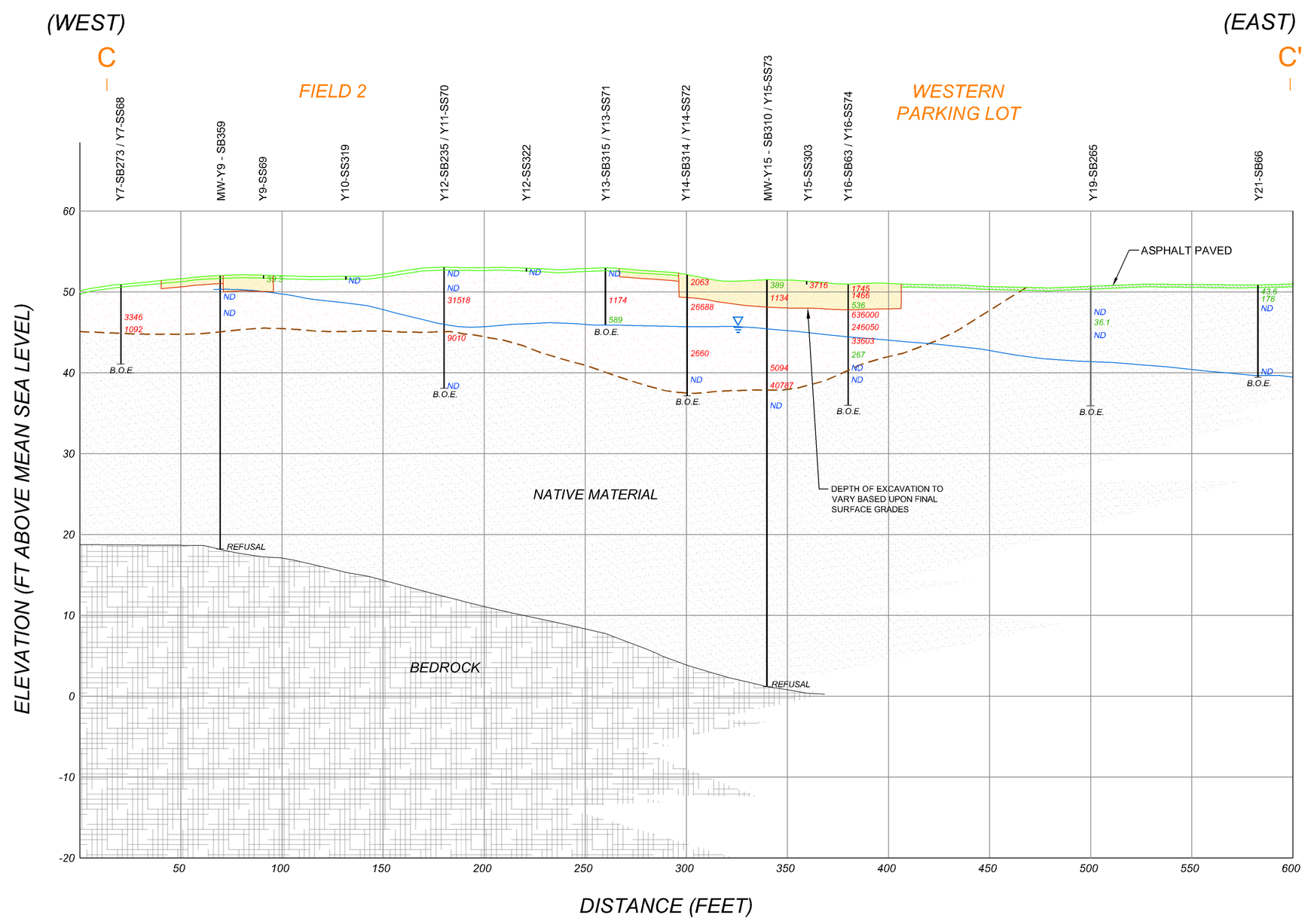
ARCH D - 3-7-05



LEGEND:

B.O.E.	BOTTOM OF EXPLORATION
▽	WATER TABLE INDICATOR
ND	PCBs NOT DETECTED
44	PCB CONCENTRATION (µg/kg) <1,000
3393	PCB CONCENTRATION (µg/kg) >1,000
	EXCAVATION AREA
	APPROXIMATE FILL BOUNDARY

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SCALE:
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1" = 40' HORIZONTAL SCALE 0 40 80 120 FEET

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GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 3-4
CROSS SECTION C-C'
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155
FILE NO.
CAD FILE CROSS SECTIONS
SHEET

PATH/FILENAME: P:\60225155 – GHS\GREENWICH HIGH SCHOOL\ORIGINAL DRAWING FILES\PROJECT\UPDATED\SUPPLEMENTAL DRAWINGS\RAP JULY 2013\CROSS SECTIONS.DWG
LAST UPDATE: Monday, August 12, 2013 5:09:34 PM
PLOT DATE: Monday, October 21, 2013 2:27:06 PM

LEGEND

- BUILDING PERIMETER
- PROPERTY LINE
- WETLANDS DELINEATION
- 100 FT BUFFER ZONE
- CONTOUR LINE
- CHAIN LINK FENCE
- ELECTRICAL UTILITY LINE
- GAS UTILITY LINE
- WATER UTILITY LINE
- DRINKING WATER FOUNTAIN
- MISA FOOTPRINT / ADDITION

EAST PUTNAM AVENUE

WEST BROTHERS BROOK

FIELD #1

FIELD #2

FIELD #3

FIELD #4

FIELD #5

FIELD #6

FIELD #7

RECONSTRUCT ACCESS TO FIELD 3 AND BLEACHERS

PROPOSED LOCATION OF ADA COMPLIANT ACCESS RAMP TO FIELD 3

PROPOSED LOCATION OF ADA COMPLIANT ACCESS RAMP TO FIELDS 4 AND 5

RECONSTRUCT ACCESS TO FIELD 2 AND BLEACHERS

LIMIT OF PROPOSED ASPHALT SURFACE

PROPOSED AUDITORIUM ADDITION

PROPOSED ADDITION

HILLSIDE ROAD

AECOM Environment
500 ENTERPRISE DR. STE 1A
ROCKY HILL, CT 06067
(860) 263-5800
www.aecom.com

AECOM

SCALE:

1" = 80'

0 80 160 240

SCALE FEET

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 3-5
POST-REMEDIATION SITE RESTORATION
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155

FILE NO.

CAD FILE POST REMEDIATION SITE REST

SHEET

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LAST UPDATE: Monday, August 05, 2013 2:34:46 PM
PLOT DATE: Monday, August 12, 2013 4:48:42 PM

ARCH D - 3-7-05

LEGEND

- DUMP TRAILER TRAFFIC FLOW PATTERN
- TRIAXLE TRAFFIC FLOW PATTERN
- BENZO (a) PYRENE REMEDIATION AREA
- ARSENIC REMEDIATION AREA
- PESTICIDE REMEDIATION AREA
- PCB REMEDIATION AREA (0-3' BGS)
- PCB REMEDIATION AREA (0-2' BGS)
- PCB REMEDIATION AREA (0-1' BGS)
- MISA FOOTPRINT
- POTENTIAL CONSTRUCTION ENTRANCE FOR TRANSPORT OF IMPACTED SOILS FROM SOUTHERN AREAS
- PROPOSED PERIMETER AIR MONITORING LOCATION

NOTE:

CONSTRUCTION ROUTING AND MATERIAL STAGING AREAS SUBJECT TO CHANGE BASED ON CONTRACTOR RECOMMENDATIONS

EAST PUTNAM AVENUE

WEST BROTHERS BROOK

FIELD #1

FIELD #3

FIELD #4

FIELD #5

FIELD #6

FIELD #7

DECONTAMINATION AREA

ROLLOFF AND DRUM STORAGE

CLEAN BACKFILL STOCKPILE

MISA FOOTPRINT

DUMP TRAILERS TO EXCAVATION AREA

TRIAXLES TO CLEAN BACKFILL STOCKPILE

DUMP TRAILER OVERFLOW

HILLSIDE ROAD

HILLSIDE ROAD

TO I-95 VIA EXIT 5

AECOM Environment
500 ENTERPRISE DR, STE 1A
ROCKY HILL, CT 06067
(860) 263-5800
www.aecom.com

AECOM

SCALE:

1" = 80'

0 80 160 240

SCALE FEET

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

GREENWICH HIGH SCHOOL
10 HILLSIDE RD
GREENWICH, CT

FIGURE 4-1
REMEDIATION PLANNING
REMEDIAL ACTION PLAN

SEPTEMBER 2013

JOB 60225155

FILE NO.

CAD FILE TRUCK ROUTING RAP

SHEET

ARCH D - 3-7-05

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LAST UPDATE: Monday, August 12, 2013 5:09:02 PM

PLOT DATE: Tuesday, August 13, 2013 12:39:02 PM

Figures

Appendix A

Remedial Investigation Report

(Provided Electronically)

Appendix B

Laboratory Analytical Reports June 2013 Remedial Design Investigation

(Provided Electronically)

Appendix C

Groundwater Laboratory Analytical Reports

(Provided Electronically)

Appendix D

Soil Boring Logs for Cross-Sections

(Provided Electronically)

Appendix E

Selected Figures from the Remedial Investigation Report

Appendix F

Written Certification in Accordance with §761.61(a)(3)(E)