PHASE I - III
ENVIRONMENTAL SITE ASSESSMENT
GENERAL ELECTRIC COMPANY
SCHOOL PARCEL
BRIDGEPORT, CONNECTICUT

Prepared For:

General Electric Company

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1.0 INTRODUCTION

General Electric Company ("GE") has retained Leggette, Brashears & Graham, Inc. ("LBG") to conduct a Phase I, II, and III Environmental Site Assessment (ESA) of a 17.9-acre vacant parcel located on the west side of Bond Street and to the southwest of Stewart Street in Bridgeport, Connecticut (herein referred to as the "Site") (Figure 1). The Site is part of a larger 76.5 acre parcel owned by GE and identified as 1285 Boston Avenue in Bridgeport, Connecticut ("Boston Avenue Property" or "Property").

As part of parcel redevelopment, GE plans to subdivide the Site from the larger Property and convey the Site to the City of Bridgeport for use as a high school. This Phase I - III ESA has been prepared to provide information on the environmental conditions on the parcel to the City in support of that reuse and as a regulatory report: documenting current Site conditions and former uses; describing the scope and results of environmental investigations that have been conducted at the Site; setting forth those activities that have been completed to advance Site remediation under Connecticut's Corrective Action program and the Remediation Standard Regulations.

The approach set forth in this report for assessing and remediating the Site has been driven largely by the status of the entire Boston Avenue Property as an regulated interim status treatment storage and disposal facility (TSDF) and as a "land disposal facility," (LDF) subject to the regulations governing "Corrective Action at Interim Status Disposal Facilities," Regulations of Connecticut State Agencies (RCSA) §22a-449(c)-105(h) et seq. The Property attained its LDF status due to the presence of - a former sludge drying bed located on the western portion of the Property, but off the Site, and closed in 1991. Applicable regulations require that the owner of a covered land disposal facility investigate and remediate all releases of hazardous waste and hazardous substances at or from the facility as a whole, rather than just from the individual TSD unit, in accordance with RCSA §22a-449(d)-105(h)(2). The Site itself also previously contained

hazardous waste storage units, for which closure was required and has been attained pursuant to the Resource Conversation and Recovery Act, 42 USC §6900 et seq., and its implementing regulations, RCSA §22a-449(c)-10, incorporating by reference 40 CFR Part 265.

2.0 SITE DESCRIPTION

2.1 Physical Description

The approximate 17.9-acre Site is rectangular in shape with approximate dimensions of 1,330 feet (north-south) by 590 feet (east-west) (Figure 2). The Site is bordered to the east by Bond Street and to the north, west and south by the remainder of the Boston Avenue Property. Steel chain-link fence is located along the eastern Site boundary. Access to the Site can be obtained from the Boston Avenue Property to the south, west and north and from a gated entrance along Bond Street to the east. The only structure located on the north-central portion of the Site is an approximate 160-square foot pre-fabricated, free-standing, steel, epoxy-coated waste storage unit.

The Site is developed with asphalt or concrete surface, and the overall topography slopes from the east to west. Grade elevation of the Site ranges from approximately 41 ft asml (feet above mean sea level) along the northeastern portion to approximately 24 ft asml at the northwestern portion. A series of catch basins are located on the Site running north to south, approximately 100 feet west of the Site eastern boundary. Stormwater runoff from the east drains to these catch basins and exits the Site via underground piping to the south. Stormwater runoff on the remainder of the Site either drains to a single catch basin located on the northern portion of the Site, and exits the Site via underground piping to the west, or leaves the Site following the surface topography.

2.2 Site Utilities

Overhead electrical lines enter the Site from the south and exits to the north. Four of the ten utility poles located along the western portion of the Site contain ten non-polychlorinated biphenyl (PCB) transformers. An additional nine utility poles are located on the eastern edge of Site. Sanitary sewer service is available to the Site, but not currently active. Water is available to the site through a metered connection located on the eastern side of the Site.

2.3 Geology and Hydrogeology

The Site geology consists of native and non-native unconsolidated materials overlying crystalline bedrock. Three geological cross-sections (Figures 3 through 6) were prepared based upon data

from borings drilled during Site investigations to depict the thickness and spatial distribution of the unconsolidated materials and the depth to bedrock. Geologic logs for test borings and existing and former monitoring wells are presented in Appendix I. The location of each geologic cross-section transect is shown on the individual figures. The following details the geological materials and hydrogeologic conditions encountered at the Site.

2.3.1 Unconsolidated Materials

The unconsolidated materials identified during the Site investigations included 'urban fill', stratified drift and till. Figure 7 shows the approximate lateral extent of these materials.

Urban Fill

Surficial soils are mapped as Urban Land (ref. 1). Urban fill constitutes the majority of the shallow unconsolidated materials located across the Site. This urban fill typically consists of a reworked sand, gravel and/or silt matrix containing varying quantities of brick and concrete. This fill generally ranges from 1 to 6 feet in thickness. Thicker layers of urban fill were identified on the western portion of the Site (Figures 3 and 6). Based on excavations completed near the western edge of the Site, this area has been raised by as much as 4 feet above the 1915 initial developed grade.

Stratified Drift and Till

Unconsolidated material at the Site is mapped as stratified drift (ref. 2). Stratified drift is composed of interbeds of well-sorted material including gravel, sand, silt and clay. Stratified drift on the western and central portions of the Site is a prolific water bearing unit, whereas the thinner stratified drift on the eastern portion of the Site is lower yielding. Till is composed of a densely-packed, poorly-sorted mixture of cobbles, gravel, sand, silt and clay. The till at the Site is a poor water-bearing unit because of its density and poorly sorted grain size distribution.

Stratified drift and/or till were identified on the Site beneath the urban fill. As shown on Figure 7, till is located on the eastern and northern portions of the Site, and transitions to the stratified drift on the western portion of the Site. The deepest and thickest layers of stratified

drift were identified on the western portion of the Site. The stratified drift thickness in the latter area ranges up to approximately 44 feet.

Till was typically observed immediately above bedrock, and is assumed to be present at most locations between the bedrock surface and the overlying stratified drift or fill. The thickest deposit of till below the Site, approximately 15 feet, was encountered along the western portion of the Site (Figure 3).

2.3.2 Bedrock

The Site is located near the contact of two different bedrock formations. Bedrock beneath the majority of the Site is mapped as Cooks Pond Schist formation (fine-grained, rusty-weathered schist) and bedrock beneath the northern edge of the Site is mapped as Southington Mountain Formation (thinly interlayered, medium to coarse-grained schist and finer-grained gneiss) (ref. 3). Schist is a metamorphic rock that primarily contains biotite, quartz and muscovite, but may also contain several secondary minerals such as garnet or plagioclase. The bedrock beneath the Site is mapped as dipping to the northwest (ref. 3).

The depth-to-bedrock and bedrock surface elevation from test borings and monitoring wells are summarized on Table 1. Bedrock below the Site was observed to range from 10 ft bg (feet below grade) to 50 ft bg. As shown on Figure 8, the bedrock surface slopes generally from the east to west, with a “bowl” feature (area of lower bedrock elevation) in the north-central portion of the Site (near former monitoring well L-50).

2.3.3 Groundwater

A total of 67 monitoring wells (65 in the overburden and 2 in the bedrock) were present at the Site as of August 2010. To support building deconstruction activities, all but two overburden wells and one bedrock well were abandoned between September 2010 and July 2011 following the requirements of R.S.C.A. §25-128-57. The locations of the existing and former monitoring wells are shown on Plate 1, while construction details are summarized on Table 2. The following information was developed from analyses of the data collected from the monitoring

well network on the Site. Groundwater is encountered in all of the geologic units described above, including unconsolidated materials (stratified drift, till, and weathered rock) and bedrock.

Groundwater Seasonal Fluctuation, Elevation and Horizontal Flow Direction

For wells completed in the unconsolidated materials across the Site, the depth to groundwater measured during the period from 1989 to 2010 ranges between approximately 2 ft bg to 15 ft bg (Table 3). Table 4 shows the calculated groundwater elevations for this period, while Figure 9 shows the interpreted potentiometric surface contours for groundwater within the unconsolidated materials underlying the Site on April 15 - 16, 2008. Groundwater in these materials is generally expected to flow perpendicular to these contours towards decreasing groundwater surface elevations. The contours indicate that the expected direction of groundwater flow below the Site is from east to west-southwest. Local heterogeneities in the unconsolidated material could alter these predicted flow directions. The seasonal depth-to-water fluctuation for the above-referenced period ranged from less than 1 foot for wells completed in the stratified drift to as much as 3 feet for wells completed in the till. The groundwater flow gradient in the unconsolidated materials generally ranges from approximately 0.16 ft/ft in the till to 0.008 ft/ft in the stratified drift.

For bedrock below the Site, Figure 10 depicts the interpreted elevations of the potentiometric surface (April 16, 2008). The potentiometric surface was created using groundwater data from bedrock wells on the abutting property; however, because there are fewer data points available for the bedrock, the resulting potentiometric surface is more generalized than in the unconsolidated materials. The contours indicate that the expected general direction of groundwater flow in bedrock below the Site is from northeast to southwest. Depth-to-groundwater in the bedrock wells ranged from approximately 3.4 ft bg to 15.8 ft bg (Table 3), with seasonal fluctuations at less than 1 foot.

Vertical Flow Direction

Monitoring wells screened at different depths in the same location can be used to measure upward or downward hydraulic gradients, which show whether the potential exists for upward or downward groundwater flow. While vertical hydraulic gradients indicate a preference for

direction in groundwater flow, the actual steepness of the angle at which groundwater flow occurs is governed by the relationship of horizontal and vertical hydraulic conductivity, and the heterogeneity of the aquifer(s). It is even more difficult to evaluate vertical groundwater flow in bedrock, as flow in this matrix is dominated by fracture occurrence and interconnection.

There are no nested monitoring wells completed in the stratified drift and till below the Site. Nested monitoring wells located in the stratified drift deposits and bedrock (L-51R and L-52) located on the western portion of the Site have shown slight upward hydraulic gradients (Table 4) ranging from approximately 0.001 ft/ft to 0.07 ft/ft.

Aquifer Characterization

The hydraulic conductivity of the unconsolidated materials is primarily a function of grain size, grain-size distribution and compaction. Water flows through the pores of the unconsolidated materials and in the direction of decreasing hydraulic head, generally following surface topography. The bedrock transmits water primarily through fractures. Depth-to-water, flow direction and hydraulic conductivity vary with fracture aperture, degree of interconnection, and orientation, all of which can be highly heterogeneous for bedrock formations.

At the Site, the hydraulic conductivity of stratified drift is approximately 210 ft/day (feet per day), based on data gathered during a seven-hour pumping test completed on the northwestern portion of the Site on July 21, 2010. Details of the pumping test are described included in Appendix II.

In addition to the pumping test, two slug tests were completed in monitoring wells (CY27-MW-1 and L-04) located in the till on the southern side of the Site. The calculated hydraulic conductivities were approximately 5.8 and 5.9 ft/day. Details of the tests are provided in Appendix II.

2.3.4 Nearby Surface Water

Stillman Pond, an approximately 5-acre pond, and unnamed streams identified by GE as Brook A and Brook B are located between 100 and 200 feet west of the Site on the Boston Avenue Property. Piezometers were installed within the onsite watercourses to evaluate the relationship between the shallow groundwater and the surface water. Water-level data indicate consistently upward gradients at most nearby locations (slightly upward to neutral at one location), indicating the potential for groundwater to flow into the surface-water bodies at most nearby locations.

2.4 Surrounding Land Use

The Site is located within an industrial, commercial and residential area. The Site is bounded to the north by the Boston Avenue Property, and beyond by land owned by Sporting Goods Property, Inc., formerly known as the Remington Arms Co., Inc. and Bridgeport Manor; to the west by the Boston Avenue Property, and beyond by the Lakeview Cemetery; to the south by the Boston Avenue Property, and beyond across Route 1, by Boston Commons, owned by the Bridgeport Housing Authority; and to the east across Bond Street by residential parcels.

3.0 SITE HISTORY

The Site has been used for a wide variety of industrial operations for many years. The following summary of former Site uses was developed through a review of GE company files, local government records, historical-society files, fire-insurance maps, aerial photographs, historic site photographs, quadrangle maps, tax maps, historic regional maps, reports, land records, documents, and facility drawings maintained by GE as well as interviews with past GE-facility personnel. Detailed discussions pertaining to fire insurance maps, aerial photographs, historic quadrangle maps, various regional maps, site photographs, and land records review are presented in Appendices III through VIII, respectively. Details regarding former Site infrastructure, pre-GE Site operations, and the GE Operations are presented in Appendices IX through XI, respectively.

3.1 Former Site Buildings

Figure 11 shows the maximum build out and building numbers for structures formerly located on the Site, all of which have been removed. These building numbers aid in locating past Site activities and features. Because the Site will be divided from the larger Boston Avenue Property, the numbering system reflects that buildings were located not just on the Site but also on the larger Boston Avenue Property. In addition, for the multi-story structures, each floor is identified sequentially by letters A through E, with the lowest, on-grade level of the main building identified as the "A" floor and the top level identified as the "E" floor. Each of the wings is denoted by the letter "E" for East wings and "W" for West wings. Hallways between buildings are denoted with an "S". External single-story covered courtyards, which were constructed after the initial main building construction, are denoted on the eastern side with an "R" and on the western side with an "L". Therefore, the second floor of the eastern wing of Building 30 would be identified as "30BE", while the west courtyard of Building 29 would be identified as 29L.

Table 5 provides a summary of construction and removal dates for the buildings, original flooring and former operations known for each of the buildings. Buildings 26 through 33 and 35 were initially constructed in 1915. These buildings were part of a larger "main building" that extended approximately 750 additional feet south of the Site. The original construction of the

roughly 1.4-million square foot building included an interconnected series of 13, five-story brick buildings and a 14th, single-story brick building. Building 26 through 33 were five-story buildings, while building 35 was single-story. With the exception of Building 35, the original flooring on level "A" of the main building consisted of 1 1/8-inch thick maple on 1 inch of tar and sand on 3 inches of yellow pine, underlain by 4 inches of "tar rok" concrete (similar to asphalt). Flooring in Building 35 and in additions to the main building consisted of concrete slab.

Low Buildings 44 and 54, located on the western side of the, Site were constructed in 1915 and 1939, respectively. Flooring in these buildings consisted of concrete.

The former 30,400 square foot Power House (also known as building 63) straddled the southwest boundary of the Site and the remainder of the Boston Avenue property. This former two-story brick building was constructed on 9-inch thick concrete slab.

3.2 Former Site Infrastructure

The past drainage at the Site includes storm, floor, roof and process drains. This drainage system evolved during Site development and deconstruction (i.e., process changes, drainage system reconfiguration, floor drains converted to storm drains after deconstruction, etc.). During operations, process cooling water was supplied to the Site from four onsite and three offsite production wells. All onsite production wells were decommissioned/closed in 1993 following the requirements in RCSA §§25-128-56 and 25-128-57. Potable water was supplied by the Aquarion Water Company. The Site was connected to municipal sewers, which drained to the south on the east side of the Site to the City of Bridgeport's sanitary sewer system located on Boston Avenue.

An underground utility tunnel, constructed of brick walls and a concrete floor, formerly connected the north end of the Power House to the western portion of the main building at Building 27AS, and then extended north and south along the central portion of the main building. Pipes formerly in the tunnel were used to transport steam, hot water, water, electricity and air. As part of deconstruction activities, piping was removed from the tunnel, and the tunnel was

backfilled with clean fill. Turbines formerly located in the portion of the Power House that was located off the Site (see Section 3.1 above) generated electricity and transmitted the electricity to the Site via the tunnel, until the turbines were taken offline and removed in 1982. After the turbines were taken offline, the Site received electrical power from the United Illuminating Company via overhead transmission lines located west of the Site.

Eighteen transformers that contained polychlorinated biphenyl (PCB) dielectric fluids were formerly present at the Site. Capacitors containing PCB oils were also located near most of the transformers. Figure 12 shows all transformers located on the lower level of the former Site buildings. The PCB-containing transformers and capacitors were removed by 1987, with some being replaced with PCB-free equipment.

The Site formerly contained 22 underground storage tanks (USTs) and 2 aboveground storage tanks (ASTs). All ASTs were removed, and the USTs were either removed or properly closed in place.

Details regarding former Site infrastructure are provided in Appendix IX. In addition, the appendix includes details regarding operation, investigations and closure activities associated with Site PCB-containing equipment, and USTs, and ASTs. Information pertaining to any subsequent Phase II/III investigations is discussed in Section 6.0.

3.3 Pre-GE Operations

Remington Arms Union Metallic Cartridge Company (Remington Arms) constructed many of the buildings on the Site between 1914 and 1915 (ref. 4) to manufacture military rifles. Details regarding Pre-GE Site operations are presented in Appendix X. Neither the Site nor the Property was used at any time to manufacture munitions.

3.4 General Electric Company Operations

3.4.1 Property Acquisition

In 1920, GE leased a 40.17-acre portion of the Property, including the Site, from the Bridgeport Liquidation Company. GE purchased the approximate 40.17-acre property on August 27, 1923. GE acquired additional parcels from May 1920 to January 1931, consolidating them to form what is now the Boston Avenue Property; a small (less than one acre) parcel in the northwest corner in was acquired in November 1953.

3.4.2 Property Uses

Beginning in 1920, GE began to manufacture phonograph motors, small induction motors, and some wiring devices (ref. 7) at the Property. By 1921, operations expanded to include the manufacture of switches, sockets, receptacles, attaching plugs, and fuses. In 1924, manufacturing was expanded to include code wire, conduit, outlet boxes and fittings, armored cable, fixture and lamp cords, and welding electrodes. Beginning in the 1930's and concluding in approximately 1970, GE operated a Housewares and Small Appliances Division at the Property. These operations were primarily limited to offices and a testing laboratory. The Accessory Equipment Operation (division of Consumer & Industrial – Americas Operation (C&I)) began in 1936 and operated until the early 1970s, to manufacture push buttons, plugs and various other items. Wire and cable manufacturing processes were conducted from 1930 to 1986. From 1986 to 2007, Site operations consisted of the manufacturing large rotary switches, small rotary switches and lamp holders. All manufacturing ceased in 2007. Details regarding GE operations are presented in Appendix XI.

3.4.3 Previous Environmental Investigations and Closure Activities

Numerous investigations and closure activities have been completed at the Site, particularly under RCRA. This section summarizes these past investigations, and where applicable, closure activities associated with: (i) various manufacturing, chemical handling or storage structures at the Site; or (ii) areas of the Site that have unique characteristics or former operations. With the exception of the 1988 RCRA Facility Assessment (ref. 1) which is separately discussed, the results for these investigations have been incorporated into this document. Specific closure activities associated with the former hazardous waste storage areas are discussed below. Past

investigation and closure activities associated with former USTs and ASTs are detailed in Appendix IX. Information pertaining to the more recent Phase II/III investigations is discussed in Section 6.0.

Building 31AE Metal Plating

From approximately 1922 until 1986, Building 31AE at the Site contained metal plating operations, including a wastewater collection system from which a release was documented. Closure activities for Building 31AE were completed in the following three phases:

- Evaluation of floor conditions and sampling of concrete;
- Evaluation of the underlying soils and excavation of the impacted unconsolidated materials; and
- Assessment of the exposed bedrock surface and remaining soils within the building footprint.

A summary of closure activities is presented in Appendix XII.

Wastewater Treatment Plant

As part of the plating operation, a wastewater treatment plant (WWTP) operated in the northeastern portion of the Power House from 1974 until September 1986. The WWTP was decommissioned in 1987 and closed in the following manner:

- Cleaning and removal of aboveground storage tanks (ASTs);
- Removal and proper disposal of associated pumps, piping and ventilation system; and
- Inspection and sampling of the WWTP concrete trench.

A summary of closure activities is presented in Appendix XIII.

RCRA Facility Assessment

In 1988, a RCRA Facility Assessment (RFA) (ref. 1) for the GE 1285 Boston Avenue Property was prepared by Versar Inc. on behalf of and under the direction of the USEPA. The RFA identified 16 Solid Waste Management Units (SWMUs) on the Boston Avenue Property, the following 5 of which were at least partially located on the Site:

- Bag houses;
- Active Drum Storage Unit;

- Wastewater Collection System for Accessory Metals;
- Wastewater Treatment Plant;
- Storm Drains and Contact Cooling Water Conduits; and
- Sanitary Sewers.

Bag houses

Bag houses supporting former wire and cable operations were located in Courtyards 28L and 32L and the eastern side of Building 43 (west of Courtyard 27L) (Appendix XI). The RFA concluded that there was no indication of a release from any of the bag houses to soil, groundwater or surface water, and no further action was warranted.

Active Drum Storage Unit

The RFA concluded that there was no evidence of a release from the "active drum storage unit" (Building 35 Hazardous Waste Storage). Closure of the "active drum storage unit" is discussed below.

Wastewater Collection System for Accessory Metals

The RFA concluded that a release had occurred to soil from the operation of the wastewater collection system for accessory metals (Building 31AE metal plating, Appendix XI), and also acknowledged that soil in this area had been removed to bedrock. The RFA concluded that there was a potential for a release to groundwater. Details regarding remedial activities to address the release associated with the "wastewater collection system for accessory metals" are described above and presented in Appendix XIV. Further investigations associated with this area of concern (AOC) are detailed in Section 6.0.

Wastewater Treatment Plant

The WWTP was located in the northeastern portion of the Power House (on the Site). It received discharges from the wastewater collection systems for accessory metals and a tin and copper wastewater collection system located on the Boston Avenue Property (Appendix IX). The RFA concluded that there was no evidence of a release to soil or groundwater from the WWTP.

Details regarding the closure of the WWTP are described above and presented in Appendix XIII. Further investigations associated with this AOC are detailed in Section 6.0.

Storm Drains and Contact Cooling Water Conduits

The RFA discusses releases of hazardous substances to the storm drainage system, and that contact cooling waters discharged to the storm drainage system; these releases and contact cooling water discharges discussed in the RFA occurred on the larger Boston Avenue Property and not on the Site. The RFA indicates it is unknown if releases to soil or groundwater occurred from the stormwater system, and indicates the potential for a release to surface water. The stormwater system has been identified as a Site-wide AOC and is discussed further in Sections 6.0 and 8.0.

Sanitary Sewers

From 1930 until 1974, plating wastes from Building 31AE were directly discharged to the sanitary sewer along Bond Street. Overflow plating waste was discharged to the sanitary sewer until 1976 (Appendix XI). A break in the 6-inch sanitary pipe leading to Bond Street was identified in February 1976, after which the sewer was plugged and abandoned. The cause and duration of the break are unknown. The RFA indicates it is unknown if releases to soil or groundwater have occurred from this location. Further investigations associated with this AOC are detailed in Section 6.0.

RCRA Closure Activities

Two former hazardous waste storage areas located at the Site in Buildings 35 and 33 respectively have been finally closed in accordance with RCRA standards.

Building 35 Hazardous Waste Storage

From 1986 until 1992, GE utilized Bay 1 of Building 35 as a “greater than 90-day” hazardous waste storage area under RCRA. To close this area beginning in 1993, GE visually inspected then sampled concrete floors through chip and core samples. The visual inspection identified two hairline cracks in the floor. Concrete chip and core samples revealed the presence of

polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs) and phthalates. In early 1996, GE decontaminated and removed the primary floor and sampled the fill beneath it, which fill contained asphalt, brick and ceramic pieces. GE encountered a second concrete sub-floor about 3 feet below the primary floor. GE fully excavated the fill and then vacuumed the newly exposed foundation floor.

Details of these closure activities were presented in the Closure Plan that GE submitted to the CTDEEP on July 9, 1996, including the unsigned certification of closure. GE did not receive a response from CTDEEP regarding the Closure Plan at that time. On May 9, 2009, a public notice announcement of the Closure Plan was published in the Connecticut Post. No written comments were received. On September 23, 2009, the CTDEEP approved the Closure Plan pursuant to RCSA §22a-449(c)-105, incorporating by reference 40 CFR Part 265, Subpart G. Certification of the closure by a Professional Engineer was submitted to the CTDEEP on October 15, 2009. The Closure Plan, public notice, CTDEEP approval and certification of closure are presented in Appendix XIV.

Building 33 Hazardous Waste Storage

From 1996 until July 2011, GE stored hazardous waste in a pre-fabricated, free-standing steel epoxy coated 160-square foot containment building (containment building) located inside former Building 33AW. The storage unit meets the definition of a "containment building," found at 40 CFR §260.10, and is regulated by RCSA §22a-449(c)-105, incorporating by reference 40 CFR Part 265, Subpart DD. The containment building was designated as a "less than 90-day" storage unit when it was installed in August of 1996. However, a review of hazardous waste documentation could not confirm that waste storage times did not exceed this limit. Therefore, GE opted to close the containment building as a "greater than 90-day" hazardous waste storage unit.

GE completed closure in accordance with the CTDEEP approved Building 33 Hazardous Waste Management Unit Closure Plan, Leggette, Brashears & Graham, Inc., February 2011 (Closure Plan). A public notice announcement of the Closure Plan was published in the Connecticut Post on May 5, 2011. No written comments were received. CTDEEP approved the Closure Plan on August 8, 2011. In accordance with the Closure Plan, the unit was disassembled, placed in a lined roll-off container, manifested as a D005 waste and, on September 9, 2011, transported offsite for disposal. Certification of the closure by a Professional Engineer was submitted to the CTDEEP on November 4, 2011. The Closure Plan, public notice, CTDEEP approval, and certification of closure are presented in Appendix XV.

Past Groundwater Sampling and Data

A total of 57 groundwater samples were collected from 11 onsite monitoring wells (2 bedrock and 9 overburden monitoring wells) between 1986 and 1996 for analyses of metals, semi-volatile organic compounds (SVOCs), VOC, PCBs, pesticides, and/or petroleum hydrocarbons. The samples were collected as part of voluntary Site investigations, the RFA, and UST closures. In general, the wells were evenly spaced throughout the Site to assess groundwater quality flowing onto the Site and groundwater hydraulically downgradient of the former manufacturing operations. Soil and groundwater investigations associated with past UST closures are discussed in Appendix IX. Appendix XVI includes a figure showing the location of the monitoring wells sampled and tables summarizing groundwater samples analyzed and constituents detected.

No PCBs or pesticides were detected in the groundwater. Petroleum hydrocarbons, VOCs, metals and polynuclear aromatic hydrocarbons (PAHs) were identified flowing onto and within the Site boundary. As would be expected, results for analyses of total constituent concentrations exceeded results for the corresponding dissolved constituent concentrations, because sampling protocols applicable in this timeframe generally caused greater disturbance of the formation and more turbid samples. Total metals (arsenic, beryllium, copper, lead, and zinc) were detected above the numerical surface water protection criteria (SWPC) in four wells located on the central portion of the Site. PAHs (benzo(a)anthracene and benzo(b)fluoranthene) were detected during two sampling events flowing onto the Site above the SWPC. Vinyl chloride was detected during

a single sampling event above the Residential Volatilization Criteria on the eastern portion of the Site. No other constituents were detected above Remediation Standard Regulation criteria.

This groundwater quality data was used to develop the Site Investigation Work Plan, and portions of this well network were incorporated into the Phase II/III investigations. However, due to the age of the data, it may no longer represent current Site conditions and was not used to evaluate the present environmental status of Site AOCs.

3.5 Deconstruction

The former Site buildings were removed during two events: buildings 26L, 26R, 27L, 31T, 34R, 35, 36, 37, 44, and 54 during the first event in 1999; and buildings 26 through 34, and 63 during the second event from August 2011 through July 2012.

As part of the planning for the 2011/2012 deconstruction activities, GE completed extensive testing of the building materials, including collecting and analyzing 255 samples of brick and concrete. The results showed that crushed brick and concrete met the definition of clean fill and applicable soil criteria (GB PMC and RDEC) within the RSRs. On August 12, 2010, GE petitioned CTDEEP to allow reuse of the crushed brick and concrete as clean fill on the Boston Avenue Property, including on a portion of the Site. CTDEEP approved the request on October 18, 2010. Both communications are presented in Appendix XVII. This material was placed on the Site to the west of the topographically higher eastern asphalt area so that a moderate slope exists to the topographically lower western portion of the Site.

4.0 SITE INSPECTION

LBG completed an inspection of the Site on July 20, 2012. Contemporaneous photographs from the inspection are presented in Appendix XVIII. A discussion of the observed conditions follows.

The approximate 100 foot eastern edge of the Site was paved with asphalt, with stormwater catch basins located on the western side of this area. The asphalt contained cracking and some staining. The stormwater catch basins were surrounded by hay bales weighted with sand bags. Inspection of all exterior catch basins revealed no signs of sheens or stained deposits.

Crushed brick and concrete created a sloped grade from the elevated eastern portion of the Site to the lower, western portion of the Site. No staining was observed on the crushed brick and concrete.

The lower central portion of the Site was covered with fine silt and gravel from the crushed brick and concrete. Asphalt or concrete slab were observed beneath this thin layer of material throughout most of this area. The area west of the utility poles was completed with asphalt or intact concrete and was virtually free of crushed brick and concrete. Concrete and asphalt throughout the lower area was observed to be in fair condition with more frequent cracking than in the 100-foot wide eastern portion of the Site. Inspection of the area revealed no signs of staining or sheens in pooled water.

An approximate one foot wide hole in the asphalt was observed on the northern portion of the Site. Underground piping was observed at the base of the hole. After the Site inspection, the hole was covered with a large steel plate.

A small pre-fabricated, free-standing, steel, epoxy-coated waste storage building is located on the north-central portion of the Site. The building is in excellent condition. No stains or other signs of leakage were observed in the area surrounding the storage building.

5.0 ENVIRONMENTAL RECORDS REVIEW

In 2006, LBG reviewed Federal, State and local environmental databases for the Boston Avenue Property maintained by the independent firm Environmental Data Resources, Inc. (EDR) of Southport, Connecticut in an effort to update information regarding the regulatory status of the Property and to identify surrounding properties that may have had documented environmental impacts. In addition to that database review, LBG reviewed files maintained at the CTDEEP and local regulatory agencies at that time.

To update that information for the purposes of this report, a database search was again conducted in July 2012, also by EDR. This search included a standard list of U.S. Environmental Protection Agency (USEPA), CTDEEP and other databases. The list of information sources that were searched, search radii, Geographic Information System (GIS) maps of the appropriate databases, and a copy of the database report are included in Appendix XIX. A discussion of the pertinent database information is presented below. In reviewing this information, it is important to note that many of the records identified in the database and file searches pertain to the Boston Avenue Property as a whole, and may not pertain specifically to the subject Site. Where possible, the distinction has been made below between those records that pertain specifically to the Site and those that pertain to the Boston Avenue Property parcel.

The Boston Avenue Property was generally identified in the following database sources: FINDS; FTTS/HIST FTTS; CORRACTS; RCRA-LQG; RCRA-TSDF; SHWS; CPCS; SDADB; US INST CONTROL; FINANCIAL ASSURANCE 1; US FIN ASSURANCE; NPDES; LUST; AIRS; CT BROWNFIELD; BROWNFIELDS 2; LWDS; CT MANIFEST; and NY MANIFEST lists. The information derived from these sources is discussed in Section 5.1 below. Section 5.2 discusses information contained in the UST database, while Section 5.3 provides data from the ERNS and SPILLS databases.

5.1 General Database Information

The FINDS database contains facility information and "points" to information in other databases related to environmental activity at the searched property. The following databases are noted in the FINDS entry for the Boston Avenue Property: National Compliance Database (NCDB);

Aerometric Information Retrieval System (AIRS); National Emissions Inventory; Toxic Release Inventory System (TRIS); Resource Conservation and Recovery Act Information System (RCRAInfo); Hazardous Waste Biennial Reporter; Criteria and Hazardous Air Pollutant Inventory; Connecticut Site Information Management System (SIMS); and the Integrated Compliance Information System (ICIS). Specific details of the above entries were not provided in the FINDS database list in the EDR report, but information available on the EPA Facility Registry System database on line was substantially consistent with those entries and indicated the following:

- NCDB: Three compliance-activity entries were noted, with no detail on the nature of the activities.
- AIRS: One entry was noted for a State registration for minor air emissions. Additional information on AIRS is provided below.
- National Emissions Inventory: Two entries were noted, with no detail on the nature of the entries.
- TRIS: One entry was noted that linked to a list of aggregate mass of TRI chemicals released from the Property to various environmental media (air, land, surface water and underground injection) and transferred from the Property for off-site disposal between 1988 and 2007.
- RCRAInfo: Two entries were noted, one listing the site as an active Large Quantity Generator and another as an active Treatment, Storage and Disposal Facility, both with identification number CTD001453711 (see below for additional RCRAInfo details).
- Hazardous Waste Biennial Reporter: One entry was noted for identification number CTD001453711. No reporting details were provided (see below for additional Biennial Reporting details.)
- SIMS: One entry, which referred to four state air program entries and one UST entry.
- ICIS: Two entries for compliance activities in 2001 and 2004, with no detail on the nature of the entries.

There was no entry for the Criteria and Hazardous Air Pollutant Inventory.

The entries in the FTTS and HIST FTTS databases both reference the same inspection number (19861016CT0101) dated October 16, 1986. The FTTS database shows that an investigation focused on polychlorinated biphenyls (PCBs) was completed and a violation was identified. Details of the reported investigation and violation were not noted other than that the investigation type was listed as "Section 6 PCB State Conducted." GE records show that, after a facility inspection completed by USEPA in 1986, GE received a notice that it had violated 40 CFR Part 761.180 by failing to submit annual documents pertaining to the use, storage,

transportation or disposal of PCBs or PCB items for the years 1982 through 1985. The violation was issued on December 31, 1986. GE filed the requested documents with the EPA Office of Pesticide and Toxic Substance on January 27, 1987.

The CORRACTS database entry dated June 7, 1989 noted that a RCRA Facility Assessment was completed (CA050), and in 1991 a medium corrective action priority was assigned to the Boston Avenue Property. In 2009, migration of contaminated groundwater (CA750) and human exposures (CA725) were both determined to be under control. The site is also listed on the 2020 Corrective Action list, but no significant information is provided.

The RCRA-TSDF and RCRA-LQG database identifies the Boston Avenue Property as a TSDF (treatment, storage and disposal facility) and as a LQG of hazardous waste. The database also provides a 2011 biennial summary of EPA Waste Codes and amounts generated at the facility during 2011; however, the wastes and amounts are incorrect. The following is an accurate list of the waste codes and amounts listed on the Property's actual 2011 biennial report:

TABLE 6

2011 Biennial Summary

EPA Waste Code	Contaminant	Waste Description	Amount Handled
D001	Ignitable	Spent aerosol cans	1,155 lbs.
D005	Barium	Building debris	25 cubic yards
D006	Cadmium	Cleaning fluid from spill-containment pallets	400 lbs.
D006/D008	Cadmium/Lead	Soil	138.49 tons
D008	Lead	Soil	522.72 tons
D009	Mercury	Building debris	600 lbs.
D009	Mercury	Bulbs and boiler filters	65 lbs.
F001	Spent halogenated solvents used in degreasing	Purge water containing PCE and TCA	55 gallons

The SHWS database references Order HM-260, which was issued by the CTDEEP, to require GE to close the former sludge drying beds (SDBs) located on the Boston Avenue Property (but not the Site). The closure activities and associated remediation is noted as partially complete as

of an inventory date of July 7, 1987. CPCS has a similar entry, including the note "Closure Partially Complete; Waste Removed. Remediation Incomplete. HM-693. K.Sullivan."

The SDADB listing also refers to the SDBs and notes that metal hydroxide sludge was disposed of in an impoundment. Under the heading "Remediation Complete Approved DEP/Verified by LEP", the date July 6, 1987 is listed. On February 10, 2010, the CTDEEP approved an Amended Closure Plan, which provides for the "clean closure" of the former SDBs. As noted above, the SDBs are not located on the Site.

The US INST CONTROL database references a date of April 12, 1996 and a code of CA772GC. CA772GC refers to the establishment of institutional controls as part of, or to augment, an interim or final corrective action and/or when institutional controls are established for regulated units undergoing closure or post-closure care. Two entries are listed for the Property in the RCRAInfo database; "institutional control evaluated, selected, implemented – governmental control" and "institutional controls established - governmental control". The code 'GC' is used when governmental control is implemented or enforced by State or local governments. Although no detail is provided in the database regarding the exact location or terms of the institutional control, this appears to refer to actions taken under RCRA at the SDBs, which are not located on the Site.

The FINANCIAL ASSURANCE 1 listing indicates post-closure costs of $904,255 and the note "yes" under the "Financial Test" heading. The US FIN ASSURANCE listings indicate a post-closure cost estimate of $910,405 as of March 31, 2009 and that the financial assurance mechanism was the General Electric Company financial test. This financial assurance is related to the SDBs which, again, are not located on the Site.

The NPDES listing includes numerous discharge permit dates and numbers, including renewals of several of the permits, but most did not indicate the specific purpose or source of the discharge. Permit GGR001024 is a current general permit for discharge of groundwater remediation wastewater to sanitary sewer and permit GSI000534 is a current general permit for

discharge of stormwater from industrial activity. General Permit numbers, GTC000083, GSW000331, GPH000256, CT0001767, GCW000087, and GGR000104 were also listed and all had expired.

A number of the databases provide listings, but little detail:

- The LUST listing provides merely a date of March 23, 1990, an UST identification number (76), identifies the product as heating fuel, and states the status as "cleanup initiated."
- The AIRS database indicates that a Permit Number 84 was issued for a Cummins Diesel generator on December 17, 1982.
- The BROWNFIELD 2 and CT BROWNFIELD identify the Site as a manufacturer of electrical components but erroneously list it as located on 50.4 acres.
- The LWDS database listing identifies three reference numbers: 7103005 (inactive, ground), 7103006 (active, surface) and 7103007 (inactive, ground) with no additional detail.

Also included in the databases was information for a number of individual manifests included in the Connecticut and New York State manifest databases.

5.2 Underground Storage Tank Database

The UST information from the EDR report identifies 43 USTs on the larger Boston Avenue Property, all but two of which are listed as removed. According to the report, the two that remained in place had been closed in place and filled with an inert material.

Twenty–two (22) USTs were formerly located on the Site according to GE files. Twenty (20) of those are listed in the EDR UST database and all 20 are listed as removed. Three discrepancies in the UST tally between the EDR UST database and GE's files were noted. One UST on the GE list does not appear on the EDR UST database because it was removed in 1929, prior to any registration requirements. A second UST that appears on the GE list as removed does not appear at all on the EDR UST database. A third UST that appears on the GE list as partially closed in

place is listed as removed on the EDR UST database. There are also discrepancies between the UST database and the GE files regarding the contents of some of the USTs. For instance, some are listed in the database as gasoline, while GE's files indicated that the contents were mineral oil, linseed oil or plasticizers. Appendix IX provides detailed information from GE's files regarding all former Site USTs.

5.3 Reported Releases

Six releases are listed in the ERNS database and 18 on the SPILLS database for the Boston Avenue Property. Some of these listings cover the same incident, so that there are 22 total recorded releases for the Property. Most were small quantity releases and did not occur on the Site. Details regarding the eight reported spills that are believed to have occurred on the Site are presented in Appendix XX, along with spill reports and supporting GE correspondence. These spill incidents are described in the Appendix and each spill was assigned an arbitrary identification letter for the purpose of showing the approximate release locations on Figure 16.

5.4 Orders and Notice of Violations

Three Orders were identified in CTDEEP and GE files as having been issued to GE with respect to the Boston Avenue Property between 1972 and 1990. While compliance was achieved with all Orders, only one was associated with activities partially attributed to the Site. On April 17, 1972, CTDEEP issued Order No. 1003 under the provisions of Public Act No. 872 of the 1971 General Assembly, alleging that, through wastewater generated by its metal plating activities in Building 31AE, GE was causing pollution of the waters of the State. The Order required GE to:

- Install facilities to ensure adequate treatment of wastewaters associated with metal finishing operations;
- On or before August 31, 1972, submit an engineering report describing volumes and characteristics of wastewater, and proposed treatment of such wastewater;
- On or before November 30, 1972, submit construction plans and specifications for the facilities;
- On or before February 28, 1973, verify that construction has started; and

- On or before August 31, 1973, verify that required facilities have been placed in operations.

The Order was modified on September 17, 1973 with the following condition:

- On or before October 31, 1973 verify that required facilities have been placed in operations.

The wastewater treatment plant (formerly located northeast of the Power House), which was built to meet the terms of this Order was placed in operation on September 25, 1974. On December 10, 1974, CTDEEP issued a letter acknowledging full compliance with Order No. 1003.

A total of 21 NOVs were identified for the Boston Avenue Property through a review of files maintained at GE and the CTDEEP, and information identified in the RCRA database. The NOVs listed in the database for the Property were general in nature, relating to financial requirements, groundwater monitoring and "general" TSD issues. Compliance dates are listed for all but four of the entries. Additional information for all of these NOVs is provided in Appendix XXI because it unclear which NOVs relate only to the Site.

5.5 Surrounding Properties with Environmental Files

Properties that may present a potential environmental threat to the Site would likely be located topographically or hydraulically-upgradient or to the northwest, north or northeast of the Site. A discussion of properties identified with environmental issues within ½-mile radius upgradient of the Site is presented below.

The Greater Bridgeport Transportation Center is reportedly located approximately 300 feet east of the Site on Dover Street and is noted as housing four active asphalt coated or bare steel gasoline and diesel fuel USTs. These USTs reportedly were installed between 1950 and 1968. A fifth gasoline UST was closed in place in 1958. No reports regarding the environmental condition of the Site were identified.

Industrial Precision Components Corporation, located at 315 Asylum Street approximately 1,300 feet west of the Site, is listed on the RCRA-SQG, FINDS and SDADB database. The RCRA SQG listing indicates this site generates, transports or stores more than 100 kg and less than 1,000 kg of hazardous waste in a month, including solvents and hydrocarbons. Two violations were identified for the Site, of which consisted of "generator-all requirements (oversight)".

Bullard Havens Technical School, located approximately 800 feet northeast of the Site, is listed on the LUST database due to a release from an unidentified source in 1993. All contaminated soils reportedly were removed and monitoring wells were installed in 1995.

Progressive Plating Technology Incorporated is located 1,600 feet northwest/west of the Site was used for metal plating and is listed on the CERCLIS, RCRA-SQG, FINDS, CT Property and SDADB databases. Eighteen (18) violations were identified for this property that pertain to proper container management, waste characterization, inspection and schedule logs, and land ban requirements. A Form III was filed for the parcel in 1989, meaning that the parcel was transferred as an "establishment" for which either: the environmental condition is not known; or, a release has occurred and has not been remediated in accordance with the RSRs.

The Bridgeport Transfer Station is located approximately 1,300 feet northwest of the Site and is identified on the LWDS database for discharges of incinerator and scrubber wash water to surface water.

The Sporting Goods Properties Inc./Remington Arms property (SGP Property) is approximately 700 feet north of the Site, contiguous with a portion of the Property, and is identified on the SHSW, FINDS, RCRA-LQG, RCRA-TSD, RAATS, CORRACTS, CERC-NFRAP, LUST, LWDS and SDADB database. The SGP Property was used by Remington Arms from 1905 to 1989 for the manufacture, testing and disposal of small and large caliber ammunition. Manufacturing was performed primarily on the southwestern portion of the SPG Property, north of the Site. Munitions testing reportedly was performed northeast of the manufacturing site. The SGP Property reportedly contains abandoned mercury and lead process lagoons. Investigations

identified overburden and bedrock groundwater contamination containing VOCs and metals along the northern boundary of the Boston Avenue Property at concentrations exceeding the Surface Water Protection Criteria. In addition, lead, arsenic and mercury reportedly have been detected at concentrations of 6,900 mg/kg (milligram per kilogram), 22 mg/kg and 3.2 mg/kg in the sediments immediately upstream of Brook B on the SPG Property. Higher concentrations of these metals were detected in further upstream sediments. Remedial activities reportedly have been and are being conducted, including excavation and soil stabilization. Remedial activities halted for a time in 2005, partially due to the identification of live ordinance in facility soils and lack of capacity in the onsite corrective action management unit.

Twenty-one (21) "orphan" sites, with incomplete address information, were identified during the database search. None of the sites listed were identified within ¼-mile of the Site. The complete orphan sites list is included in the EDR report contained in Appendix XIX.

6.0 IDENTIFICATION AND INVESTIGATION AREAS OF CONCERN

Several areas of concern (AOCs) were identified on the Site: discrete AOCs (i.e., former USTs, vapor degreasers, loading areas, chemical storage, etc.); more generalized AOCs (i.e., former manufacturing operations in buildings that handled chemicals, storage of drums in western courtyards, etc.); and AOCs that extend across large Site areas (i.e., drainage, filling, and rail lines). Table 7 provides a summary of the AOCs, while their locations are shown on Figure 17.

A number of AOCs extend across a large portion of the Boston Avenue Property, including the Site. In particular, AOCs 30 through 34 include the former utility tunnel, sanitary sewers, floor and storm drainage system, railroad tracks and site-wide fill. Based on the review of property information, Chemicals of Concern (COCs) would have entered any of the Site underground piping (floor drains, storm, sanitary) from operations more than a decade ago. For the sanitary sewer, any process discharges would have occurred more than 35 years ago. Rail has not been used at the Site for decades. Fill for construction would have been brought onto the Site between 60 and 100 years ago.

Identification and investigation of the discrete AOCs and generalized AOCs is presented in Appendix XXII. These investigations were designed to collect targeted samples for the discrete AOCs as well as samples representative of a broader area for the generalized or site wide AOCs. As detailed in the Site Investigation Work Plan, field screening tools, such as geophysics and soil-vapor screening, were used to select many sampling locations.

RCSA §22a-449(c)-105(h) requires that a land disposal facility, such as the Site, be investigated in accordance with the prevailing standards and guidelines and remediated in accordance with the Connecticut Remediation Standard Regulations (RSRs). See RCSA §§22a-133k-1 through 22a-133k-3. For this reason, investigations at the Site were completed using the Connecticut Department of Energy and Environmental Protection (CTDEEP) September 2007/Revised December 2010 Site Characterization Guidance Document as technical guidance, and following these work plans:

- *Site Investigation Work Plan, Leggette, Brashears & Graham, Inc., October 2006 (Site Investigation Work Plan);*

- *Supplemental Investigation Work Plan Interior Developed Portion of the Site, Leggette, Brashears & Graham, Inc., July 2007;*

- *Supplemental Investigations Work Plan within Developed Portion of Site, Leggette, Brashears & Graham, Inc., October 2007;*

- *Supplemental Investigations Work Plan within Main Building and Power House, Leggette, Brashears & Graham, Inc., June 2009*

- *Supplemental Investigations Work Plan within the Developed Portion, Leggette, Brashears & Graham, Inc., April 2010; and*

- *Quality Assurance Project Plan, Leggette, Brashears & Graham, Inc., October 2006*

Appendix XXII contains 29 attachments that each discuss a specific AOC, concerns presented by that AOC, investigations completed to assess the AOC and the findings of the investigation. Figures and Tables summarizing the results are included with each attachment. Laboratory results are presented in XXIII, and the data quality assessment and usability evaluation is presented in Appendix XXIV.

Many COCs were detected in soils across the Site at concentrations both above and below applicable RSR criteria, and often without any discernible connection to a particular AOC. Due to the wide-spread nature of these impacts and overlap between potential specific releases and identified area wide AOCs:

- A specific source for the impacts and an assessment of quantity or timing of any release often could not be determined;
- Delineation of releases to "ND" was not feasible in many areas.

Rather than attempting to identify a particular release to account for the presence of each COC in Site soils, this report identifies the lateral and vertical extent of soil impacts throughout the Site to the extent practicable. Section 7.0 discusses the distribution of constituents identified in soil and groundwater throughout the Site.

7.0 GENERAL OCCURRENCE OF CHEMICALS OF CONCERN

This section provides an overview of the COCs detected in soil and groundwater during the investigations of specific AOCs as well as investigation of overall Site conditions. Based on the distribution of COCs throughout the Site, it is difficult to determine whether specific COCs present in soils and groundwater are associated with specific AOCs or with area wide AOCs 30 through 34. Figures 18 through 35 show the site-wide distribution of COCs in soil. Plates 2 through 6 show the site-wide distribution of COCs in groundwater. Tables 8 and 9 show all constituents analyzed in soil and groundwater, respectively. Tables 10 through 19 show all COCs detected in soil. Tables 20 through 24 show all COCs detected in groundwater.

7.1 Regulatory Framework for Data Evaluation

As a land disposal facility, evaluation of environmental conditions at the Site must include comparing the concentrations of COCs found in various environmental media to applicable standards in the Connecticut Remediation Standard Regulations (RSRs). *See* RCSA §22a-449(c)-105(h), RCSA §§22a 133k 1 through 22a-133k-3. A summary of those RSR criteria that apply to the Site is set out below. CTDEEP's Proposed Revisions to the March 2003 Volatilization Criteria is also discussed.

Determining which RSR criteria apply to the Site depends on the selected future land use, though Residential RSR criteria will apply as the default criteria. The groundwater classification of the area (GA vs. GB) also affects application of the various RSR criteria. Groundwater at the Site is classified as "GB" and is subject to GB RSR criteria. A "GB" classification applies to groundwater within highly urbanized areas or areas of intense industrial activity and where public water-supply service is available rather than private water supply wells. Groundwater with a GB classification may be impaired and the State's goal is to prevent further degradation of the aquifer.

Remedial action or other measures will be necessary at a site if the concentrations of COCs existing in the various environmental media exceed the applicable values from the RSRs.

7.1.1 Soil Remediation Standards

In general, soil impacts at the Site are evaluated against the applicable: (1) direct exposure criteria; and (2) pollutant mobility criteria. See R.S.C.A. §22a-133k-2(a).

Direct Exposure Criteria (DEC)

DEC criteria apply to all soils within the top 15 feet of material at a Site, unless the soils are "inaccessible." Soils are considered inaccessible if they are located below: (i) a building; (ii) 2 feet of clean fill and an asphalt cap; or, (iii) 4 feet of clean fill.

Residential DEC apply as the default DEC regardless of actual land use. The definition of "residential" use includes school.

Pollutant Mobility Criteria (PMC)

The Site and the Boston Avenue Property are located in an area classified as GB for groundwater. For that reason, the GB PMC apply to soils at the Site that are above the seasonal-high water table.

- For metals, cyanide and PCBs in soils, the results of a leaching test (typically synthetic precipitation leaching procedure (SPLP)) performed on the soils must be below the published GB PMC.
- For all other constituents, the total (mass) concentrations of the parameter in the soil must be below the default GB PMC. As an alternative, for these constituents, leaching analyses such as the SPLP can be performed and compared to either: (i) 10 times groundwater protection criteria (GWPC); or (ii) the GWPC multiplied by the sum of the ratio of the areas downgradient and upgradient of the release area to the release area (provided the ratio does not exceed 500).

7.1.2 Groundwater Remediation Standards

Because the Site is in a GB groundwater classification area, the quality of groundwater at the Site is evaluated against either: (1) the surface-water protection criteria (SWPC) and the volatilization criteria (VC); or (2) the background concentration for groundwater in the plume.

See R.S.C.A. §22a-133k-3(a)(1). In addition, constituent concentrations in GB groundwater must not interfere with any existing uses of that groundwater. See R.S.C.A. §22a-133k-3(a)(3). Light non-aqueous phase liquid (LNAPL) must be removed in accordance with RCSA §22a-449(c)-106(f), and all other NAPL must be removed to the "maximum extent prudent".

Surface-Water Protection Criteria

The SWPC apply to groundwater at the point it discharges into a surface-water body.

Volatilization Criteria (VC)

The VC apply to volatile organic compound (VOCs) concentrations in groundwater within 15 feet of the ground surface of a building. However, the CTDEEP has proposed revisions to RSRs that will change this value from 15 to 30 feet. As an alternative, compliance with the VC can be established through analysis of VOCs in actual soil vapor beneath a building compared to the soil vapor volatilization criteria (SVVC).

The Residential VC are the default VC.

7.1.3 Alternatives

The RSRs provide exemptions, alternatives and variances to all of the criteria, some of which are described above.

7.1.4 Additional Polluting Substances

ETPH

The RSRs include criteria for determining concentrations of Total Petroleum Hydrocarbons (TPH) "by EPA Method 418.1 or another EPA-approved method acceptable to the Commissioner." Application of Method 418.1 was phased out due to its use of Freon in the extraction process. On June 22, 1999, the Commissioner of the State of Connecticut Department of Public Health approved an alternative analytical method, the Connecticut Extractable Total Petroleum Hydrocarbon (ETPH) method, for determining TPH concentrations. Thereafter, the

CTDEEP issued a notice that the ETPH method should be used for site characterization purposes, and confirmed that the RDEC and GBPMC for TPH using the ETPH method would remain at 500 mg/kg (milligram per kilogram) and 2,500 mg/kg, respectively. It also identified a GBPMC criteria for SPLP ETPH of 2.5 mg/l (milligram per liter). However, CTDEEP did not amend the RSRs to reflect this change. Because the RSRs have not been amended, the CTDEEP has since required that site-specific requests to utilize the ETPH method must be submitted to the Commissioner of CTDEEP (Commissioner) as a request for an additional polluting substance (APS) determination, either using criteria outlined in the RSRs for APS or as a pre-evaluated method and associated criteria developed by CTDEEP. While a request has not yet been submitted for ETPH at this Site, it is assumed that CTDEEP would approve the following criteria for site-specific use based on the above discussion and past practice. For this reason, ETPH criteria appear on data tables in this report for comparison purposes.

Constituents without Criteria

For COCs for which criteria have not been promulgated (APSs), the RSRs provide a means by which to develop DEC, PMC and GWPC for these COCs. These requests for criteria for APSs must be submitted for Commissioner approval on a site-specific basis. In 2008, CTDEEP proposed changes to the RSRs that included proposed criteria for a number of these APSs. These changes have not been adopted; however, CTDEEP has indicated that it will approve criteria for use on a site-specific basis if the requests are consistent with the criteria contained in the 2008 draft revisions to the RSRs. A number of APSs have been detected at the Site. For all but one of these, other constituents with promulgated remedial criteria were detected in the same location and are driving any site evaluation, regardless of what criteria might be approved for the APS. However, one APS (carbazole) was detected above the 2008 CTDEEP-proposed criteria in an isolated occurrence in which other constituents of concern (COCs) were not detected above their respective criteria. For this single instance, the proposed criteria are used in discussing this APS. For all other APSs, the data tables in this report list the criteria as “not established”.

CTDEEP Guidance for Certain Substances

Based on general guidance from CTDEEP, this report utilizes an RDEC for lead of 400 mg/kg rather than the promulgated 500 mg/kg, and a GB PMC for arsenic of 0.1 mg/l rather than the promulgated 0.5 mg/l.

7.2 Petroleum Hydrocarbons

Soils

The presence of petroleum hydrocarbons was assessed using the Connecticut extractable total petroleum hydrocarbon (ETPH) method. ETPH was considered one of the primary COCs in manufacturing areas, petroleum-storage areas and waste-storage areas.

ETPH was detected in samples distributed across the Site (58% of 706 samples), even in those areas not associated with an identified AOCs. Figure 18 shows the lateral distribution of ETPH across the Site as compared to the RDEC and GB PMC. A summary of all ETPH results is presented in Tables 10 and 11. ETPH was detected in 74% of samples collected in the upper 2 feet of soils. The highest ETPH concentration reported in a soil sample was 50,000 mg/kg in shallow soils near former Building 37 dry drain. Figure 19 shows the distribution of ETPH detected above the seasonal high water table.

In several locations, there was no correlation between concentrations of ETPH in shallow soils and concentrations in the deeper, saturated soils or between ETPH concentrations at different, deeper intervals. ETPH was detected above the RDEC and/or GB PMC in several locations in unsaturated soils, with no exceedances, and in some cases no detections, present in the same location below the seasonal high water table (See Figures 19 and 20 – former Buildings 29L, 31AW, Courtyard 30W and northern end of Former Building 54 and Former Building 37). Conversely, ETPH was detected at elevated concentrations well above the RDEC in the saturated zone with no corresponding shallow impacts west of former Building 31AW (location of former USTs 5 through 8) and beneath former Building 29AE. In four isolated areas, ETPH was detected above the RDEC beyond 7 feet below grade.

Total ETPH concentrations exceeded the GBPMC of 2,500 mg/kg above the seasonal high water table in 10 samples in 9 locations (5% of samples). Samples collected above the seasonal high water table that exceeded the GBPMC (based upon total analysis) were analyzed by SPLP as an alternative means of demonstrating compliance with the GBPMC. With the exception of one sample, the resulting SPLP ETPH concentrations were less than the ten times the GWPC (assuming that CTDEEP accepts an APS submittal). The extent of the single exceedance of the GB PMC was delineated and is located below former Building 30AS.

Groundwater

As shown on Plate 2 and Table 20, ETPH was detected in eight wells.

- Two of these wells are located on the northern and southern sides of an LNAPL area identified beneath former Courtyard 32. It is unclear whether the low level detections of ETPH in these wells (CY32-MW-6 and B33-MW-2) may be associated with the diisodecyl phthalate LNAPL located in this area.

- Two more of these wells are located in the vicinity of former USTs 5 through 8 (west of Building 31), where ETPH was detected in soil at a concentration of 20,000 mg/kg in two borings between 10 and 12 feet below grade.

- ETPH was also detected during 2 of 6 sampling events at trace concentrations in one monitoring well hydraulically downgradient of former UST 70 (southwestern portion of Courtyard 30), but was not detected during the three most recent sampling events. ETPH was detected above the RDEC in unsaturated soils in this area at a peak concentration of 526 mg/kg. ETPH was not detected in saturated soils in this area above the RDEC.

- ETPH has also been detected in 4 of 5 sampling events in a monitoring well hydraulically downgradient of former UST 38 (central portion of Courtyard 27). ETPH was detected below all soil criteria in the vicinity of the former UST and in the courtyard.

- ETPH was also detected in groundwater during one event in a well (B43-MW-1) located upgradient of the Power House. Similar to the groundwater detections in the vicinity of UST 38 and 70, ETPH was detected above the RDEC in unsaturated soils in this area at a peak concentration of 890 mg/kg.

- The remaining detection was located beneath former Building 31AW, in the location describe above in which ETPH was detected above the GB PMC.

7.3 SVOCs

Soils

Semi-volatile organic compounds (SVOCs) include a broad range of organic compounds with various uses. Included in the SVOC analyte list are phthalates (typically used as plasticizers), polynuclear aromatic hydrocarbons (PAHs) (present in petroleum products, asphalts, coal and combustion products), dibenzofuran (a coal-tar derivative, and is often detected with PAHs), phenol (production of phenolic resins and in slimicides and some consumer products), and several other compounds. In total, 710 samples from the Site were analyzed for PAHs and 469 of those samples also were analyzed for the broader SVOC list. The SVOC list of COCs for the Site changed over the course of the investigations, as some compounds not included in earlier analytical reports were included in later sampling efforts. A summary of all SVOCs detected is presented in Tables 12 and 13.

PAH compounds, a subset of the SVOCs, were the most commonly detected SVOCs. One or more PAHs were detected in 32% of the samples. Dibenzofuran was detected in a small subset of those samples. Phenol was detected in only two samples. Phthalates were detected in 5% of samples and other SVOCs were detected in 11% of samples.

RSR criteria are published for several PAH compounds, some phthalates, phenol and a few of the other SVOCs. For those compounds with established criteria, only PAHs exceeded one or more criteria. PAHs exceeded the RDEC in 15% of samples. The Site-wide pattern of PAH

detections above the RDEC is similar to the pattern of ETPH detections above the RDEC (Figure 21). This correlation between ETPH and PAHs is also true for the occurrence of PAHs above the seasonal high water table (Figure 22). PAHs have a similar occurrence pattern with ETPH within the saturated zone too (Figure 23), with the exception of the area of former USTs 5 through 8, where PAHs were detected at levels below the RDEC.

SPLP extraction and analysis of soil samples for SVOCs identified only 8 samples from above the seasonal high water table where the concentration of benzo(a)anthracene, benzo(b)fluoranthene and carbazole (PAHs) exceeded the 10 times the GWPC, an alternative approach to demonstrating compliance with the GBPMC. As noted above in section 7.1.4, there is no published RSR criteria for carbazole, but CTDEEP proposed a criterion that was used for comparison purposes. With the exception of carbazole, the total concentration of the aforementioned substances also exceeded the RDEC in these 8 samples.

Phthalates detected in soil were limited to diisodecl phthalate (DIDP), bis(2-ethylhexyl)phthalate, di-n-butyl phthalate and butyl benzyl phthalate. DIDP is the LNAPL beneath former Courtyard 32 and its occurrence is generally limited to this area. Bis(2-ethylhexyl)phthalate and butyl benzyl phthalate were detected in just 12 samples across the Site. None of the constituents were detected above established criteria; however, the RSRs require removal of the LNAPL.

Groundwater

SVOCs have been detected throughout Site groundwater. PAHs (acenapthelyne, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoanthene, and phenanthrene), and bis(2-ethylhexyl)phthalate were detected above the SWPC (Table 21). Plate 3 shows the distribution of the detections. Bis(2-ethylhexyl)phthalate was detected above the SWPC in one well located within the area of the DIDP LNAPL in former Courtyard 32. It has also been detected at similar trace concentrations flowing onto the eastern portion of the Site and within Site groundwater. Of the PAHs detected above the SWPC, only phenanthrene has been detected flowing onto the Site;

however, phenanthrene is detected at higher concentrations beneath the topographically low former industrial area, and is the most common PAH detected above the SWPC.

7.4 PCBs

PCBs formerly were used in transformers and capacitors at the Site. This equipment was removed and replaced with PCB-free equipment between 1980 and 1987.

Soils

Figure 24 shows the distribution and magnitude of PCBs detected in Site soils. Concentrations of PCBs below the RDEC of 1 mg/kg were sporadically detected in the shallow soils in topographically lower former industrial area. A summary of all PCB results is presented in Tables 14 and 15. As shown on Figures 25 and 26, nearly all PCBs were detected in soils above the seasonal high water table, and above 7 feet below grade.

PCBs were detected above 1 mg/kg in the 25 of 619 samples collected at the Site, with a peak concentration detected at 680 mg/kg. These samples were located beneath the northern interior and exterior portions of Building 54, and southern sides of Courtyard 30W and 32W. Impacts in these areas were generally shallow. Soils with PCBs greater than 1 mg/kg in these areas were excavated and properly disposed as part of several interim remedial actions completed between December 2010 and October 2012; and there are no longer any PCBs above 1 ppm in the Site soils. Documentation of the interim remedial actions will be presented under separate cover.

Groundwater

As shown on Plate 4 and Table 22, PCBs were detected below the SWPC in groundwater in two locations during the March 2007 events. PCBs were detected in groundwater flowing onto the northeast portion of the Site and southwest side of former Courtyard 30L.

7.5 VOCs

Soils

Volatile organic compounds (VOCs) include a broad range of organic compounds with various uses. Included in the VOC analyte list are aromatic hydrocarbons present in petroleum products and solvents, halogenated hydrocarbons used as solvents and degreasers, and other VOCs used as solvents, degreasers and for other purposes. In total, 541 samples from the Site were analyzed for aromatic and halogenated compounds and 23 additional samples were analyzed for one or more aromatic hydrocarbon compounds. The VOC list of COCs for the Site changed over the course of the investigations, as some compounds not included in earlier analytical reports were included on later reports.

The majority of the reported VOC detections were either common laboratory contaminants (acetone and methylene chloride) or common byproducts of sample preservation (acetone and 2-butanone). Many of these constituents were flagged by the laboratory as being contained in the laboratory or method blank. The use of these chemicals was limited at the Site, and because their detections are trace and do not correspond with a release, they are deemed laboratory artifacts and are not discussed.

Figure 27 shows the distribution of aromatic VOCs detected throughout the Site. As shown on the Figure and Table 16, most of the aromatic VOCs were detected at trace levels, below the seasonal high water table. Their occurrence typically corresponds with locations containing ETPH or identified with releases.

Detections of halogenated VOCs generally occurred on the western central portion of the Site. As shown on Figure 28 and Table 16, one halogenated VOC (PCE) was detected above the GB PMC beneath former Building 29R, at the highest detected concentration of halogenated VOCs at the Site. No other halogenated VOCs were detected above soil criteria, and the majority of those detected were above the seasonal high water table.

Groundwater

Halogenated VOC, specifically VC and PCE, were detected above the RVC on the west central portion of the Site at concentrations of 1.9 ug/l (micrograms per liter) and 920 ug/l, respectively. Vinyl chloride was detected above the RVC during 1 of 8 sampling events beneath former Building 44, while PCE was detected above the RVC in 1 of 3 sampling events west of Building 32W. PCE also was detected above the SWPC west and hydraulically downgradient of former Buildings 29L and 32W.

As shown on Plate 5, peak concentrations of halogenated VOCs have been detected west and hydraulically downgradient of former Buildings 29L and 32W. Halogenated VOCs were detected in the soils upgradient of these locations. As shown on Table 23, all other VOCs were detected at trace concentrations in groundwater.

7.6 Metals and Cyanide

Soils

Metals were detected in both soil and groundwater samples from the Site. Metals can originate in soil from a number of sources, including natural concentrations, onsite manufacturing operations (manufacture of wire insulation, milling, plating, drawing, etc.), used lubricants, materials storage, and imported fill.

Most soil samples were analyzed for the "Connecticut list" of 15 metals. Several additional samples were analyzed for the Connecticut metals list except for barium and/or vanadium. Selected samples were also analyzed for hexavalent chromium, trivalent chromium, boron, aluminum, iron and/or cyanide. Several samples were analyzed for arsenic or lead only. Tables 17 and 18 provide a summary of all total and leachable metal results.

Based on the data, arsenic and lead are the metals most frequently present at concentrations above the RDEC (16.3% for arsenic and 5.9% for lead) in the soil samples from the Site. Antimony, beryllium, copper, mercury and silver also exceeded the RDEC in one or more

samples. In most cases, antimony, copper and silver concentrations above the RDEC were accompanied by lead concentrations above the RDEC.

Arsenic concentrations exceeded the RDEC of 10 mg/kg below portions of buildings 27 through 31 and 54, and courtyards south of Building 32, along the western Site boundary, and east of the power house. Arsenic concentrations range up to 122 mg/kg, with the highest concentration identified at a depth of 12 to 13 ft bg at a location east of the main building. The arsenic is not known to be associated with former onsite manufacturing operations, and given its depth at some locations, may have resulted all or in part from activities such as filling prior to original Site development. Figures 29 through 31 provide a summary of the lateral extent of arsenic and occurrence above and below the seasonal high water table.

Lead was present in samples collected across the Site, but concentrations above the recommended RDEC of 400 mg/kg were detected only in samples from the upper 4 feet. The highest concentrations were found below Buildings 29L and 31E, and courtyard 31R. Lead also exceeded the recommended RDEC below the northern portion of Buildings 54 and 32R, and Courtyard 31L. The highest detected concentration of lead was 105,000 mg/kg. Figures 32 through 34 provide summary of the lateral extent of lead and occurrence above and below the seasonal high water table.

The pattern of antimony concentrations above the RDEC of 27 mg/kg was similar to that of lead, which was detected above the RDEC in the upper 4 feet near Building 31 and Courtyards 29L and 31R. Antimony was additionally detected above the RDEC in shallows soils on the eastern portion of Courtyard 27W. Mercury and silver were only detected above the RDEC in Courtyard 31E; the locations where these constituents (and cyanide) were detected were similar to the locations where lead was detected above the RDEC.

To assess compliance with the GBPMC, a number of samples were extracted by the SPLP method and analyzed for several of the metals and cyanide listed above (338 samples for one or more metals and 18 samples for cyanide). Based upon the SPLP results, concentrations of lead

and/or mercury exceeded the GBPMC in 4% and 1%, of the samples respectively, with the highest concentrations of SPLP lead and mercury at 5.4 mg/L (milligram per liter) and 0.12 mg/L, respectively. The concentrations of SPLP lead exceeded the GBPMC in samples from below former Buildings 29L, 31E and 54 and Courtyards 28R, 30L and 31R. The mercury exceedances were found in the northeastern portion of Courtyard 31R. No other metals were detected above the GBPMC.

Groundwater

While lead and mercury were the only metals detected above the GBPMC, mercury was not detected in the Site groundwater, and lead was detected only in isolated wells, typically where lead concentrations in soils exceeded applicable soil standards. Lead was not detected above the SWPC.

Arsenic, cadmium, copper and zinc were detected in groundwater above the SWPC (Plate 6 and Table 24). Arsenic was detected above the SWPC flowing onto the northeastern portion of the Site from off-site, beneath former Courtyard 32W, and west of former Building 29L and Courtyard 27W. Cadmium was detected above the SWPC at the northern end of former Building 54, beneath former Building 31E and east of Building 63. The only location in which silver was detected in groundwater was also beneath former Building 31E. Copper was detected above the SWPC during one sampling event (55 mg/l) beneath the northern portion of former Building 44. This detection of copper was an anomaly, as it was not detected above 2 mg/l in the following six sampling events. Finally, zinc was detected above the SWPC beneath the central portion of former Building 44, west of Courtyard 27W and east of Building 63. Zinc was detected at substantially higher concentrations in the well located east of Building 63, with peak concentrations of 26,200 ug/l. Levels of zinc and cadmium at this location have substantially declined since 2007.

While numerous metals were detected above the SWPC at discrete locations on the Site, compliance with the SWPC is demonstrated if the levels detected are below the SWPC at the point where the groundwater discharges to a receiving surface-water body (assuming

concentrations are not increasing over time). These "compliance points" are located off and to the west of the Site.

7.7 Pesticides

Soils

Pesticides were sampled in soils from: west of the former main building areas adjacent to the rail lines; former Building 34 loading docks; rail lines located east of Building 63; the structural fill used for the expansion of former Building 35; and, below the Building 35 slab. As shown on Figure 35 and Table 19, pesticides were detected in the Building 35 structural fill, but not in the soils below the underlying slab. Pesticides were additionally detected at trace concentrations near the rail lines west of former Building 29L. Pesticides were not detected above applicable RSR criteria.

Groundwater

Pesticides were sampled at two locations in groundwater beneath former Building 35 (B35-MW-1 and B35-MW-2). No pesticides were detected in groundwater.

8.0 FINDINGS

This Phase I - III ESA documents the investigation of the 17.9-acre vacant Site located on the west side of Bond Street and south of the western extension of Stewart Street in Bridgeport, Connecticut. This investigation was conducted in part to meet the requirements of RCSA §22a-449(c)-105(h). Investigations were completed using the CTDEEP September 2007/Revised December 2010 *Site Characterization Guidance Document* as technical guidance and in general accordance with the Site Investigation Work Plan and subsequent supplemental investigation work plans.

The investigations identified 34 AOCs that required investigation. Because several COCs were detected in soils throughout much of the Site, delineation to "ND" was not feasible in most circumstances. Concentrations above applicable RSR soil criteria were identified in nearly all of the generalized AOCs or the site-wide AOCs, though no particular release could be identified to account for these concentrations. For this reason, this report simply identifies the lateral and vertical extent of soil impacts throughout the Site, to the extent practicable. This report also evaluates impacts to groundwater from the COCs.

Site soils in many locations contain COC concentrations above the RDEC. COCs with the most widespread distribution in Site soils above the RDEC include arsenic, ETPH and PAHs. COCs associated with past manufacturing or other site operations were generally limited to the western, topographically lower former industrial area. PCBs detected above 1 mg/kg at three locations at the Site have been removed as part of an interim remedial action. Lead, mercury, PCE, ETPH, and benzo(a)anthracene were detected above the GBPMC in various AOCs.

PAHs, arsenic, cadmium, copper, zinc, and PCE were detected in groundwater above the published SWPC. While these constituents were detected above the SWPC at discrete locations on the Site, compliance with the SWPC is demonstrated if the levels detected are not above the SWPC at the point where the groundwater discharges to a receiving surface-water body (assuming concentrations are not increasing over time). These "compliance points" are located off and to the west of the Site. Vinyl chloride and PCE were detected at two locations on the western, downgradient portion of the Site above the RVC.

Site investigations have delineated the impacts of COCs at the Site. Remedial actions or other measures are necessary for compliance with the RSRs to be achieved in order for the Site to be used as the future location of a high school.

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LIST OF ACRONYMS

AE	Accessory Equipment
AST	aboveground storage tank
AOC	Area of Concern
CSM	Conceptual Site Model
C&I	Consumer & Industrial – Americas Operation
CA	Corrective Action
CFR	Code of Federal Regulations
COCs	Constituents of Concern
CTDEEP	Connecticut Department of Energy and Environmental Protection
1,2-DCE	Total-1,2-dichloroethene
t-1,2-DCE	trans-1,2-dichloroethene
1,2-DCA	1,2-dichloroethane
DIDP	Diisodecyl phthalate
DNAPLs	Dense Non Aqueous Phase Liquids
ECAF	Environmental Condition Assessment Form
EDM	Electro Discharge Machine
ELUR	Environmental Land Use Restriction
EP	Extraction Procedure
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ETPH	Extractable Total Petroleum Hydrocarbons
ft bg	feet below grade
GE	General Electric Company
HSWA	Hazardous and Solid Waste Amendments
LDF	Land Disposal Facility
LEP	Licensed Environmental Professional
LBG	Leggette, Brashears & Graham, Inc.
LNAPLs	Light Non Aqueous Phase Liquids
msl	mean sea level

LIST OF ACRONYMS
(continued)

MEK	Methyl Ethyl Ketone
MC	Methylene Chloride
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
NAPLs	Non Aqueous Phase Liquids
NPDES	National Pollutant Discharge Elimination System
PRA	Potential Release Area
RCSA	Regulations of Connecticut State Agencies
RSR	Remediation Standard Regulations
RCRA	Resource Conservation and Recovery Act
SDB	Sludge Drying Bed
SPLP	Synthetic Leaching Procedure
SWMU	Solid Waste Management Unit
SWMA	Solid Waste Management Area
SWPC	Surface Water Protection Criteria
PCE	Tetrachloroethylene
TCE	Trichloroethylene
TCA	1,1,1-Trichloroethane
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
ug/L	Microgram per liter
UST	Underground Storage Tank
VC	Vinyl Chloride
WWTP	Wastewater Treatment Plant
W&C	Wire and Cable