

DRAFT
Phase I
Environmental Site Assessment

Former Nu-Chrome Facility
161 Graham Road
Fall River, Massachusetts

August 20, 2014

Prepared for:

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ENGINEERING SUCCESS **TOGETHER**

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Table of Contents

1.0 Executive Summary	1
2.0 Introduction	6
2.1 General.....	6
2.2 Purpose and Scope.....	6
2.3 Site Visit Information	6
3.0 Project Description	7
3.1 Site Description	7
3.2 Current Operations	7
3.3 Building Description.....	7
3.4 Building Heating and Cooling System.....	7
3.5 Plans and Specifications.....	7
3.6 Utilities	7
3.7 Environmental Land Use Limitations	7
3.8 Purchase Price	8
3.9 User Provided Information.....	8
4.0 Site Characteristics.....	9
4.1 Surface Waters	9
4.2 Site Drainage/Sensitive Receptors.....	9
4.3 Topography	9
4.4 Soils and Geology.....	9
4.5 Groundwater.....	10
4.6 Wetlands	10
4.7 Floodplain Information	10
5.0 Adjacent and Surrounding Properties	11
6.0 Site History	12
6.1 Sanborn Fire Insurance Maps.....	12
6.2 Aerial Photographs	12
6.3 Topographic Maps.....	13
6.4 City Directories	13
6.5 Interviews.....	14
6.6 Previous Assessments or Investigations.....	14
6.7 Ownership History.....	18
6.8 Adjacent Properties.....	18
6.9 Historical Summary.....	19
7.0 Site and Reconnaissance.....	20
7.1 Nature of Operations and Current Tenants.....	20
7.2 Oil and Hazardous Materials (OHM) Storage and Usage	20
7.3 Petroleum and Chemical Storage Tanks	20

7.4 Environmental Permits.....	20
7.5 Hazardous Waste.....	20
7.6 Solid Waste and Wastewater.....	21
7.7 Site Housekeeping.....	21
7.8 Stained Soil, Stained Pavement, or Stressed Vegetation.....	21
7.9 Interior and Exterior Drainage Structure.....	22
7.10 Pools, Ponds, Pits or Lagoons.....	22
7.11 On-Site Water Supply and Observation Wells.....	22
7.12 Fill Material.....	22
7.13 Air Emissions.....	22
7.14 Indoor Air.....	22
7.15 Odors.....	22
7.16 Polychlorinated Biphenyls (PCBs).....	22
7.17 Asbestos Containing Material (ACM).....	23
7.18 Lead Based Paint (LBP).....	23
7.19 Lead in Drinking Water.....	23
7.20 Radon.....	23
7.21 Areas Not Inspected.....	23
8.0 Regulatory Databases and Records.....	24
8.1 United States Environmental Protection Agency (USEPA).....	26
8.2 Massachusetts Department of Energy and Environmental Protection (MassDEP).....	30
8.3 Local Regulatory Agency Interviews.....	31
9.0 Environmental Professional Certification.....	32
10.0 List of Acronyms.....	33

Figures

- 1 Site Locus
- 2 Site Plan

Appendices

- A Limitations
- B User Questionnaire
- C Environmental Data Resources Historical Report
- D Historical Environmental Reports
- E Photographic Documentation
- F Environmental Data Resources Database Report
- G Environmental Professional Qualifications

1. Executive Summary

This report documents findings from the Phase I Environmental Site Assessment (ESA) that BETA Group, Inc. (BETA) has prepared for the property located at 161 Graham Road in Fall River, Massachusetts (the Site, see Figure 1). The Fall River Assessor's Office identifies the Site as Parcel ID Z-03-0022 which consists of approximately four acres of land. Records indicate that the Site building was constructed in 1988.

The purpose of this Phase I Environmental Site Assessment was to assess current Site conditions and render an opinion as to the presence of Recognized Environmental Conditions (RECs) in connection with the property, within the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E1527-13. Recognized Environmental Conditions are defined in the American Society for Testing and Materials (ASTM) Standard E1527-13 as, "...the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimus conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." Any exceptions or deletions from the ASTM practice or Scope of Work are described in Section 2.0 of this Report. Refer to Section 10.0 for a list of acronyms and their definitions.

Site History

According to the historical resources reviewed for this Phase I ESA, the Site was undeveloped wooded land from as early as 1938 until the current Site building was constructed in 1988 for use as a metal plating/car restoration facility (formerly known as Nu-Chrome). Nu-Chrome occupied the Site building since it was constructed in 1988 until circa 2012. Nu-Chrome went into foreclosure in 2012 due to back taxes owed to the City of Fall River. Former operations at Nu-Chrome included the storage of hazardous materials and the generation of hazardous waste including metal cyanide plating waste as part of their daily operations. Chemical storage included trichloroethylene (TCE), 1,1,1-trichloroethane, cadmium, chromium, lead, cyanide, and sulfuric acid. Waste generated at the Site included (but was not limited to) corrosive waste water stored in tanks and vats, and sludge containing chromium, lead, cadmium, and cyanide compounds.

Site Reconnaissance

A vacant single-story building occupies the central portion of the Site. The building is constructed with a concrete slab foundation, steel frame with cinder block exterior walls, and a gable metal roof. The remainder of the Site includes minimal grassed areas on the northern and eastern sides of the Site building, a wooded area on the northern portion of the Site, gravel and asphalt-paved areas on the southern portion of the Site, and gravel/dirt with sparse vegetation on the western side of the Site building. A parking area is located on the southern portion of the Site.

BETA observed an air handling system and a cooling tower on the northern and western sides of the Site building. This equipment appears to be in poor condition. The air handler was used to keep cyanide and acid out of the air in the building during daily operations of Nu-Chrome. Records indicate that degreasing operations consisted of vapor degreasing, which utilized trichloroethylene (TCE) as the solvent. The cooling tower was used to cool the degreaser. Products that did not get fully cleaned during the vapor degreasing operation were hand cleaned with 1,1,1-

Trichloroethane (1,1,1-TCA). According to Mr. Gallagher, this equipment has not yet been inspected and/or cleaned.

BETA observed four former plating/dip tanks on the exterior of the Site building. These tanks appeared to be empty; however, some of the tanks had piles of waste sandblasting paper. These tanks were formerly used as part of daily operations of Nu-Chrome. Additionally, several areas of trash (including empty containers, sandpaper, and tires) are located on the northern and western sides of the Site.

Interior observations revealed several tanks/vats formerly used for electroplating that were cleaned by MassDEP and are waiting for off-site disposal. These tanks/vats formerly contained corrosive wastewater and sludge containing chromium, lead, cadmium, and cyanide compounds. BETA also observed a former paint booth inside the building. The inside of the paint booth has not yet been cleaned. Piles of office debris and small unlabeled containers (possibly degreasers) that appeared to be rusted were noted throughout the office area and former chemical storage areas. Plating racks inside the building that had been cleaned by MassDEP are waiting for off-site disposal. The Site contact stated that the duct work/ventilation system has not been cleaned and areas along the top of the duct work and steel beams have not been cleaned. Ductwork and steel beams throughout the interior of the building will need to be cleaned prior to removal.

Stained soil and stained pavement was noted at the Site. Additionally, we observed cracks in the asphalt pavement near the loading dock area. The cracks appeared to be seeping with an oily substance. The entire Site was wet and apparently has a high water table that keeps the grounds saturated.

BETA further observed many areas of stained concrete floor throughout the Site building. Staining appeared to be from chemical spills. BETA did not observe any significant cracks in the concrete floor.

Stressed vegetation is situated along the boundary of the western and southern portions of the Site. These areas appear which are close to the Site building foundation, are free of any vegetation (including weeds). According to the Site contact, the former Site tenant reportedly would wash down the floor of the manufacturing area and push the waste water out the back and side doors of the Site building. This is likely the cause of the lack of vegetation in these areas.

Since VOCs have been identified in groundwater at the Site, impacts to indoor air are possible.

Interviews

Mr. Chris Gallagher, the Site contact, stated that Nu-Chrome would wash down the floors and push the wastewater out of the north and west doors of the facility. Mr. Gallagher was informed that the soils in these two areas were contaminated with the wash down water. He stated that "hexachromium" (hexavalent chromium) was identified in soils on the northern side of the Site building and that mercury was identified in soils on the western side of the Site. He stated that the US EPA and the MassDEP worked together to investigate and remediate the Site after it was vacated. Mr. Gallagher also stated that much of the interior has been cleaned and assessed by US EPA and MassDEP; however, there are portions of the interior that have not been assessed/cleaned, including the duct work and areas on top of exposed beams.

Adjacent and Surrounding Properties

The Site is located in the Fall River Industrial Park. From as early as 1939 until at least 1966, surrounding properties appeared to be heavily wooded land, with the exception of a small residential-type building west of the Site. Industrial-type buildings were constructed northeast and north of the Site in the 1970s and 1980s. Properties north and south are currently wooded land. East of the Site is Graham Road, beyond which is Blount Fine Foods. West of the Site is mainly undeveloped land used as a parking lot and appears to be under new development. The properties southeast and southwest of the Site were developed with industrial-type buildings sometime between 1995 and 2006.

Previous Site Investigations

BETA reviewed the following reports for the Site:

- January 1993 “Environmental Site Assessment” by Nobis Engineering, Inc. (Nobis)
- August 5, 1994 “Limited Site Investigation” by Environmental Control Technologies, Inc. (ETC)
- October 27, 1994 “Subsurface Evaluation” by EnviroCorp Environmental Services (EnviroCorp)
- March 24, 1995 “Supplemental Subsurface Evaluation” by Enstrat – Strategic Environmental Services (Enstrat)
- October 22, 1995 “Immediate Response Action (IRA) Completion Report” by Adams Environmental Management, Inc. (Adams)
- July 10, 1998 “Response Action Outcome (RAO) Statement” by Enstrat

Section 6.6 contains a detailed review of these reports. The following summarizes the pertinent conditions found at the Site during these investigations:

- In 1993, Nobis observed a cooling tower that was used to cool TCE-containing degreaser on the western side of the Site building.
- Nobis and others observed an area of green-stained surficial soil north of the Site building and a drainage seep with an “oil-like” sheen on the southeast corner of the Site building.
- Nobis and others documented a history of poor management of hazardous materials and waste and numerous RCRA violations.
- Groundwater samples were collected from several wells (a total of 15 have been installed at the Site) around the Site twice in 1994, once in 1995, and once in 1998. Samples from nine of the 15 wells contained TCE (on at least one occasion) above the current RCGW-2 standard of 5 µg/L and one sample contained total petroleum hydrocarbons (TPH) above the current RCGW-2 standard of 5 mg/L (please note that TPH is an outdated sampling methodology).
- Historically, soil samples collected from around the Site have contained metals, TPH, and cyanide.

EPA Removal Action

BETA reviewed the following documents related to the U.S. Environmental Protection Agency’s (EPA’s) removal action taken at the Site in 2012 and 2013:

- August 8, 2012, “Request for a Removal Action at the Nu-Chrome Site – Action Memorandum” by EPA
- October 2012 “Removal Program/Preliminary Assessment/Site Investigation Report” by Weston Solutions, Inc. (Weston)

- November 29, 2012 “Request for Change in Scope of Response” by EPA
- December 2012 “Site Summary” by EPA
- Online summary by EPA

EPA initiated the removal action due to the presence of hazardous substances at the Site including tanks, vats, piping systems, and debris in the building and contaminated surficial soil outside the building. In August 2012, the Superfund Technical Assessment and Response Team III (START) collected samples of product, surface water, and surface soil and identified various concentrations of metals in many of the media sampled.

EPA on-line information indicates that from November 2012 to February 2013, remedial actions included solidifying the sludge inside the bulk containers for disposal, pressure washing to remove residual contamination and collecting the rinse-ate for disposal. Additionally, drums and other containers were consolidated, inventoried, and separated to appropriate waste streams for disposal. EPA excavated surface soils that were determined to contain lead and mercury. During preliminary screenings with an x-ray fluorescence spectrometry, EPA discovered elevated levels of lead, barium, and silver in particulate matters throughout the Site. The lead and silver apparently was generated during metal grinding and buffing operations and barium was generated from metal coating operations.

Database Search

The search of environmental databases identified the Site as a Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), US AIRS, Integrated Compliance Information System (ICIS) facility, Resource Conservation and Recovery Act (RCRA) NonGen facility and RCRA CESQG, EPA Watch List, RGA HWS, as a Facility Index System (FINDS), as a State Hazardous Waste Site (SHWS)/Release site, and HW Gen. The database search identified the Site in different listings: G.A. Rogers, Inc., Nu-Chrome, and Custom Chrome, LLC. All were located at 161 Graham Road. Section 8.0 contains detailed information on these listings which include the generation of hazardous waste, air emissions, EPA removal actions, and a MassDEP release.

The database search did not identify any properties in the Site vicinity that pose a threat of release to the Site.

Municipal Information

City of Fall River records did not provide any information beyond which was available in the previous reports and in the records maintained by MassDEP and EPA.

Data Gaps

The inability to interview a former Site owner or representative of the former Site tenant (Nu-Chrome) with respect to the past operations of the Site represents a data gap pursuant to is ASTM E1527-13. However, based on the findings of this assessment, this data gap is not considered significant and has not affected our ability to identify RECs at the Site.

BETA did not identify other data gaps that would affect our ability to identify RECs at the Site.

Phase I ESA Findings and Conclusions

BETA performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 for the property at 161 Graham Road in Fall River, Massachusetts. Any exceptions to, or deletions from, this practice are described in Section 2.2 of this report and Appendix A.

BETA has identified the following RECs at the Site:

- Past uses of the Site that included the storage of hazardous material and the generation of hazardous waste.
- Historic presence of TCE in groundwater.
- Possible impacts to indoor air from VOCs identified in groundwater.
- This historic presence of metals and cyanide in soil. Although EPA removed some contaminated soil from the Site, historic data indicates the potential for additional contaminated soil to exist at the Site.
- The observation of stained soil, areas of no vegetation near building doors, and a sheen on surface water emanating from the ground near the loading dock. The Site contact informed BETA that Nu-Chrome disposed of wastewater and wash water outside the doors of the building.
- Although, EPA conducted a removal action within the Site building, it does not appear that the building was cleaned to a level where it could be currently occupied.

Recommendations

Based on the identified RECs, BETA recommends conducting a subsurface investigation at the Site. This investigation should include the advancement of soil borings and the completion of groundwater monitoring wells. Soil and groundwater samples should be collected and submitted for laboratory analysis of petroleum, volatile organic compounds (VOCs), metals, and total cyanide. The soil borings should be advanced in exterior portions of the Site and through the floor within the Site building. A soil gas survey should also be completed within the footprint of the existing Site building to assess for the possibility of impact to indoor air.

BETA also recommends a hazardous building material investigation (HBMI) to identify building materials (equipment, building components, residue, dust, etc.) that may contain hazardous materials. The HBMI should include an assessment of building surfaces and the existing concrete floor to determine if hazardous materials and/or wastes are remaining on the building surfaces.

2. Introduction

2.1 General

At the request of the City of Fall River (the Client), BETA conducted an ASTM Phase I Environmental Site Assessment (ESA) of the property at 161 Graham Road in Fall River, Bristol County, Massachusetts (the Site, see Figure 1). The Site consists of an approximate four-acre parcel of land that is identified by the Fall River Assessor's Office as Parcel Z-03-0022. The Site is improved with an approximately 40,000-square foot, single-story industrial-style building that was constructed in 1988. Nu-Chrome Restoration Corporation (Nu-Chrome) most recently occupied the Site from 1988 until 2012 when it was closed due to foreclosure. Nu-Chrome was a metal restoration company that conducted re-chroming or plating of bumpers, pot metal, stainless steel, and aluminum. Nu-Chrome also restored and plated parts for boats, cars, and motorcycles.

2.2 Purpose and Scope

This report was prepared for the sole and exclusive use of the Client and is subject to and issued in connection with the Agreement and the provisions thereof. The ESA was conducted to identify Recognized Environmental Conditions (RECs) based on a review of available environmental information and observations of the Site and adjacent properties for overt evidence of a release or threat of release of oil or hazardous materials (OHM). The scope of services for this ESA included a federal and state environmental database search, local research, Site reconnaissance, and interviews with people knowledgeable about the Site. This ESA is subject to the terms of the Agreement between the Client and BETA and the Limitations included in Appendix A.

The scope of services for this report did not include the assessment of the following "additional issues" that are outside the scope of the ASTM Phase I ESA: asbestos-containing building materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historical resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, and mold.

2.3 Site Visit Information

Site Visit Conducted By:	Stephanie M. Lynch, Project Scientist
Date of Site Visit:	May 5, 2014
Site Representative:	Mr. Chris Gallagher, a representative of the City of Fall River
Weather:	60°F and cloudy

3. Project Description

3.1 Site Description

The Site consists of an approximate four-acre parcel of land located at 161 Graham Road. The Site is improved by an industrial-style building constructed in 1988 and has been vacant since 2012. The approximate geographic coordinates of the property are N 41° 44' 38" latitude and W 71° 6' 28" longitude.

3.2 Current Operations

Other than abandoned equipment, the Site building is vacant. It is configured for industrial/warehouse use with an office area.

3.3 Building Description

A vacant 40,200-square foot single-story industrial-style building improves the Site. The building is constructed of a steel frame, concrete slab-on-grade foundation, and a slightly-pitched metal roof. The interior of the building consists of open space with a mezzanine second-story area that was formerly used as office space.

3.4 Building Heating and Cooling System

The building was heated by a forced hot air heating system, supplied by natural gas. BETA did not encounter any records pertaining to other heating sources (i.e., fuel oil). BETA did not observe a cooling system at the Site.

3.5 Plans and Specifications

A copy of the City of Fall River Assessor's Map is provided as Figure 2.

3.6 Utilities

Mr. Chris Gallagher stated that Liberty Gas supplies natural gas to the Site. The City of Fall River provides municipal water and sewer services to the Site.

3.7 Environmental Land Use Restrictions

BETA did not encounter any evidence of an Activity and Use Limitation (AUL) or other restriction on the deed for the Site. Additionally, the City is not aware of any AULs or other institutional controls on the property.

3.8 Purchase Price

The City of Fall River involuntarily acquired the property through a Decree of Foreclosure; therefore, there was no purchase price in the most recent property transfer.

3.9 User Provided Information

Mr. Chris Gallagher, Projects Manager for the City of Fall River, and Mr. Matthew Thomas, legal counsel for the City of Fall River, provided BETA with information summarized in this report based on actual and specialized knowledge of the Site. The City informed BETA that this Phase I ESA was being conducted under the City's U.S. EPA Brownfields Assessment grant. Additional information provided by Mr. Gallagher is included in various sections of this report. Appendix B contains a copy of the questionnaire completed by the City.

4. Site Characteristics

4.1 Surface Water

BETA observed a drainage ditch in the eastern portion of the Site running parallel to Graham Road. Water in this ditch flows to the south into a wetland area. BETA also observed ponding on the south-abutting property. North Watuppa Pond is located approximately 1,500 feet east of the Site and the Taunton River (Mount Hope Bay) is located approximately 4,500 feet west of the Site. Refer to Figure 1.

4.2 Site Drainage/Sensitive Receptors

Stormwater at the Site enters a catch basin within the parking lot of the Site (southwest corner of building) or infiltrates the ground surface. Additionally, a surface water tank/pump chamber is located off of the east corner of the loading dock area (near catch basin). This chamber collects runoff from the south-abutting wetlands and discharges to a drainage ditch on the eastern portion of the Site that runs along Graham Road in a north-south direction. This drainage ditch then discharges to the south-abutting wetland area. The “flow” of site drainage is circular and appears to perpetuate the saturation of the asphalt and dirt/grassed area on the Site. Poor site drainage continues to be a problem as Mr. Gallagher stated that with heavy rain, the water level rises two to three feet high in the loading dock area.

Mr. Byron Holmes, the City Engineer, stated that Nu-Chrome sits at a point on Graham Road where the swale to the east is flat (the swale currently has standing water). Mr. Holmes stated that there is a 2” pipe actively draining into this swale from the Site and that this pipe may be coming from the catch basin at the loading dock.

4.3 Topography

The Site is located at an elevation of approximately 215 feet above the 1929 National Geodetic Vertical Datum. The Site is relatively flat but the vicinity slopes downward to the east and west.

4.4 Soils and Geology

Soils

According to the United States Department of Agriculture Soil Conservation Service (SCS) Soil Map, soils at the Site consist of Ridgebury and Woodbridge mapping units. Ridgebury soils consist of fine sandy loam, with 0 to 3 percent slopes, and are extremely stony. Woodbridge fine sandy loam, with 0 to 8 percent slopes, and is extremely stony. Parent material for these soils consist of friable coarse-loamy eolian deposits over dense coarse-loamy lodgment till derived from granite and gneiss. Ridgebury soils are poorly drained and have a low available water capacity. Woodbridge soils are moderately well drained and have a low available water capacity.

Geology

Bedrock outcrops were not observed at or in the vicinity of the Site. According to the Bedrock Geologic Map of Massachusetts (1985), bedrock beneath the Site consists of the Fall River Granite. Soil borings previously advanced at the Site identified silty, fine to medium sand with cobbles throughout the property. Bedrock was not encountered to a depth of ten feet below grade.

4.5 Groundwater

According to the MassGIS on-line Priority Resource Map, the Site is not located within a Surface Water Supply Protection Zone. The Site is not located within a Public Water Supply Watershed, a Zone II, or an Interim Water Protection Area (IWPA). Therefore, groundwater at the Site is classified as RCGW-2. Based on local topography and surface water bodies and previous investigations, groundwater at the Site is divided and flows in northeast and southwest direction. Groundwater at properties west of the Site is inferred to flow in a southwesterly direction toward Mount Hope Bay. Additionally, based on previous subsurface investigations at the Site, groundwater has been encountered at depths from three to five feet below grade.

4.6 Wetlands

BETA observed suspect wetlands on the northern portion of the Site. According to MassGIS Priority Resource Map, wetlands are depicted on this portion of the Site. Additionally, this map indicates that potential vernal pools are located on the northern portion of the Site and on the south-abutting property. Additionally, BETA observed a wetland area abutting the Site to the south. We observed water pooling on this property during our reconnaissance. The Site contact stated that there is a high water table at the Site and that any amount of rain results in pooling in the wetland area. He stated that the sump pump in the loading dock on the southwest corner of the building (on-Site) runs continually to keep up with the high water table and rain water runoff.

4.7 Floodplain Information

According to the Federal Emergency Management Association (FEMA) Flood Insurance Rate Map (FIRM) Number 25005C 0351F dated July 7, 2009, the Site is located in Zone X, which has been determined to be an area outside the 0.2% annual chance floodplain.

5. Adjacent and Surrounding Properties

The property is located in the Fall River Industrial Park, an industrial/commercial area of Fall River. Information concerning surrounding properties was compiled from the Site reconnaissance, as summarized below:

Direction	Adjacent Properties	Surrounding Properties
North	Complete Recycling Solutions (1075 Airport Road)/Sarmiento Imports & Exports (991 Airport Road)	Airport Road, beyond which is Republic Services Inc. (1080 Airport Road)
Northeast	Vacant industrial-type building (1145 Airport Road)	Atlantic Millwork
South	Fall River Manufacturing (540 Currant Road)	Currant Road, beyond which is Xemplar Pharmaceuticals/American Flat Glass
Southeast	Graham Road	Blount Fine Foods (630 Currant Road)
East	Graham Road	Undeveloped land associated with Blount Fine Foods (630 Currant Road)
West	Two Square Science LLC (95 Robb Way) and property currently being developed	Unimproved land, beyond which is PDK (132 Sykes Road)

6. Site History

6.1 Sanborn Fire Insurance Maps

Sanborn maps identify prior Site uses of real property for many cities and towns in the United States. The maps were originally created to assist insurance underwriters in understanding the potential fire risk of structures requiring insurance; however, they are also useful for determining the previous uses of a property. Sanborn maps often contain information relating to uses of individual structures, location of certain fuel storage tanks, chemical storage tanks, or both, and storage of other potentially toxic substances. Sanborn maps begin their coverage in 1867 and continue through the present. BETA requested copies of Sanborn maps for the Site from Environmental Data Resources, Inc. (EDR). However, EDR provided a letter indicating that the Site is not covered by these maps. A copy of the No Coverage Letter is included in Appendix C.

6.2 Aerial Photographs

BETA requested copies of historical aerial photographs for the Site from EDR. EDR provided copies of 1938, 1941, 1961, 1966, 1974, 1977, 1980, 1991, 1995, 2006, 2008, 2010, and 2012 aerial photographs. A copy of the EDR aerial photograph report is included in Appendix C. The following summarizes our review of these aerial photographs:

- **1934, 1941, 1961, and 1966:** These photographs depict the Site as unimproved and covered with dense vegetation. Additionally, densely wooded land appears north, south, and east of the Site. A small roadway appears west of the Site, beyond which appears to be cleared land improved with one small residential-type building.
- **1974 and 1977:** These photographs depict the Site and vicinity as similar to the 1966 photograph; however, a roadway appears east of the Site, beyond which is one medium-sized building to the northeast.
- **1980:** This photograph depicts the Site and vicinity as similar to the 1977 photograph; however, a medium-sized building appears north of the Site.
- **1991 and 1995:** These photographs depict the Site as improved with a building similar in footprint to the current Site building. Additionally, industrial-type buildings appear to improve the properties north, northeast, northwest of the Site and appear similar to the present day buildings. A roadway appears east of the Site. A small building appears west of the Site. Unimproved, vegetated land appears south, southeast, and southwest of the Site.
- **2006:** This photograph depicts the Site and vicinity as similar to the 1995 photograph. However, industrial-type buildings appear southeast and further south of the Site.
- **2008-2012:** These photographs depict the Site and vicinity as BETA observed them to be during our recent Site reconnaissance.

6.3 Topographic Maps

BETA requested copies of historical United States Geologic Survey (USGS) topographic maps for the Site from EDR. EDR provided 1888, 1893, 1944, 1951, 1963, 1978, and 1985 USGS Topographic Maps. A copy of the topographic map report is included in Appendix C. The following summarizes our review of these maps.

- **1888 and 1893** – Based on the scale of these maps, the Site and vicinity are too small to depict structures. However, it appears as though the Site and vicinity are unimproved and in an unpopulated area.
- **1944 and 1951** – Based on the shading of this map, the Site and vicinity are located in a densely wooded/vegetated area. An unpaved roadway (trail) appears west of the Site, beyond which is a small building. Wetlands are depicted north and east of the Site.
- **1963** – This map depicts the Site as unimproved. The surrounding area appears to be improved and depicted as wetland areas. An unpaved roadway (identified as Westline Trail) appears west of the Site, beyond which is a small building.
- **1978** – Based on the shading of this map, the Site is located in a densely wooded/vegetated area. Properties north, south, and east of the Site are unimproved. A medium-sized building appears northeast of the Site. Westline Trail appears west of the Site, beyond which is a small building.
- **1985** – This map depicts the Site and vicinity as similar to the 1978 map; however, a new building appears north of the Site. Medium-sized buildings appear northeast and northwest of the Site along a north adjoining roadway.

6.4 City Directories

Historical City directories and Cross Reference directories are often useful for obtaining historical tenants for a property. City directories provide tenant listings, by address, for every year covered by the directory service. BETA requested City directories for the Site from EDR. EDR searched copies of 1975, 1980, 1985, 1990, 1994, 1999, 2003, 2008, and 2013 City directories. EDR also searched for the Site address in the 1938, 1941, 1947, 1950, 1963, 1965, and 1970 directories; however, these directories did not have a listing for Graham Road. A copy of the EDR City Directory Abstract is included in Appendix C. The following summarizes these directories.

Year	Site Address	Adjoining Properties along Currant Road and Airport Road
1975	Site not listed	54 Graham Road: Polyform Products
1980	Site not listed	54 Graham Road: Polyform Products
1985	Site not listed	54 Graham Road: Polyform Products (paper converters)
1990	Vacant	54 Graham Road: Hollingsworth & Vose Co. (polyform division)
1994	G.A. Rogers, Inc. (home decorator accessories)/Nu-Chrome Corp (car restoration)	54 Graham Road: Hollingsworth & Vose Co. (paper mfg)
1999	G.A. Rogers, Inc./Nu-Chrome Corporation Antique Restoration	54 Graham Road: not listed
2003	Nu-Chrome Corp/Rogers Co.	540 Currant Road: Fall River Mfg Co./Standard Nut & Bolt Co./Thomas Gordon

		630 Currant Road: Mass Transfer Systems/MTS/North American Filtration/Sanborn Technologies/Waterlink Inc.
2008	G.A. Rogers, Inc./Nu-Chrome Restoration	540 Currant Road: Standard Nut & Bolt Inc. 630 Currant Road: Blount Seafood Corp.
2013	Site not listed	1075 Airport Road: Complete Recycling Solutions 1145 Airport Road: vacant building 95 Robb Way: Two Square Science LLC (mfg and mechanical engineers) 540 Currant Road: Fall River Manufacturing Co. Inc. 630 Currant Road: Blount Seafood Corp.

6.5 Interviews

BETA interviewed Mr. Chris Gallagher, a representative of the City of Fall River. Mr. Gallagher informed BETA that the building was constructed in 1988. He stated that the building had been used by Nu-Chrome since it was constructed. He further stated that Nu-Chrome owed taxes to the City of Fall River and did not pay. The building was then put into foreclosure and is now owned by the City of Fall River. Nu-Chrome vacated the building in 2012 and was a metal plating facility involved with the restoration of automobile parts. Operations included sandblasting, metal grinding, and polishing. He further stated that Nu-Chrome would wash down the floors and push the wastewater out of the north and west doors of the facility. Mr. Gallagher was informed that the soils in these two areas were contaminated with the wash down water. He stated that “hexachromium” (hexavalent chromium) was identified in soils on the northern side of the Site building and that mercury was identified in soils on the western side of the Site. He also stated that the US EPA and the MassDEP worked together to investigate and remediate the Site after it was vacated. Mr. Gallagher indicated that much of the interior has been cleaned and assessed by US EPA and MassDEP; however, there are portions of the interior that have not been assessed/cleaned, including the duct work and areas on top of exposed beams.

6.6 Previous Assessments or Investigations

BETA identified previous assessments covering the Site during the research for this Phase I ESA. The following is a summary of reports BETA encountered from the MassDEP and US EPA websites. Appendix D contains copies of pertinent sections of these reports.

January 1993, “Environmental Site Assessment – Phase I report”, by Nobis Engineering Inc. (Nobis)

At the time of Nobis’ inspection in 1993, interior observations of the Site building included three separate areas of operations. At that time, G.A. Rogers, Inc. (a metals plating facility) occupied the Site. The building was used for shipping, receiving, manufacturing, and an office area. Manufacturing operations included “electroplating, degreasing, and electrostatic powder coating operations.” Nobis stated that electroplating consisted of plating tanks that used various metal cyanides. Plating-water treatment consisted of a closed loop ion exchange system. Nobis indicated that hazardous waste (metal cyanide sludge) was generated and was contained in 55-gallon drums. The Site owner at that time indicated that there was no discharge from the plating operations and that sludge from the treatment system was the only hazardous waste generated.

Nobis stated that degreasing consisted of vapor degreasing using TCE as a solvent. Nobis observed a cooling tower on the west side of the Site building that was used to cool the degreaser. The Site owner stated that waste generated from degreasing operations consisted of still bottoms from the degreaser. He further stated that this generated approximately four 55-gallon drums per year.

Nobis indicated that electrostatic powder coating operations “involved spraying the product with epoxy powder coating which adhered by an electrical charge.” Further, the products were cured inside an oven. Waste generated from these activities included “nuisance dust from the spraying operations.”

Other activities Nobis observed included: air scrubbers (to keep cyanide and acid out of the air inside the building); Freon dryer for parts drying; plating rinse tanks; chemical plating laboratory; cyanide storage room; nitric acid tank used to strip plating racks; paint booth and dip tank; a welding area; and hydraulic press shop.

Exterior observations included paved and landscaped areas. The topography was relatively flat with “wet areas on or abutting the site to the north and to the south.” Nobis observed a surface drainage seep with an oil-like sheen on the southeast corner of the Site building. They further observed green surficial soil staining on the north side of the building, which was adjacent to the chemical storage room. Nobis also identified three existing monitoring wells, which the Site owner indicated were installed approximately three years ago and did not reveal contamination in groundwater.

Nobis concluded “there was evidence of the potential presence of hazardous waste release to the site within the context of Massachusetts General Laws Chapter 21E and the Massachusetts Contingency Plan (MCP).” Nobis recommended that a subsurface investigation should be conducted to determine the condition of soil and groundwater.

August 5, 1994 “Limited Site Investigation” report, by Environmental Control Technologies, Inc. (ETC)

ETC oversaw the advancement of three soil borings and the installation of three monitoring wells. ETC collected soil and groundwater samples for laboratory analysis of volatile organic compounds (VOCs), total cyanide, and total RCRA 8 metals. Results identified TPH constituents in three of the soil samples that ranged from 25 to 29 mg/kg. Additionally, barium and lead were detected in soil above laboratory reporting limits ranging from 35 to 49 mg/kg. TCE was identified in groundwater samples at concentrations up to 42 µg/L. ETC’s report did not include recommendations.

October 27, 1994 “Subsurface Evaluation” report, by EnviroCorp Environmental Services (EnviroCorp)

EnviroCorp conducted a subsurface investigation at the Site that included the installation of three new monitoring wells. Activities included the collection and laboratory analysis of soil samples for VOCs, total cyanide, and total RCRA 8 metals. Groundwater samples were collected from all six monitoring wells and analyzed for VOCs, TPH, total cyanide, specific conductance, and soluble RCRA 8 metals. EnviroCorp also collected a surface soil sample from the green stained area.

EnviroCorp identified VOCs in groundwater samples from four of the monitoring wells. TCE was identified in EC-1 (52 µg/L), EC-2 (36 µg/L), EC-3 (290 µg/L), and MW-2 (45 µg/L) at concentrations above the Massachusetts Contingency Plan (MCP) Reportable Concentration for RCGW-1 of 5 µg/L. Additionally, TPH were detected in samples from EC-1 (21 mg/l) and identified as #2 fuel oil/diesel fuel. Total cyanide was detected in EC-1 at a concentration of 0.017 mg/l, which exceeded the RCGW-1 of 0.01 mg/L. Analytical results of soil collected from the stained area (northern corner of the building) identified arsenic at 2.3 ppb, barium at 15 ppb, chromium at 6.5

ppb, lead at 16 ppb, and total cyanide at 2.3 ppb. None of these concentrations exceeded the RCS-1 reportable concentration. Iron was identified at 9,000 ppb; however, there was no standard for Iron at that time.

EnviroCorp's investigation at that time identified a private water supply well at a west-abutting private residence to be within 500 feet of the Site. Therefore, groundwater at the Site was classified as Reportable Concentration Groundwater (RCGW-1) at that time.

During this investigation, groundwater was determined to flow in a northeasterly direction on the northeastern portion of the Site and in a southwesterly direction on the southwestern portion of the Site. Groundwater was encountered at depths ranging from 1.12 to 5.16 feet below grade. Soils at the Site were identified as silty sand and gravel, brown, silty fine sand with some medium to coarse sand and gravel. Rock fragments were encountered at 9.4 feet below grade.

EnviroCorp's report did not include recommendations.

March 24, 1995 "Supplemental Subsurface Evaluation" report, Enstrat - Strategic Environmental Services (Enstrat; formerly known as EnviroCorp)

Enstrat conducted an investigation that included the advancement of fourteen soil borings and the installation of five monitoring wells. Additionally, Enstrat collected surface soil samples from the northeast corner of the building for analysis of free cyanide and TPH.

Soil samples were collected and analyzed for VOCs, TPH and free cyanide. None were found to contain these constituents. TCE was detected in groundwater samples ranging from 11 to 170 ug/L, which exceeded the RCGW-1 standard of 5 ug/L. This report did not include recommendations.

October 22, 1995 "Immediate Response Action (IRA) Completion Statement" report, by Adams Environmental Management, Inc. (Adams)

Adams conducted an investigation and reviewed previous investigations of the Site from MassDEP records. Investigations lead to the discovery of a release of VOCs, which triggered MassDEP to issue Release Tracking Number (RTN) 4-10963 to the Site. Adams noted that "the highest concentration of TCE (290 µg/L) was discovered in EC-3 during sampling that took place in September 1994...the well was re-sampled in March 1995 and yielded a TCE concentration of 170 µg/L indicating a decrease in concentration over time." Adams stated that contamination in groundwater was mainly in a small area of the northeast corner of the building and in the southwest portion of the Site. Previous groundwater flow elevation measurements determined a southwesterly groundwater flow direction.

In April 1995, a drinking water sample was collected from the faucet of the west abutting Pacheco Farm property (at 1207 Airport Road). The sample was analyzed for VOCs and total cyanide and no detectable concentrations were identified. In November 1995, the drinking water well was decommissioned and the residence was connected to the municipal drinking water system as part of the IRA actions for the Site.

Adams indicated that free cyanide and TPH in soils were below the S-1 Soil Standards and no additional response actions were required. Adams stated that the potential impact of TCE was assessed during the sampling of the wells and that based on the drinking water well sample, "onsite contamination, therefore, has not currently impacted this well, nor will it ever be expected to impact the well in the future after the connection to municipal water (and coincident disconnection of the private well) takes place on November 8, 1995."

Based on the close proximity of a private drinking water well, groundwater at the Site had been compared to RCGW-1 standards. Discussions with appropriate parties lead to the decommissioning of the private well and connection of Pacheco Farm to the municipal drinking water system. This allowed groundwater at the Site to be re-classified as RCGW-2.

Adams stated that concentrations of TPH were below the RCGW-2 standards and have decreased over time and the source of contamination (historical spills resulting from slipshod operations practices) no longer exists. Adams further stated that microbial and chemical degradation processes are reducing onsite concentrations. Adams opinion concluded “the costs associated with reducing trichloroethene concentrations to background levels are not justified given that the level of Risk of Harm to human health, safety, public welfare and the environment associated with site appear minimal.” Based on the previous investigations, Adams did not recommend further responses for groundwater at the Site.

Adam’s report included an appendix that described the chemicals stored on-Site as part of G.A. Roger’s plating operations. Chemicals stored in processing tanks included alkaline clean (800 gallons), electroclean (200 gallons), acid clean (100 gallons), copper cyanide strike (200 gallons), copper cyanide (1,200 gallons), nickel (1,700 gallons), chrome (500 gallons), silver (200 gallons), brass (1,500 gallons), and electroblack (1,200 gallons). A nickel plating tank was “severely damaged from overheating and needs to be replaced; repairs are necessary on both the brass and electroblack plating tanks due to overheating; and both the acid and cyanide scrubber systems are damaged and need to be repaired.” An attached letter indicated that the plating line was designed to place a brass finish on either steel or zinc diecast components.

July 10, 1998 “Response Action Outcome (RAO) Statement” report, by Enstrat

Enstrat conducted an investigation and reviewed previous investigations of the Site. As part of an Administrative Consent Order (ACO) issued by MassDEP in April 1998, Enstrat conducted additional activities at the Site and prepared the RAO report. The report indicated that sometime in 1997, Adams decommissioned previous on-Site wells and installed five new wells at that time. In 1998, Enstrat collected groundwater samples from six wells located on-Site and submitted them for laboratory analysis of VOCs by EPA Method 8260. Two of the samples were analyzed for cyanide; however, results of cyanide were below the GW-3 standard. Concentrations of TCE and cis-1,2-dichloroethylene in groundwater from three of the wells were below the GW-2/GW-3 standards.

Enstrat collected surface water samples from the wetland area and from the drainage swales south and east of the Site. Samples were analyzed for VOCs and total cyanide. Analytical results did not identify the presence of VOCs or cyanide from the wetlands southeast of the Site or from the down-stream portion of the drainage swale sample point. TCE was detected in the drainage swale near the sump discharge point at a concentration of 1.4 ug/L; however, the concentration was well below the EPA Ambient Water Quality Criteria.

During this investigation, groundwater was determined to flow in a northeasterly direction and to discharge toward the drainage swale along the eastern side of the Site.

Enstrat stated that the TCE detected in groundwater was below the MCP Method 1 Standards. Groundwater at the Site discharges to the wetland area on the southeast side of the Site and to the drainage swale east of the site. The maximum TCE detected in groundwater was identified at 290 ug/L (in September 1994). Enstrat concluded “based on the concentration detected, the apparent rapid dilution and attenuation of the compound as indicated by the downstream sample results, and the apparent condition of the wetlands biota in the immediate vicinity of the sump



discharge, significant exposures are not present and no significant harm exists or is expected in the foreseeable future.”

No remedial actions at the Site were determined to be necessary based on the analytical results dating from 1994 to 1998 based on the MCP Method 1 Standards. Enstrat stated “existing Best Management Practices for VOCs in storm water run-off include a man-made drainage swale to expose the contaminants to air and sunlight...therefore, the existing passive treatment system at the Site requires no operations and maintenance, no additional cost, and is effective in reducing concentrations in groundwater and storm water run-off to background conditions.

Enstrat concluded “the source of the releases at the Site have been eliminated or controlled to the extent feasible...concentrations of solvent-related contaminants in soil and groundwater were well below the MCP Method 1 Standards.” Enstrat stated that a Class B-1 RAO would be applicable to RTN 4-10963 and a permanent solution has been achieved.

6.7 Ownership History

According to the City of Fall River Assessor’s records, the Site has been owned by the Nu-Chrome Inc. since July 12, 1996. The following table summarizes a chain of title card for Site ownership back to 1927.

Owner	Date of Purchase	Document No.
Nu-Chrome Inc.	July 12, 1996	880
F.R./Graham Rd Limited Part.	January 3, 1989	115
Joseph Winn Jr. et al	April 22, 1988	754
Bristol Craft Manuf. Inc.	December 30, 1985	1751
Greater F. R. Dev. Auth.	October 5, 1982	876
Barbara Nedderman	August 22, 1978	841
Harry Wilkinson et al	Unknown	78045
Elizabeth Wilkinson	March 23, 1927	1506

6.8 Adjacent Properties

The Site is located in the Fall River Industrial Park. From as early as 1939 until at least 1966, surrounding properties appeared to be heavily wooded land, with the exception of a small residential-type building west of the site. Industrial-type buildings were constructed northeast and north of the Site sometime in the 1970s and 1980s. Properties north and south are currently wooded land. East of the Site is Graham Road, beyond which is Blount Fine Foods. West of the Site is mainly undeveloped land used as a parking lot and appears to be under new development. The properties southeast and southwest of the Site were developed with industrial- and commercial-type buildings sometime between 1995 and 2006.

6.9 Historical Summary

According to the historical resources reviewed for this Phase I ESA, the Site was undeveloped wooded land from as early as 1938 until the current Site building was constructed in 1988 for use as a metal plating/car restoration facility (formerly known as Nu-Chrome). Nu-Chrome occupied the Site building since it was constructed in 1988 until circa 2012. Nu-Chrome went into foreclosure in 2012 due to back taxes owed to the City of Fall River. Former operations at Nu-Chrome included the storage of hazardous materials and the generation of hazardous waste including the generation of metal cyanide plating waste as part of their daily operations. Chemical storage included TCE, 1,1,1-trichloroethane, cadmium, chromium, lead, cyanide, and sulfuric acid. Waste generated at the Site included (but was not limited to) corrosive waste water stored in tanks and vats, and sludge containing chromium, lead, cadmium, and cyanide compounds.

7. Site Reconnaissance

7.1 Nature of Operations & Current Tenants

At the time of our inspection, the Site was improved with a vacant single-story industrial-type building. Appendix E contains photographic documentation of our Site inspection. Mr. Gallagher informed BETA that the building was formerly occupied by Nu-Chrome, a metal plating facility, prior to 2012.

BETA observed an air handling system and a cooling tower on the northern and western sides of the Site building. This equipment appears to be in poor condition. The air handler was used to keep cyanide and acid out of the air in the building during daily operations of Nu-Chrome. Records indicate that degreasing operations consisted of vapor degreasing which utilized trichloroethylene (TCE) as the solvent. The cooling tower was used to cool the degreaser. Products that did not get fully cleaned from the vapor degreasing operation were hand cleaned with 1,1,1-TCA. According to Mr. Gallagher, this equipment has not yet been inspected and/or cleaned.

BETA observed four former plating/dip tanks on the exterior of the Site building. These tanks appeared to be empty; however, some of the tanks had piles of waste sandblasting paper. These tanks were formerly used as part of daily operations of Nu-Chrome. Additionally, several areas of trash (including empty containers, sandpaper, and tires) are located on the northern and western sides of the Site.

7.2 Oil and Hazardous Materials (OHM) Storage and Usage

BETA did not observe active OHM storage or usage at the Site.

7.3 Petroleum and Chemical Storage Tanks

BETA did not observe evidence of underground storage tanks, such as vent or fill pipes, at the Site. Former chemical storage and processing tanks were noted at the facility.

7.4 Environmental Permits

BETA did not encounter current environmental permits during the research for this Phase I ESA.

7.5 Hazardous Waste

BETA did not observe the active generation or storage of hazardous waste at the Site.

7.6 Solid Waste and Wastewater

Solid Waste

Solid waste is not currently generated at the Site. However, BETA observed a trash and debris throughout the wooded areas of the Site. Additionally, we observed tires and some large equipment outside of the Site building.

Sanitary Sewage

Sanitary sewage is not currently generated at the Site; however, the building is connected to the municipal sewer system.

Liquid Discharges

BETA did not observe liquid discharges at the Site.

7.7 Site Housekeeping

The Site building is currently vacant. Interior observations revealed several tanks/vats formerly used for electroplating that were cleaned by MassDEP and are waiting for off-site disposal. These tanks/vats formerly contained corrosive waste water and sludge containing chromium, lead, cadmium, and cyanide compounds. BETA also observed a former paint booth inside the building. The inside of the paint booth has not yet been cleaned. We observed piles of office debris and small unlabeled containers (possibly degreasers) that appeared to be rusted throughout the office area and former chemical storage areas. We also observe plating racks inside the building that had been cleaned by MassDEP and are waiting for off-site disposal. The Site contact stated that the duct work/ventilation system has not been cleaned and areas along the top of the duct work and steel beams have not been cleaned. Ductwork and steel beams throughout the interior of the building will need to be cleaned prior to reoccupancy.

7.8 Stained Soil, Stained Pavement or Stressed Vegetation

BETA observed stained soil and stained pavement at the Site. Additionally, we observed cracks in the asphalt paving near the loading dock area. This crack appeared to be seeping with an oily substance. The entire Site was wet and apparently has a high water table that keeps the grounds saturated.

BETA observed many areas of staining on the concrete floor throughout the Site building. Staining appeared to be from chemical spills associated with operations of the former Nu-Chrome. BETA did not observe cracks in the concrete floor.

BETA noted stressed vegetation along the boundary at the western and southern portions of the Site. These areas are close to the Site building foundation and appear to be free of any vegetation (including weeds). According to the Site contact, the former Site tenant reportedly would wash down the floor of the manufacturing area and push the waste water out the back and side doors of the Site building; thus likely the cause of no vegetation in these areas. Dense vegetation improves the northern and eastern most portions of the Site. These vegetated areas do not appear to be stressed.

7.9 Interior and Exterior Drainage Structures

BETA did not observe interior drainage structures at the Site. We observed a drainage ditch along the eastern side of the Site flowing in a north-south direction toward a wetland area. Additionally, Mr. Gallagher informed BETA that a sump pump is located adjacent to the loading dock area of the Site building (southwest corner). This sump was installed due to high water table and ponding during heavy rain. Mr. Gallagher stated that the sump pump is constantly running and that it discharges to the drainage swale, which then discharges to the wetlands. The wetlands normally contain standing water, which then drains back onto the Site. BETA observed the interior of the concrete sump during our investigation and it appeared to be free of OHM.

BETA further observed one catch basin located in the paved parking area of the Site, near the loading dock (southwest corner of Site building).

7.10 Pools, Ponds, Pits or Lagoons

BETA did not observe any man-made pools, ponds, pits or lagoons at the Site.

7.11 On-Site Water Supply and Observation Wells

Fall River municipal water serves the Site and vicinity. BETA observed four monitoring wells at the Site. We are unaware of the date that these wells were installed at the Site. Additionally, based on their condition, they do not appear to be serviceable. Please refer to Figure 2 for a location of these wells.

7.12 Fill Material

BETA did not observe evidence of urban fill at the Site.

7.13 Air Emissions

BETA did not observe indications of significant air emissions at the Site.

7.14 Indoor Air

Since VOCs have been identified in groundwater at the Site (see Section 6.6), impacts to indoor air are possible. BETA did not conduct any testing of the indoor air as part of this Phase I ESA.

7.15 Odors

BETA did not notice chemical or other odors during the Site reconnaissance.

7.16 Polychlorinated Biphenyls (PCBs)

BETA observed a pad-mounted transformer adjacent to the northwest corner of the Site building. Based on the age of the Site building, this transformer does not likely contain PCBs.

7.17 Asbestos Containing Materials (ACM)

Since the Site building was built after 1978, it is unlikely that building materials would be classified as ACM. A comprehensive ACM inspection was beyond the scope of this ESA. BETA did not observe suspect ACM during our reconnaissance.

7.18 Lead Based Paint (LBP)

Since the Site building was built after 1978, it is unlikely that LBP is present. A comprehensive LBP inspection was beyond the scope of this ESA. BETA did not observe flaking/peeling paint inside the Site building.

7.19 Lead in Drinking Water

Testing for lead in drinking water was beyond the scope of this ESA.

7.20 Radon

Measurement of potential radon contamination was beyond the scope of this ESA. The U.S. EPA publishes a map of the United States on which each of the 3,141 counties in the U.S. is assigned to one of three zones based on radon potential. Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. According to the EPA map, the Radon Zone for Bristol County is 2. Zone 2 is defined as having indoor average radon levels of 2 to 4 picocuries per liter (pCi/L). EPA recommends action at concentrations of 4 pCi/L or higher in indoor air. Additional information on radon in indoor air can be found on the US EPA website at <http://www.epa.gov/radon/states/massachusetts.html>.

7.21 Areas Not Inspected

BETA inspected all accessible interior and exterior portions of the Site building.

8.0 Regulatory Review

The EDR report gives a listing of sites identified on select federal and state standard source environmental databases within the approximate search radii specified by ASTM Standard Practice for Environmental Site Assessments E1527-13. BETA reviewed each environmental database on a record-by-record basis to determine if certain sites identified in the EDR report represent environmental liability to the Site. A copy of EDR regulatory database report is included in Appendix E. The following table lists the number of sites identified by the EDR report.

FEDERAL, STATE, AND TRIBAL AGENCY DATABASE FINDINGS			
REGULATORY DATABASE	SEARCH DISTANCE	TARGET SITE	OFF-SITE LISTINGS
Federal National Priority List (NPL) Facilities	1 Mile	No	0
Federal Delisted NPL Facilities	½-Mile	No	0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Facilities	½-Mile	Yes	1
Federal CERCLIS No Further Remedial Action Planned (NFRAP) Facilities	½-Mile	No	0
Federal Resource Conservation and Recovery Act (RCRA) Corrective Action (CORRACTS) Facilities	1 Mile	No	0
Federal RCRA Treatment, Storage, and Disposal (TSD) Facilities	½-Mile	No	0
Federal RCRA Generator Facilities	Site and Adjoining	Yes	0
Federal Brownfield Facilities	½-Mile	No	0
Federal Institutional Controls/Engineering Controls (IC/EC) Registries	½-Mile	No	0
Federal Emergency Response Notification System (ERNS) Facility	Site Only	No	-
Federal Facility Index System (FINDS) Facility	Site Only	Yes	-
State Hazardous Waste Sites (SHWS)/Tribal Equivalent CERCLIS Facilities	1 Mile	Yes	11
State Release Facilities	Site Only	Yes	-
State and Tribal Solid Waste Landfill (SWL) Facilities	½-Mile	No	1
State and Tribal Registered Underground Storage Tank (UST) Facilities	Site and Adjoining	No	0
State and Tribal Registered Aboveground Storage Tank (AST) Facilities	Site and Adjoining	No	0
State and Tribal IC Registries	½-Mile	No	2
State and Tribal Voluntary Cleanup Program (VCP) Facilities	½-Mile	No	0
State and Tribal Brownfield Facilities	½-Mile	No	0
State Spill Facilities	Site Only	No	-

The EDR report also identified 20 non-geocoded sites. These are sites which could not be mapped or “geocoded” due to inadequate address information. Refer to the EDR report for a list of these sites. BETA attempted to locate

these sites via vehicular reconnaissance and interviews with personnel familiar with the area. Based on this research, BETA did not identify any sites within the specified radii.

The search of Federal and State databases identified the Site as:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) facility;
- Resource Conservation and Recovery Act (RCRA) Generator;
- Facility Index System (FINDS); and,
- State Hazardous Waste Site (SHWS)/Release site.

The database search identified the Site as G.A. Rogers, Inc., Nu-Chrome, and Custom Chrome, LLC at 161 Graham Road. The following is a summary of the Site's Federal and State database listings.

- G.A. Rogers Inc. is identified as a RCRA NonGen/NLR facility, indicating that they no longer generate hazardous waste. The EPA received a form on May 1, 2012 that showed an operation start date of December 9, 1991. EPA identified several violations with this Site occupant. Violations included the following: pre-transport, general, and written informal. Each listing achieving compliance in 1993.
- Nu-Chrome is identified as a CERCLIS facility and potentially responsible party. According to the search, this Site was given Non NPL Status as of August 13, 2012. The status is identified as Removal Only Site (No Site Assessment Work Needed). The Removal Assessment was completed in August 2012.
- G.A. Rogers Inc. is identified as a US AIRS facility. According to the search, the site tenant was a manufacturer of fabricated metal products. Additionally, the Site tenant was classified as potential uncontrolled emissions < 100 tons/year. Plant air pollutants were identified as carbon monoxide, sulfur dioxide, and volatile organic compounds (VOCs).
- Custom Chrome LLC is identified as a RCRA CESQG/EPA Watch List/US AIRS facility. They were identified as generating less than 100 kilograms of hazardous waste per month as of 2007. They were listed as a small quantity generator (SQG; in 1997) and as a large quantity generator (LQG; in 2006 and 2009). The waste code D002 signifies a waste that has a pH less than 2 or greater than 12.5 and is considered to be a corrosive hazardous waste. Known wastes include sodium hydroxide, a caustic solution with a high pH, is often used by industries to clean or degrease parts; hydrochloric acid, a solution with a low pH, is used by many industries to clean metal parts prior to painting. The facility has received many notices of violations that included: records/reporting, pre-transport, and TSD-general facility standards. Violations date back to 2004.
- G.A. Rogers Inc. is identified as a FINDS site based on its listing on the Aerometric Information Retrieval System (AIRS), RCRA listing, CERCLIS listing, and ICIS listing.
- Custom Chrome LLC is identified as a SHWS/Release and HW Gen. According to the search, the Site was listed as a known release site in November 1994. The release was reported to MassDEP and triggered a 72-hour reporting limit. MassDEP issued Release Tracking Number (RTN) 4-10963. On-line records include several reports that are summarized in Section 6.6 of this report.

A description of the databases reviewed by BETA and an analysis of sites identified within the prescribed search distances are presented in the following sections.

8.1 United States Environmental Protection Agency (USEPA) Databases

NPL Facilities

This is a list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or “Superfund”). A site must be on the NPL to receive money from the Trust Fund for Remedial Action. The database search did not identify NPL facilities within one mile of the Site.

Delisted NPL Facilities

Facilities that the EPA determined may be deleted from the NPL because no further response is appropriate. The database search did not identify Delisted NPL facilities within ½-mile of the Site.

CERCLIS Facilities

CERCLIS is the USEPA system for tracking potential hazardous waste sites within the Superfund program. A site's presence in CERCLIS does not imply a level of federal activity or progress at a site, nor does it indicate that hazardous conditions necessarily exist at the location. Within one year of being entered into CERCLIS, the USEPA performs a preliminary assessment of a site. Based upon the results of the preliminary assessment, the USEPA may conduct additional investigations which could lead to a site being listed on the NPL. The search identified the Site as a CERCLIS site. The following summarizes available information for the Site listing.

August 8, 2012 “Request for a Removal Action at the Nu-Chrome Site – Action Memorandum,” by EPA

EPA stated that this memorandum was being submitted to document the approval of the removal of hazardous substances at the Nu-Chrome facility. The substances consisted of tanks, vats, piping systems, and debris in the building, and contaminated surface soil outside the building. EPA stated that from 1999 to 2012, they conducted RCRA compliance inspections at the Site and repeatedly found violations of the regulations. EPA Region 1 has taken action against Nu-Chrome based on these findings. Violations included identification, storage and treatment of hazardous waste. Waste at the Site included (but not limited to) corrosive waste water stored in tanks and vats, and sludge containing chromium, lead, cadmium, and cyanide compounds. EPA's memorandum indicated that a soil sample collected adjacent to the building revealed an elevated level of chromium. In 2012, the Fall River Fire Department conducted an investigation at the Site and identified large volumes of waste water stored in damaged containers. Nu-Chrome was in the process of foreclosure at that time and lack of electricity limited the inspections.

EPA concluded that a health and safety plan would need to be developed and implemented, the site would also need to be characterized to include an inventory of hazardous substances and waste remaining at the Site, sampling and analysis of unknown substances and sampling and analysis to determine nature and extent of contaminated surface soils. Other proposed actions included decontamination of vats, excavation of contaminated surface soils, and removal and disposal of mercury containing lights and PCB-containing light ballasts.

October 2012 “Removal Program/Preliminary Assessment/Site Investigation Report,” by Weston Solutions, Inc. (Weston)

Weston summarized background information for the Nu-Chrome facility and indicated that the facility had been investigated by EPA from 1999 to 2012. Weston stated that possibly present, known or alleged substances at the Site included elevated levels of chromium, lead, and cyanide. Weston indicated that the Site was privately owned by Donald Kemp; however, the City of Fall River was in the process of foreclosing on the property due to back taxes. Weston observed cylinders, drums, 14 waste tanks (inside the building), and floor sweeping piles of debris throughout the building. Weston also observed monitoring wells on the Site; however, they did not determine if the wells were active and/or when they were installed.

In August 2012, a Superfund Technical Assessment and Response Team III (START) collected 12 waste tank samples, two samples of liquid from on-Site drums, and one sample from a drum that contained a solid product. Samples were analyzed for metals, cyanide, and pH. In addition, 35 samples were field screened for lead and chromium and 10 surface soil samples were analyzed for metals and cyanide.

Analytical results of “Product Samples” identified total chromium in seven waste tank/drums samples. A high concentration of 320 milligrams per kilogram (mg/kg) of chromium was detected in one drum sample. Lead was detected in five samples with a high concentration of 70 mg/kg in one drum sample. Barium was detected at a concentration of 100 mg/kg and silver was detected at a concentration of 580 mg/kg. Cyanide was detected in 11 of the samples at concentrations ranging from 0.35 to 13,000 mg/kg.

Analytical results of “Surface Water Samples” identified metal compounds in one sample. Results identified 2,200 µg/L of aluminum, 64 µg/L of barium, 6,000 µg/L of calcium, 21 µg/L of cobalt, 150 µg/L of copper, 11,000 µg/L of iron, 1,300 µg/L magnesium, 2,100 µg/L of manganese, 410 µg/L of nickel, and 340 µg/L of zinc.

Analytical results of “Surface Soil Samples” identified metal compounds in soil samples. Results identified 12,000 mg/kg of aluminum, 12 mg/kg of arsenic, 450 mg/kg of barium, 11 mg/kg of cadmium, 7,300 mg/kg of calcium, 1,100 mg/kg of total chromium, 55 mg/kg of cobalt, 16,000 mg/kg of copper, 110,000 mg/kg of iron, 2,600 mg/kg of lead, 2,400 mg/kg of magnesium, 750 mg/kg of manganese, 20,000 mg/kg of nickel, 240 mg/kg of silver, 5,600 mg/kg of zinc, and 29 mg/kg of cyanide.

Based on the analytical results, EPA “requested that hexavalent chromium analysis be conducted on six of the surface soil samples...the highest concentration of hexavalent chromium detected was 2.2 mg/kg at one sample identified as SS-14.”

November 29, 2012 “Request for Change in Scope of Response,” by EPA

EPA and START initiated site removal actions with soil and water sampling and analysis, removal of debris, and preparation of transportation and disposal of electroplating wastes in the tanks and vats. Lead was found in several samples of particulate matter found on the floors throughout the Site building at levels exceeding relevant health based standards. The highest concentration of lead was found in the area of the building that reportedly conducted sandblasting, grinding, and buffing of metal parts. A bag-house filter from an air filtration unit was sampled and concentrations of lead and silver exceeded health based standards. Additionally, samples of particulates identified barium exceeding health based standards in an area of the building that formerly conducted metallic powder coating operations. At that time, approximately 13,000 gallons of liquid plating waste had been disposed of and shipped off-Site. Threats to public health or welfare were identified as lead, barium, and silver. EPA proposed additional removal of metal contaminated debris for disposal to an approved off-Site facility.

December 2012 “Site Summary,” by EPA

EPA provided a short background summary of the Nu-Chrome facility and stated that hazardous materials were being removed and properly disposed. Materials included liquids, sludge, dust, containers, debris, and soil. EPA stated that they conducted soils testing from around the facility and identified some contamination. Soils were identified as containing lead and mercury. EPA stated that they excavated mercury-contaminated soil and will remove the lead contaminated soil by the end of January 2013. EPA’s summary further indicated that these two areas of concern would be sampled after removing the lead and mercury contaminated surface soils.

On-line summary records

EPA on-line information indicates that from November 2012 to February 2013, remedial actions were conducted that included solidifying the sludge inside the bulk containers for disposal, pressure washing to remove residual contamination and collecting the rinse-ate for disposal. Additionally, drums and other containers were consolidated, inventoried, and separated to appropriate waste streams for disposal. EPA excavated surface soils that were determined to contain lead and mercury. During preliminary screenings with an x-ray fluorescence spectrometry, EPA discovered elevated levels of lead, barium, and silver in particulate matters throughout the Site. The lead and silver apparently was generated during metal grinding and buffing operations and barium was generated from metal coating operations.

Other than the Site, the database search identified one CERCLIS facility within ½-mile of the Site. According to the search, Fall River Landfill at Airport Road Industrial Park is identified as a CERCLIS facility. It is located approximately 900 feet north-northeast and hydraulically crossgradient of the Site. This facility was discovered in 1981 with a preliminary assessment in 1984. It was assigned a low priority in 1985. Based on its distance and inferred hydraulic cross- to downgradient location, the Fall River landfill facility does not likely pose a threat of release of OHM to the Site.

CERCLIS NFRAP Facilities

CERCLIS sites identified as NFRAP facilities have been removed from the CERCLIS because these sites may be identified as where no contamination was found, contamination was removed without the need for the site to be placed on the NPL, or the contamination was not considered significant enough to be placed on the NPL. The database search did not identify CERCLIS NFRAP facilities within ½-mile of the Site.

RCRA CORRACTS Facilities

RCRA CORRACTS is a list of facilities that are found to have had hazardous waste releases and require RCRA corrective action activity, which can range from site investigations to remediation. The database search identified one property as a RCRA CORRACTS facility within one mile of the Site. Lightolier Fall River is located at 631 Airport Road, approximately 1,955 feet northwest of the Site. This facility was assigned a low priority. They were a manufacturer of jewelry and silverware manufacturing and residential electrical lighting fixtures. Based on its distance and inferred hydraulic cross to downgradient location, the RCRA CORRACTS facility does not likely pose a threat of release of OHM to the Site.

RCRA TSD Facilities

The RCRA TSD Facilities List contains information pertaining to those facilities that either treat, store, or dispose of hazardous waste. While these facilities represent some form of hazardous waste activity, they are most significant if determined to be out of compliance or to have violations. The database search did not identify RCRA TSD facilities within ½-mile of the Site.

RCRA Generator Facilities

BETA reviewed the list of sites which have filed notification with the USEPA in accordance with RCRA requirements. These sites include generators of hazardous waste regulated under RCRA. Under RCRA, hazardous waste generators are classified by the mass of hazardous waste generated in a calendar month into the following categories: Large Quantity Generator, greater than 1,000 kilograms/month (Kg/month); Small Quantity Generator, 100 to 1,000 Kg/month; and Conditionally-Exempt Small Quantity Generator, less than 100 Kg/month. RCRA Generators, while they represent some form of hazardous waste activity, are most significant if they are determined to have Class I Violations or to be non-compliant. Other than the Site, the database search did not identify adjoining properties as RCRA Generators.

IC/EC Registries

The database search did not identify the Site on the IC/EC registries.

Brownfield Facilities

The database search did not identify Brownfields facilities within ½-mile of the Site.

ERNS Facility

The ERNS is a database of notifications of oil discharges and hazardous substance releases. The primary purpose of ERNS is to standardize and collect notifications made to the Federal government of releases of oil and hazardous substances. These notifications are used by “On-Scene Coordinators” to determine an emergency response and release prevention. When a call is made to the National Response Center or one (1) of the ten USEPA Regions, a report is created containing all of the release information that the caller provided. This report is transferred to an appropriate agency to evaluate the need for a response and the records are electronically transferred to the ERNS database. As such, if a reported release of oil or a hazardous substance is deemed to require a response, it should also be listed in the appropriate federal or state level environmental database such as CERCLIS, state equivalent CERCLIS, or state leaking underground storage tank or spills. The database search did not identify the Site on the ERNS database.

8.2 Massachusetts Department of Environmental Protection (MassDEP) Databases

State SHWS Facilities

The SHWS list is an inventory of hazardous waste release sites maintained by the MassDEP. Other than the Site, the database search identified eleven SHWS facilities within one mile of the Site. However, each of these facilities is located over 800 feet from the Site. Based on their distances, inferred hydraulic cross- to downgradient locations, and/or regulatory status, the eleven SHWS do not likely pose a threat of release of OHM to the Site. Information on the Site listing has been summarized in Section 6.6 of this report.

SWL Facilities

The database search identified one SWL facility within ½-mile of the Site. According to the search, BFI Fall River Landfill at 1080 Airport Road is located approximately 900 feet north-northeast of the Site. This facility is over 135 acres in size and is currently active. Based on its distance, this facility does not likely pose a threat of release of OHM to the Site.

Registered UST Facilities

The database search did not identify the Site or adjoining properties as registered UST facilities.

Registered AST Facilities

The database search did not identify the Site or adjoining properties as registered AST facilities.

IC Facilities

The database search identified the following two IC facilities within ½-mile of the Site.

According to the search, Robbins Mfg. Co. at 1200 Airport Road is located approximately 1,022 feet northeast of the Site. The search indicates that an Activity and Use Limitation (AUL) was issued to the property in 2010. A Class A-3 (permanent solution has been achieved) report was submitted to MassDEP. Based on its regulatory status, this facility does not likely pose a threat of release of OHM to the Site.

According to the search, Aluminum Processing Corp. at 631 Airport Road is located approximately 1,955 feet northwest of the Site. The search indicates that an Activity and Use Limitation (AUL) was issued to the property in 2010. A Class A-3 (permanent solution has been achieved) report was submitted to MassDEP. Based on its distance and regulatory status, this facility does not likely pose a threat of release of OHM to the Site.

VCP Facilities

The database search did not identify VCP facilities within ½-mile of the Site.

Brownfields Facilities

The database search did not identify Brownfield facilities within ½-mile of the Site.

8.3 Local Regulatory Agency Interviews

Fire Department - Fire Prevention Office

BETA submitted a written request to the Fall River Fire Department to inquire about current and historical Site conditions, including current or former USTs, ASTs, hazardous materials spills or hazardous materials or wastes used or stored on a property. The fire department provided information similar to what BETA reviewed from MassDEP on-line records, which is summarized in Section 6.6 of this report. Please note that the fire department did not have records of USTs or ASTs for the Site.

Building Department

BETA visited the Fall River Building Department to inquire about permits or licenses for the Site. The Fall River Building did not have environmental records for the Site. However, a permit issued to G.A. Rogers (the Site owner) and dated April 1990 was issued to the Site for installation of a powder (paint) coating room.

Board of Health Department

BETA visited the Fall River Board of Health to inquire about permits or licenses for the Site. The Fall River Board of Health does not maintain UST or OHM permits. Additionally, they did not have records pertaining to the Site but provided BETA with MassDEP information.

Assessor's Office

BETA visited the Fall River Tax Assessor's office to obtain basic Site information, such as is found on the Assessor's field card and on town maps. A review of the field card did not identify any environmental liens with respect to the Site.

City Clerk's Office

The Fall River City Clerk's office stated that they maintain current OHM permits. However, they do not have records pertaining to the Site.

Conservation Commission

Persons at the Conservation Commission stated that they did not have records pertaining to regulated wetlands at the Site. Additionally, they did not have environmental records pertaining to the Site.

Engineering Department

Mr. Byron Holmes of the City Engineering Department stated that Nu-Chrome sits at a point on Graham Road where the swale to the east is flat (the swale currently has standing water). There is a 2" pipe draining into this swale from the Site. This pipe, which is active and flowing, may be coming from a catch basin at the loading dock, as the wetland to the south is now overflowing onto the Nu-Chrome property and entering the catch basin. He stated that someone would need to check the basin to be sure it is leading to the swale. The swale appears to head north from Nu-Chrome once it gets above the flat area that now has standing water. However, Mr. Holmes could not definitively state that all of Nu-Chrome drains as noted. Assuming it does go north, it does not go to the Industrial Park's detention pond. It would go north along Graham, east along Airport Road, and north along Innovation Way (formerly Riggensbach Road). The swale then drains into the diversion channel (Mother's Brook) that runs along a sewer easement, then northwesterly along the landfill, beneath Route 24 and into Freetown (see 1985 USGS maps for Fall River and Somerset).

9. Environmental Professional Certification

The following provides the certifications required by the ASTM 1527-13 standard. “I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312”. “I have the specific qualifications based on educations, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312”. Appendix F contains a resume of my qualifications.



Joseph R. McLoughlin II, LEP, LSP

10. List of Acronyms

ACM	Asbestos Containing Materials
AST	Aboveground Storage Tank
ASTM	American Society of Testing and Materials
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CORRACTS	Corrective Action Tracking System
MassDEP	Massachusetts Department of Environmental Protection
DPW	Department of Public Works
EDR	Environmental First Search Report
ETPH	Extractable Total Petroleum Hydrocarbons
ERNS	Emergency Response Notification System
ESA	Phase I Environmental Site Assessment
FINDS	Facility Index System
GEN	Generators
HWS	Hazardous Waste Sites
IRA	Immediate Response Action
Kg	Kilogram
LBP	Lead Based Paint
Lbs	Pounds
LPG	Liquid Petroleum Gas
LTBI	Locations To Be Investigated
LUST	Leaking Underground Storage Tank
MSL	Mean Sea Level
NLR	No Longer Regulated
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OHM	Oil and/or Hazardous Material
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyls
pCi/L	PicoCuries per liter
Ppb	Parts per billion
RAATS	RCRA Administrative Action Tracking System
RCRA	Resource Conservation and Recovery Act

RCRIS	Resource Conservation and Recovery Information System
REC	Recognized Environmental Conditions
SF	Square feet
SQG	Small Quantity Generator
SPILLS	State Spills List
STATE	State Sites
SVOC	Semi-volatile Organic Compound
SWL	Solid Waste Landfills
TPH	Total Petroleum Hydrocarbons
TPH-DRO	Total Petroleum Hydrocarbons – Diesel Range Organics
TRIS	Toxic Release Inventory System
TSD	Transportation, Storage, Disposal Facility
US EPA/EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

The Site: 161 Graham Road, Fall River, Massachusetts (Assessor's Parcel ID Z-03-0022)

- This report has been prepared for the sole and exclusive use of the Client and is subject to and issued in connection with the Agreement and the provisions thereof. Any use or reliance upon information provided in this report, without the specific written authorization of Client and BETA, shall be at the User's sole risk.
- In conducting this assessment and investigation, BETA has obtained and relied upon information from multiple sources to form certain conclusions regarding potential environmental issues at and in the vicinity of the subject property. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information.
- The objectives of the assessment and investigation described in this report were to assess the physical characteristics of the subject property with respect to overt evidence of past or present use, storage, and/or disposal of oil or hazardous materials, as defined in applicable state and federal environmental laws and regulations, and to gather information regarding current and past operations and environmental conditions at and in the vicinity of the subject property.
- The scope of this report does not include an assessment of the suitability of Site soil for development/construction. Please note that certain soils, particularly in urban areas, may include low levels of contaminants such as lead, metals, or ash constituents. The presence of such contaminants in soil, while not representing a "release," may result in the need for special handling at increased costs to allow for off Site soil reuse during Site development.
- No attempt has been made to assess the compliance status of any past or present Owner or Operator of the Site with any federal, state, or local laws or regulations.
- The findings, observations, and conclusions presented in this report are limited by the scope of services outlined in our Agreement, which reflects schedule and budgetary constraints imposed by Client for the current phase of environmental assessment. Furthermore, the assessment has been performed in accordance with generally accepted engineering practices and standards set forth in ASTM E 1527-13. No other warranty, expressed or implied, is made.
- The assessment presented in this report is based solely upon: readily-available data, visible portions of the Site, and information gathered to date. Should further environmental or other relevant information be developed at a later date, Client should bring the information to the attention of BETA as soon as possible. Based upon an evaluation, BETA may modify the report and its conclusions.
- It should be noted that the Executive Summary does not contain all the information that is found in the full report. The report should be read in its entirety to obtain a more complete understanding of the information provided and to aid in any decisions made or actions taken based on this information. This report documents the recognized environmental conditions as defined in ASTM and where appropriate other suspect environmental conditions noted on the Site and associated risks to the environment. Although the survey may not disclose all potential liabilities, a reasonable attempt has been made to do so within the scope of work.
- BETA cannot and does not warrant or guarantee that the information provided by these sources is accurate or complete. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide the client with information regarding overt evidence of past use storage, and/or release or threat of release of OHM the Site.
- The environmental database search was conducted under the Notice of Disclaimer/Waiver of Liability included in the EDR report.