



VIRGINIA DEPARTMENT OF ENVIRONMENT QUALITY

DIVISION OF LAND PROTECTION AND REVITALIZATION

OFFICE OF REMEDIATION PROGRAMS

STATEMENT OF BASIS

**BÖHLER-UDDEHOLM SPECIALTY METALS, INC.
(FORMERLY TELEDYNE ALLVAC / FORMERLY C-K
COMPANY)**

EPA ID NO. VAD089022685

SOUTH BOSTON, VIRGINIA

JANUARY 23, 2017

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1.0 INTRODUCTION

1.1 Facility Name

The Virginia Department of Environmental Quality (VDEQ) has prepared this Statement of Basis (SB) for the Böhler-Uddeholm Specialty Metals, Inc. (BUSMI) facility located at 2306 Eastover Drive, South Boston, Virginia 24592 (hereinafter referred to as the Facility).

The Facility is subject to the Corrective Action (CA) Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6992k. The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and waste constituents that have occurred at their property.

Information on the Corrective Action Program can be found by navigating <http://www.epa.gov/reg3wcmd/correctiveaction.htm>.

VDEQ has prepared this SB in cooperation with the United States Environmental Protection Agency (EPA) and is providing the opportunity for public comment and review on its proposal and the associated permit modification.

1.2 Proposed Decision

This Statement of Basis explains VDEQ's proposed decision that further actions to remediate soil, also known as corrective measures, are necessary to protect human health and the environment given current and reasonably anticipated future land use. VDEQ's proposed decision requires extension of a cover over the known Solid Waste Management Unit (SWMU) and the maintenance of certain property mechanisms known as Institutional Controls (ICs) and Engineering Controls (ECs). ICs are generally non-engineered mechanisms such as administrative and/or legal controls that minimize or eliminate the potential for human exposure to contamination. Engineering Controls are generally engineered mechanisms such as protective covers or caps. The proposed corrective measures objectives are discussed in Section 4.0 and the proposed remedy and controls are discussed in Section 5.0 below.

This Statement of Basis summarizes information that can be found in greater detail in the work plans and reports reviewed by VDEQ and EPA, which can be found in the Administrative Record (AR). Attachments contain an index of documents for the AR and figures showing site location and the locations of Institutional Controls.

1.3 Public Participation

Interested persons are invited to comment on VDEQ's proposed decision by reviewing this SB and the documents contained in the AR. The information presented in this SB can be found in greater detail in the work plans and reports submitted by the Facility to

VDEQ and EPA. To gain a more comprehensive understanding of the RCRA activities that have been conducted at the Facility, VDEQ encourages the public to review these documents, which are found in the AR. A copy of the AR is available for public review, in paper or electronic format, from the VDEQ contact person, the address and telephone number of which is provided in Section 8.0 below.

When making a determination regarding the proposed decision, VDEQ will consider all written comments received during the comment period (see Section 8.0), and requirements of the Virginia Hazardous Waste Management Regulations and 40 CFR Part 124. Each person who has submitted comments will receive a written response from VDEQ. VDEQ will then incorporate the applicable portions of the final remedy into the Permits after comments have been addressed.

2.0 FACILITY BACKGROUND

Böhler-Uddeholm Specialty Metals, Inc. is located at 2306 Eastover Drive, South Boston, Virginia 24592. The facility consists of approximately 43 acres. The main facility building houses office space and metal manufacturing operations. A process waste water treatment plant and a former impoundment are also located at the facility. The facility is primarily a finisher of specialty steels for use by the tool and die industries (drill bits, saw blades, cutting tools and similar applications). The steel finishing operation consists of grinding, drawing, and cleaning the steel to meet customer specifications. The process includes treating metals in a solution of potassium permanganate and potassium hydroxide and pickling steel in a hydrochloric acid solution. Periodically these solutions are changed or sludges are removed from the tanks.

During facility operations, from 1972 until 1985, lime stabilized spent pickle liquor solutions were temporarily stored in the former impoundment before being discharged into Wood's Creek. Discharge from the impoundment was performed in accordance with the facility's National Pollution Discharge Elimination System (NPDES) Permit (VA0051047).

The Facility and surrounding area are on a public water supply system. Surface waters in the vicinity include Rocky Branch and Wood's Creek. Rocky Branch is located approximately 250 feet downgradient and west of the Facility. Wood's Creek is located approximately 500 feet east/southeast of the Facility. The confluence of Rocky Branch and Woods Creek is located 1,200 feet south of the Facility. There are no identified or documented intake or discharge structures, nor withdrawal or injection wells, and no drinking water wells or springs in close proximity to the subject site. The intake for South Boston's water supply from the Dan River/Kerr Reservoir is approximately 1.6 miles upstream of the confluence of Wood's Creek and the Dan River. No other springs, creeks, ponds or wetlands are located nearby.

3.0 SUMMARY OF ENVIRONMENTAL HISTORY

Based on a review of files maintained by the DEQ and EPA Region 3, a single hazardous waste management unit (HWMU) and a single solid waste management unit (SWMU) were identified at the Facility. A site layout map is included as Figure 1 showing the location of the units. The following table lists the units followed by a summary of the Facility's environmental investigations and activities.

HWMU and SWMU Identification Table

Identification	HWMU/SWMU Name
HWMU	Former RCRA Hazardous Waste Impoundment
SWMU	Metal Grinding Sludge Waste Pile

RCRA Closure Activities

The former RCRA hazardous waste impoundment was taken out of service in 1985. All liquids that had collected in the impoundment were removed in accordance with the NPDES Permit. Based on approved closure activities, the remaining waste, approximately 590 cubic yards of sludge, was closed in place and covered by a protective cap. Closure certification was successfully completed on June 21, 1989. The former impoundment has been closed as a landfill and is currently being managed under the current RCRA Hazardous Waste Management Permit. The location and extent of the former impoundment is depicted on Figure 2.

RCRA Facility Investigation Activities

The SWMU is a metal grinding sludge waste pile generated from past facility processing operations. The SWMU is located on the southwestern side of the main building approximately 240 feet south of the facility office area entrance. During the 1970s, the SWMU area was bare soil immediately beyond the margin of a smaller asphalt paved parking area. A portion of this area has since been developed as additional paved parking for the BUSMI facility. It was indicated by Bohler staff that the grinding sludge material was placed on this portion of the site in the 1970s and this activity ceased prior to 1980. The location and extent of the SWMU is depicted on Figure 3.

Soil

The Facility's consultant, ECS Mid-Atlantic, LLC (ECS) conducted an initial limited soil assessment of the SWMU in 2006, where thirteen (13) borings for soil sampling were advanced with a Geoprobe direct push drill rig in the areas indicated by BUSMI personnel. The soil borings were advanced to depths ranging from 7 to 12 feet below ground surface (bgs) and arrayed in general north-south and east-west perpendicular lines in an effort to delineate the extents of the potentially impacted soils in the vicinity of the SWMU on the southwestern portion of the BUSMI facility. Soil samples were obtained continuously from the surface to the termination depth of the soil borings. The soil

samples were observed for visible discoloration or noticeable odors. Each sample was screened in the field using an organic vapor analyzer (OVA). Soil samples indicating suspect visual impact or elevated OVA readings were selected for laboratory testing. A distinctive layer of fine black material, which exhibited the highest OVA readings, was encountered at depths ranging from 3.5 feet to 7 feet bgs in several borings across the subject area. A total of five soil samples were selected, based on visual and olfactory observations and OVA readings, for laboratory analysis.

The analytical results indicated mostly metals with the highest concentrations in samples where the sludge was visibly present. Low levels of VOCs were indicated in samples with sludge. The indicated VOC constituents are primarily associated with petroleum compounds of grinding oils. Antimony, Arsenic, Barium, Chromium, Cobalt, Copper, Iron, Manganese, Molybdenum, Nickel, Selenium, Silver, Tungsten, Vanadium and Bis(2-chloroethyl)ether were present in the soil samples obtained and were found at higher concentrations within the identified grinding sludge material layer.

Based on the results of the limited soil assessment, the VDEQ requested that additional assessment be conducted, in the form of a RCRA Facility Investigation (RFI). ECS completed an RFI at the SWMU in 2010. The objective of this RFI was to provide additional assessment of contamination associated with the SWMU by drilling soil borings and installing groundwater monitoring wells, identify human health/safety risks and environmental receptors, and identify the need for additional remedial actions, if any.

As part of the RFI, ECS advanced soil borings utilizing a Geoprobe at fifteen (15) locations, with the exception of the background sample locations which were advanced by hand auger. Soil and groundwater samples were submitted for laboratory analysis.

The soil data were compared to the November 2014 EPA Region III Residential and Industrial Regional Screening Levels (RSLs). Arsenic, barium, cobalt, iron, molybdenum, and vanadium were noted at concentrations that exceed residential RSLs in one or more locations. Antimony, arsenic, cobalt, iron, and molybdenum concentrations exceeded industrial RSLs at one or more locations.

The SWMU size was estimated to be approximately 55 feet wide by 75 feet long. Data collected during the RFI indicates that it ranges in thickness from 0.3 feet to 2.5 feet at depths from 3.5 to 7.0 feet bgs. The variance in thickness is due to the SWMU being located on an approximate 1:2 slope. The metal grinding sludge is buried under fill material, which ranges in thickness from one (1) to seven (7) feet deep. Due to the varying thicknesses of the material, the exact volume cannot be determined; however, the estimated volume is approximately 382 cubic yards of metal sludge grindings.

Groundwater

Multiple soil borings during the 2010 SWMU investigation were converted to groundwater monitoring wells to allow for sampling and analyses of groundwater. Groundwater sampling was conducted in these wells in 2010 and again in 2013. Due to concerns that metals concentrations detected in groundwater samples during these events were possibly attributable to the presence of suspended sediment in the low yield monitoring wells, rather

than being representative of true groundwater quality, VDEQ granted approval for rehabilitation of the monitoring wells followed by a round of low-flow sampling in an effort to reduce turbidity and to provide a representative characterization of site groundwater. The data collected by ECS in June and July 2014 indicated past metal exceedances in the area of the SWMU were likely caused by turbid samples resulting from a combination of inadequate purge volumes from the low yield wells prior to sample collection and inadequate well development following installation.

Additional groundwater monitoring was proposed to fully demonstrate that groundwater was not impacted by metals from the SWMU. ECS conducted two additional rounds of groundwater sampling in October 2015 and February 2016. Samples were collected using low flow methods to minimize turbidity in the samples. In April 2016, ECS completed a final groundwater sampling event and reported the collective results. Analytical results were compared to the Alternate Concentration Limits (ACLs; updated February 15, 2016), Maximum Concentration Limits (MCLs) or EPA Tapwater Screening Level, and Facility Groundwater Protection Standards (GWPS), as applicable. In addition, groundwater analytical results extending back to March 2010 were also included for comparison. Based on the data, ECS concluded that the SWMU was not significantly impacting groundwater in an April 2016 monitoring report. On August 8, 2016, VDEQ issued a letter concurring with the findings that groundwater at the facility does not appear to be impacted above applicable EPA Region 3 risk screening levels by the SWMU.

Corrective Measures Study

ECS completed a Corrective Measures Study (CMS) document dated December 30, 2014. The CMS included corrective measures objectives for the SWMU, and identified and screened various technologies. The CMS evaluated multiple corrective measures alternatives. The alternatives were evaluated with respect to criteria specified in the RCRA Permit and threshold and balancing criteria for evaluating corrective measures alternatives found in Section IV Part E of the RCRA Corrective Plan guidance document (EPA 1994). The selected alternative will effectively achieve the corrective measures objectives and consists of capping of the SWMU and a deed restriction. On August 25, 2016, VDEQ approved the CMS.

4.0 CORRECTIVE ACTION OBJECTIVES

VDEQ has determined that industrial risk-based levels are protective of human health and the environment for individual contaminants at this Facility provided that the closed RCRA impoundment and the SWMU area are not used for residential purposes. Deed restrictions prohibiting residential use in these specific areas will be imposed by the existing Hazardous Waste Management Permit or a future Uniform Environmental Covenants Act (UECA) covenant. Accordingly, VDEQ's Corrective Action Objectives for the Facility are the following:

1. To control exposure to the hazardous constituents remaining in place by requiring compliance with and maintenance of land use restrictions in the form of

institutional controls at the Facility. This restriction will be imposed by the Facility's Permit or in a future UECA covenant; and

2. To prevent infiltration of stormwater and control exposure to the hazardous constituents remaining in place in the closed RCRA impoundment and the SWMU by requiring the RCRA cap and asphalt cover to be maintained at the Facility. This restriction will be imposed by the Facility's Permit or future UECA covenant.

5.0 SUMMARY OF PROPOSED REMEDY

A. Summary

Under this proposed remedy, DEQ is requiring the following actions:

1. Extend asphalt cover, as necessary, at the SWMU area to include all areas known to have constituents above EPA Region 3 Industrial RSLs.
2. Maintain engineering controls consisting of the existing RCRA cap and existing/extended asphalt cover at the closed RCRA impoundment and the SWMU. Conduct an annual inspection and routine maintenance of the controls, and place and maintain notification signs at the perimeter of the capped/covered areas.
3. Maintain compliance with land use restrictions and institutional controls. Institutional controls include:
 - A. The restricted areas (HWMU and SWMU) of the Facility shall not be used for residential purposes or for children's (under the age of 16) daycare facilities, schools, or playground purposes.
 - B. Disturbance, excavation, and/or management of soil or material in the restricted areas shall be prohibited. Future modifications at the Facility that could be reasonably understood to adversely affect or interfere with the integrity or protectiveness of the final remedy will be evaluated to identify and address those potential impacts or interferences. No removal, disturbance, or alteration shall occur to any corrective action components installed at the facility without VDEQ approval.

B. Implementation

VDEQ proposes to implement the remedy through the RCRA Hazardous Waste Management Permit or future UECA covenant. Therefore, DEQ does not anticipate any regulatory constraints in implementing its remedy.

C. Reporting Requirements

Compliance with the institutional and engineering controls shall be evaluated, certified and reported to VDEQ in accordance with reporting requirements in the RCRA Permit or in a future UECA covenant.

6.0 ENVIRONMENTAL INDICATORS

Under the Government Performance and Results Act (“GPRA”), EPA has set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental clean-up indicators for each facility: (1) Current Human Exposures Under Control and (2) Migration of Contaminated Groundwater Under Control. The Facility met the Human Health indicator on July 17, 2006. The Facility met the Groundwater indicator on July 31, 2006.

7.0 FINANCIAL ASSURANCE

Since the final remedy for the Facility is limited to institutional and engineering controls, financial assurance for corrective action is not warranted or required for the Facility.

8.0 PUBLIC PARTICIPATION

Before DEQ makes a final decision on its proposed final remedy for the Facility, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record for the Facility. The Administrative Record contains all information considered by DEQ in reaching this proposed decision. Interested parties are encouraged to review the Administrative Record and comment on DEQ’s proposed decision. For additional information regarding the proposed remedy, please contact Mr. Ryan Kelly at (804) 698-4045 or ryan.kelly@deq.virginia.gov.

The public comment period will last sixty (60) calendar days from the date the notice is published in a local newspaper. Comments may be submitted by mail, fax, or e-mail to Mr. Ashby Scott at the address listed below.

Virginia Department of Environmental Quality
629 East Main Street
P.O. Box 1105
Richmond, VA 23218
Contact: Mr. Asby Scott
Phone: (804) 698 - 4467
Email: ashby.scott@deq.virginia.gov

DEQ will make a final decision after considering all comments, consistent with the applicable RCRA requirements and regulations. If the decision is substantially unchanged from the one in this Statement of Basis, DEQ will issue a final decision and inform all persons who submitted written comments or requested notice of DEQ’s final determination. If the final decision is significantly different from the one proposed, DEQ

will issue a public notice explaining the new decision and will reopen the comment period.

Attachments

Figure 1 – Facility Layout Map

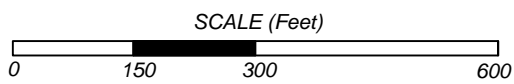
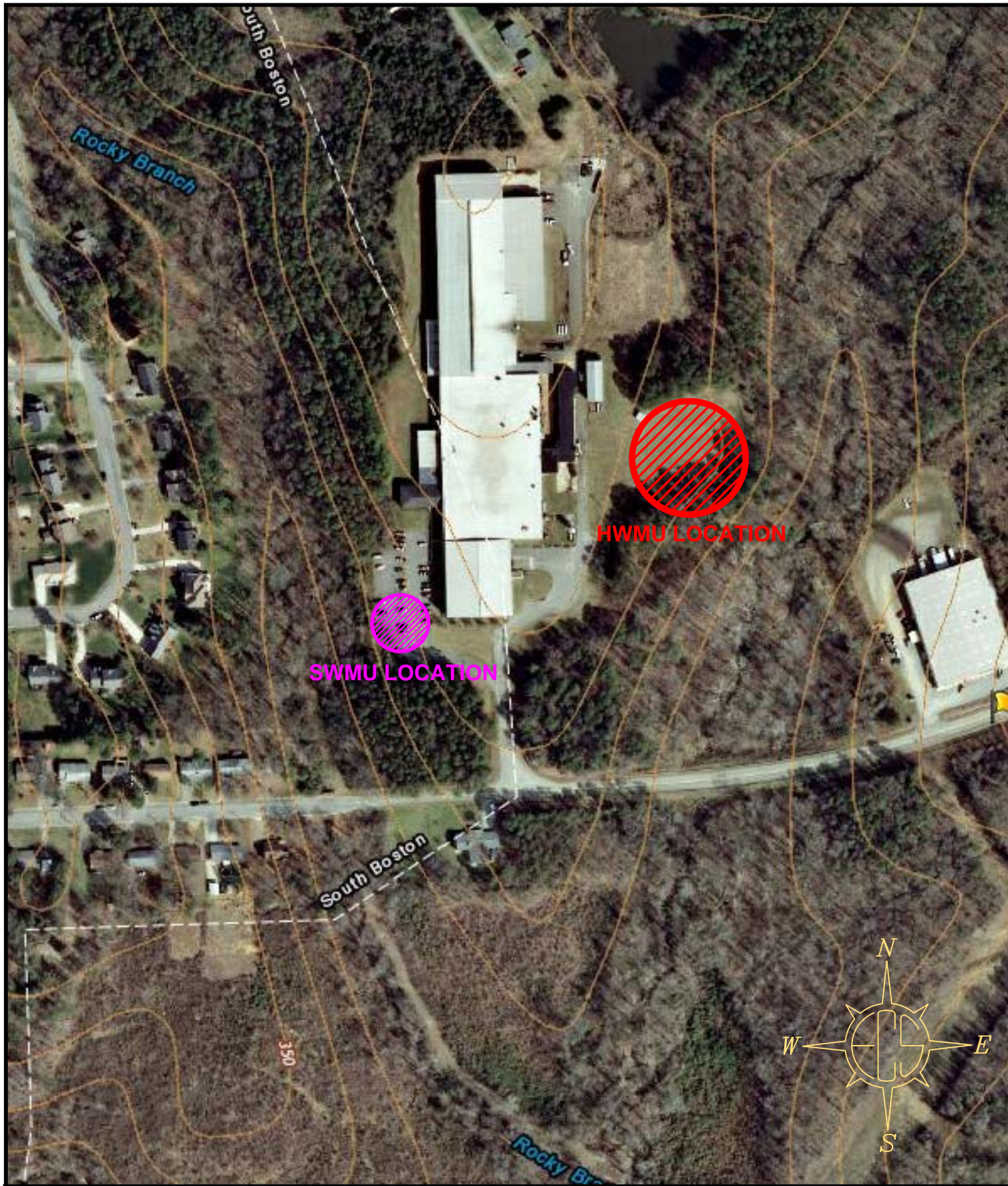
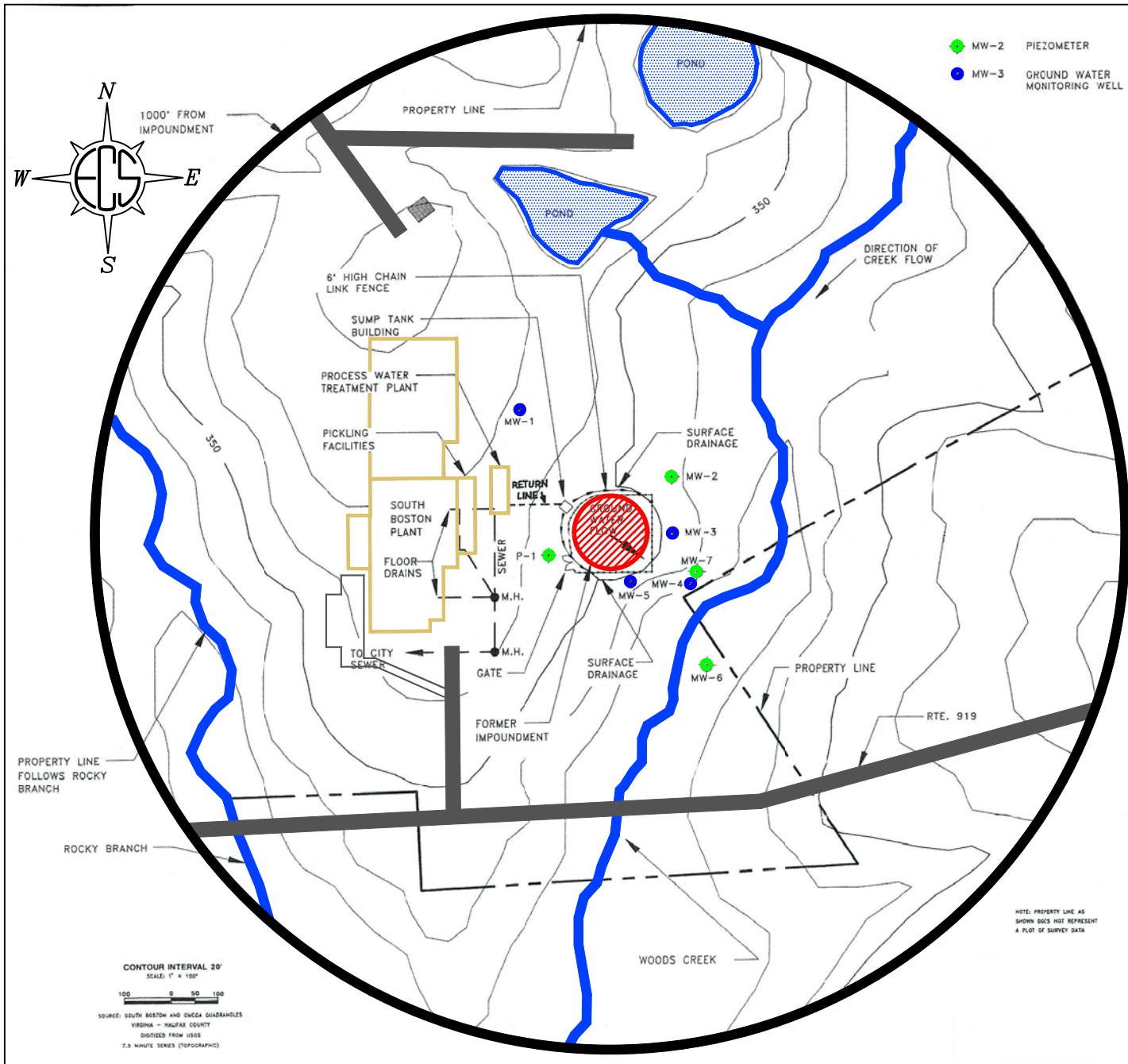


FIGURE 1 FACILITY LAYOUT MAP
BOHLER-UDDEHOLM - SOUTH BOSTON
EPA ID NO. VAD089022685

Figure 2 – Closed HWMU Location and Extent



HWMU Site Boundary



FIGURE 2 CLOSED HWMU LOCATION AND EXTENT
BOHLER-UDDEHOLM - SOUTH BOSTON
EPA ID NO. VAD089022685

Figure 3 – SWMU Location and Extent

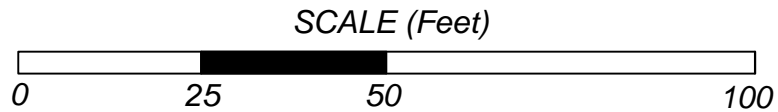
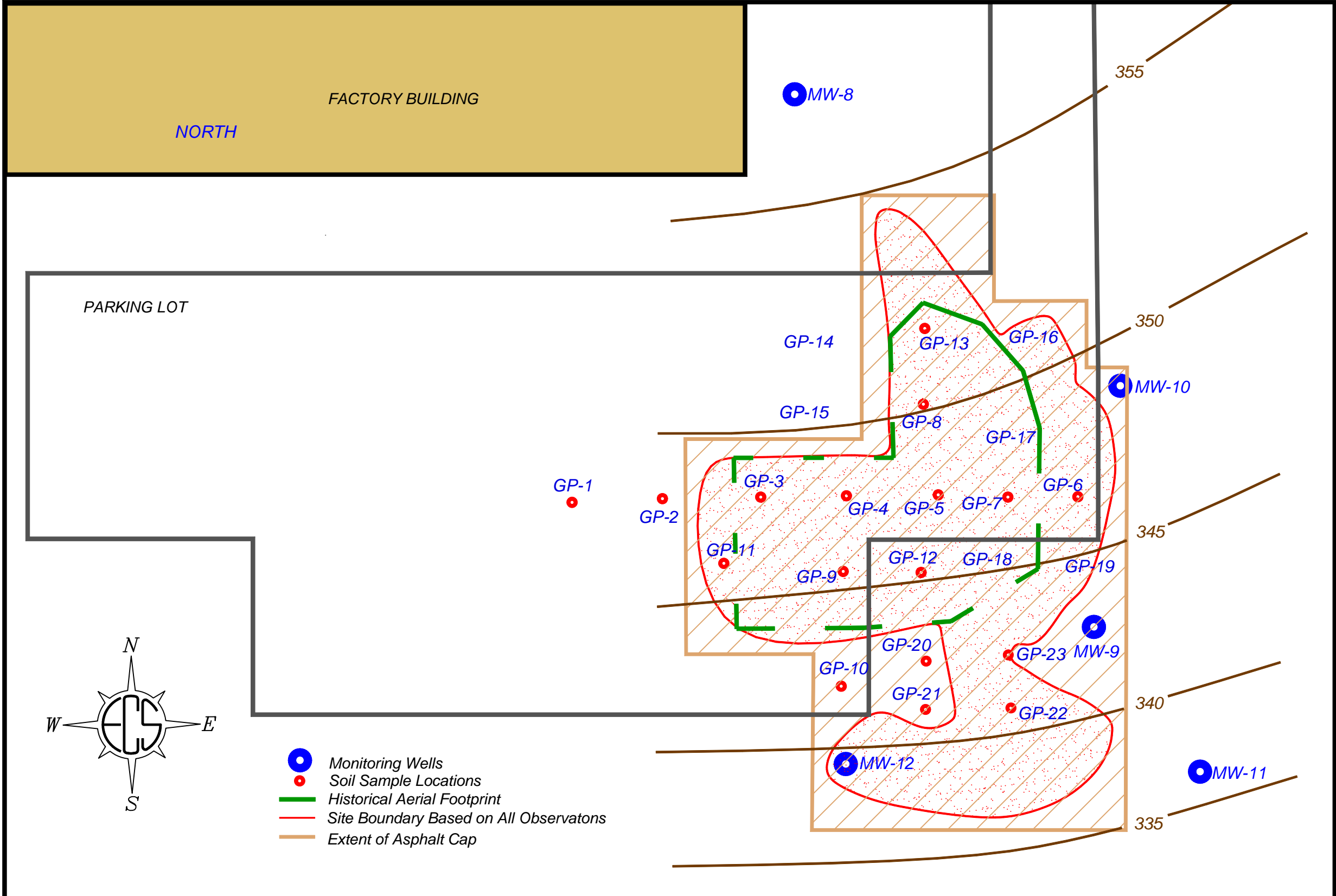


FIGURE 3 SWMU LOCATION AND EXTENT
 BOHLER-UDDEHOLM - SOUTH BOSTON
 EPA ID NO. VAD089022685

Administrative Record – Index of Documents for Statement of Basis

BÖHLER-UDDEHOLM SPECIALTY METALS, INC.
EPA ID NO. VAD089022685
South Boston, Virginia

ADMINISTRATIVE RECORD
INDEX OF DOCUMENTS FOR STATEMENT OF BASIS

This index includes documents that the Virginia Department of Environmental Quality (VDEQ) relied upon to develop and propose the final remedy selection determination described in the Statement of Basis. These documents were prepared for the Böhler-Uddeholm Specialty Metals, Inc. (BUSMI) facility and are listed chronologically by document date.

1. August 17, 2006, *Results for Soil Sampling and Laboratory Analysis – Former Sludge Disposal Area*, ECS Mid-Atlantic, LLC.
2. November 15, 2010, *RCRA Facility Investigation Report – Site Characterization Report*, ECS Mid-Atlantic, LLC.
3. March 22, 2012, *RFI Report – Approval*, VDEQ.
4. August 11, 2014, *Corrective Measures – Groundwater Sampling and Data Response Letter*, ECS Mid-Atlantic, LLC.
5. December 30, 2014, *Corrective Measures Study*, ECS Mid-Atlantic, LLC.
6. April 25, 2016, *Groundwater Sampling and Analysis Report – February 2016*, ECS Mid-Atlantic, LLC.
7. August 8, 2016, *Groundwater Sampling and Analysis Report – Concurrence*, VDEQ.
8. August 25, 2016, *Corrective Measures Study - Approval*, VDEQ.