UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

U.S. BRONZE FOUNDRY & MACHINE, INC.

WOODCOCK TOWNSHIP, PENNSYLVANIA

EPA ID NO. PAD004318416

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
August 2015

Table of Contents

Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the U.S. Bronze Foundry and Machine, Inc. (USBFMI) facility located at 18649 Brake Shoe Road in Woodcock Township, Pennsylvania (hereinafter referred to as the Facility). EPA's proposed remedy for the Facility consists of continued compliance with the restrictions and requirements contained in a 2010 Environmental Covenant for the South Parking Lot Site, a 2014 Environmental Covenant for the Metals Impacted Soils and Sediment (MISS) Site and their associated PADEP-approved Post Remediation Care Plans in order to control human and environmental exposure to hazardous constituents in Facility soils. This SB highlights key information relied upon by EPA in proposing its remedy for the Facility.

The Facility is subject to EPA's Corrective Action program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq. The Corrective Action program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their property. Pennsylvania is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the state for the Corrective Action Program.

EPA is providing a 30-day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended.

Information on the Corrective Action program as well as a fact sheet for the Facility can be found by navigating http://www.epa.gov/reg3wcmd/correctiveaction.htm. The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section 8, Public Participation, for information on how you may review the AR.

Section 2: Facility Background

2.1 Introduction

The Facility is located on approximately 40 acres in the southwest corner of Woodcock Township in Crawford County, approximately 2.5 miles north of Meadville, Pennsylvania. The Facility is bordered on the north and south by residential areas, on the west by French Creek and on the east by Conrail tracks and U.S. Route 19.

The Facility has been operated since 1947 by several companies including Pneumo Abex Corporation (ABEX), ABC Rail Corporation, and USBFMI for the production of non-ferrous brass and bronze castings. USBFMI, the current owner, operates the Facility as a foundry and machine shop producing non-ferrous castings as well as semi-finished and finished machined products.

In the early 1960s, ABEX used a 3.1-acre portion of the Facility southwest of the main building and South Parking Area as a landfill for the storage and disposal of various types of high metals content wastes (Landfill). The Landfill, which contains approximately 31,600 cubic yards of waste, was closed in 1985 under PADEP oversight and approval pursuant to Chapter 75 of PADEP's solid waste and hazardous waste regulations. ABEX also treated industrial waste in two wastewater treatment lagoons located west of the North Parking Area (Lagoons). ABEX identified the Lagoons as containing hazardous wastes in its 1981 Part A Application. The Lagoons were clay-lined and operated from an unknown date until 1984 when alternate methods of processing and recycling wastewater eliminated the wastewater discharge to the Lagoons. The Lagoons were also closed in 1985 under PADEP oversight and approval pursuant to Chapter 75 of PADEP's solid waste and hazardous waste regulations. The Landfill and two Lagoons were identified as Areas of Investigation. The remaining Areas of Investigation at the Facility are discussed in Section 2.2 below.

2.2 Areas of Investigation

Fuel Tank Area	This Area is located on the northeastern portion of the Facility where four (4) decommissioned 20,000-gallon aboveground storage tanks (ASTs) are located. The ASTs were used to store No. 1 and No. 2 fuel oil from 1947 through 1984. Based on soil sampling results in the PADEP-approved September 2006 Site Characterization Report (SCR), EPA has determined that no remedial activities are required at the Fuel Tank Area.
South Parking Lot Area	From 1959 through 1969, spent foundry sands containing elevated levels of metals, primarily lead (as high as 3,710 milligrams per kilogram (mg./kg.) compared to the non-residential soil medium specific concentration (MSC) of 450 mg./kg.), and limited

	quantities of other fill materials generated from Facility operations were placed in the South Parking Lot Area to bring that area to grade. In Fall 2008, an asphalt cover system was placed over the existing parking lot and a geocomposite cover system was placed on the western slope of this Area. EPA has determined that these covers, along with institutional controls designed to maintain the engineered components and limit future site activities in this Area, effectively eliminate potential future exposure pathways.
Slag Reclamation Basin/Bank Area	The Slag Reclamation Basin (SRB)/Bank Area (SRB Area) is comprised of a former wastewater management basin and its adjacent bank. The SRB Area is located in the north central portion of the Facility and extends onto an adjacent undeveloped portion of a residential property to the north. The SRB was used to manage solids from the reclamation process. At the time of the SCR, the SRB had been filled to grade with sludge, debris, and soils containing elevated concentrations of metals, primarily lead (as high as 4,040 mg./kg.). Waste materials including dried sludge and foundry sand were also present in the adjacent bank and on the adjacent residential property. Lead concentrations in the bank area were seen as high as 17,800 mg./kg. Approximately 4,500 cubic yards of waste materials were deposited in the SRB. In Fall 2012, Facility wastes and impacted soils from this area and the MISS Area (described below) were excavated and consolidated beneath an engineered cap in the SRB Area and in an adjacent area north of the North Parking Area. Soils on the adjacent neighboring property were cleaned up to meet PADEP's residential Statewide Health Standards.
Metals Impacted Soils and Sediment (MISS)	The MISS Area includes the entire Facility property except for the closed Landfill/Lagoons, Fuel Tank Area and South Parking Lot Area. Most of the surface and subsurface soil samples collected from the MISS Area did not exhibit elevated constituent concentrations. However lead was detected above its non-residential soil MSCs at a 2-acre area adjacent to the SRB Area (3,770 mg./kg.), at a 0.5-acre area in the Equipment Storage Area north of the foundry building (49,800 mg./kg.), at a 0.1-acre area north of the entrance road (2,600 mg./kg.), in sediments in a portion of the unnamed tributary adjacent to the SRB Area (1,890 mg./kg.), and in drainage features adjacent to stormwater outfalls (1,000 mg./kg.). In Fall 2012, impacted soils and sediments from these areas were excavated and consolidated beneath an engineered cap in the former SRB area and an adjacent area north of the North Parking Area.

Facility Groundwater	Groundwater from 12 monitoring wells, the Facility production well and one temporary monitoring well was sampled in 2003 and 2005 as part of the SCR. Groundwater monitoring results showed no exceedances of the applicable maximum contaminant levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1, for drinking water for any of the dissolved phase samples. Since the SCR was submitted, Arsenic has been detected slightly above its MCL at one well location. As discussed below, EPA has determined that the arsenic is not related to Facility activities.

Section 3: Summary of Environmental Investigations

3.1 Environmental Investigations

Numerous environmental investigations have been conducted at the Facility and are discussed in detail in the following reports, each of which is contained in the Administrative Record: Site Cleanup Final Report, Metals Impacted Soils and Sediments Site (October 2013); Final Report, South Parking Lot Site (October 2009); Final Report, Fuel Tank Area Site (September 2009); and Site Characterization Report (September 2006).

The above investigations were completed pursuant to PADEP's Land Recycling Program (Act 2) and sampling results in those reports were compared to Act 2 Statewide Health Standards (SHSs), otherwise known as Medium Specific Concentrations (MSCs). These standards are equivalent to EPA's Maximum Contaminant Levels (MCLs) for groundwater and the Region III Screening Levels (RSLs) for residential and industrial soil, for each of the identified constituents of concern (COCs).

The on-site landfill, North and South Lagoons, South Parking Lot Area, and SRB Area are all known to contain metals (primarily lead) contaminated wastes. In addition to lead, elevated concentrations of antimony and zinc have also been detected in waste materials within the above listed Areas of Investigation. However, each of these Areas has been addressed by consolidating and containing those wastes in place with maintained engineered covers or caps, thereby eliminating the possibility of an exposure pathway in those Areas.

All soils on the Facility property located outside of the capped areas described above meet PADEP's SHSs for non-residential usage. In addition, the SCR identified lead-bearing waste on a small unused portion of the adjacent residential property between that property's boundary and the unnamed tributary to French Creek. There was no evidence that waste materials migrated across the unnamed tributary to any used portions of the

residential property. The soils on the residential property have since been remediated to meet the residential SHSs.

3.1.2. Groundwater Investigation

The Facility is located within the Appalachian Plateau physiographic province and is underlain by the Mississippian Age Bedford Shale. The shale is overlain by till, which ranges in thickness from 25 feet to 50 feet and consists of poorly sorted silt, sand, gravel and clay. The uppermost water bearing zone occurs in the till under unconfined conditions and the depth to water is typically between 5 feet and 25 feet below the ground surface (bgs). This aquifer is used for water supply on site and potentially in the surrounding residential areas. Groundwater levels and the local topography both indicate that groundwater in the unconfined aquifer discharges into the adjacent French Creek and/or its unnamed tributary and groundwater flow direction is generally to the west/northwest across the Facility.

For the 2006 Site Characterization (SC), a Facility-wide groundwater monitoring network including 12 on-site monitoring wells, the Facility production well and one on-site temporary monitoring well was established. The network included five existing wells used to monitor the Landfill, three existing wells in the vicinity of the Slag Reclamation Basin, and four new wells (two installed in the South Parking Lot Area, one downgradient from the Fuel Tank Area and one downgradient from the contaminated soils in the field on the northern and western portion of the Facility).

Groundwater data associated with two rounds of sampling collected as part of the SC indicated several samples slightly exceeding the PADEP Statewide Health Standard (SHS) for total lead. However, dissolved lead concentrations at these locations were below the practical quantitation limit (PQL), and the total suspended solids concentration was elevated at each location where an exceedance for lead was observed. Based on the groundwater data, EPA has determined that the higher total lead concentrations were due to biases introduced during the sampling procedure and that the dissolved phase data are more representative of actual aquifer conditions. Arsenic is the only dissolved phase groundwater contaminant detected above its respective MCL of 10 µg//l. The elevated arsenic level (16.2 µg//l) was observed in one monitoring well, EX-3, located near the northwest corner of the SRB. Arsenic is not associated with any of the impacted site soils or buried wastes at the Facility. EPA has determined that its presence in groundwater at EX-3 is not due to Facility-related activities, but is most likely related to leaching of naturally occurring arsenic.

The Post-Remediation Care Plan requires five years of groundwater monitoring of the dissolved phase priority pollutant metals. If dissolved phase metals are not detected above the SHSs after five years, the groundwater monitoring program will be terminated.

3.1.3 Human Health Risk Assessment and Evaluation of Exposure Pathways

The proposed remedy provides long-term containment of metals-impacted foundry wastes and soils on-site. All wastes and impacted soils at the Facility have been excavated and consolidated beneath engineered cover systems. The remaining soils on-site outside of the engineered cover systems meet PADEPs non-residential SHSs and pose no significant risk to workers at the Facility. See the March 2011 Risk Assessment Report for more information.

3.1.4. Summary of Remedial Activities Completed

As described in Section 2.1 above, the Landfill located to the southwest of the main building and the two former Lagoons located west of the North Parking Area were closed under PADEP oversight and approval pursuant to Chapter 75 of PADEP's solid waste and hazardous waste regulations. An engineered cover designed to minimize infiltration of precipitation and promote drainage from the surface areas while minimizing erosion was installed on the landfill upon its closure in 1985. The remediation of the Lagoons consisted of the removal of all sludges and replacement with clean fill. As such, there was no need to install a low permeability cap on the Lagoons as no hazardous waste remained after the remediation and groundwater in the vicinity of the Lagoons had not been and continues to not be impacted by their former operation.

The asphalt cover system combined with the geocomposite cover system installed over the South Parking Lot Area in 2008 effectively eliminated the potential for future exposures to the hazardous levels of lead and other metals contained in the fill material buried beneath the cover systems.

Contaminated wastes/soils from the SRB and MISS Areas were consolidated within the SRB Area and an adjacent area north of the North Parking Area in 2012. The combined Area has been covered by an engineered cap eliminating the potential for future exposure. The maintenance requirements for all engineered covers at the Facility are stipulated in the Post Remediation Care Plan.

Because some contamination will remain in the soil at the Facility above levels appropriate for residential uses, PADEP approved two environmental covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517, (UECA). USBFMI recorded the first environmental covenant on the title to the Facility property on June 17, 2010 (2010 Environmental Covenant). This covenant addresses contamination associated with the South Parking Lot Area. USBFMI recorded the second environmental covenant on the title to the Facility property on August 4, 2014 (2014 Environmental Covenant). The 2014 Environmental Covenant prohibits residential use of the Facility property; prohibits excavation or disturbance of the cap associated with the MISS/SRB Area without prior PADEP approval, prohibits the installation of potable wells within the boundary of the MISS/SRB capped area, and

requires periodic inspection and maintenance of engineered caps. The 2010 Environmental Covenant is attached hereto as Exhibit A and the 2014 Environmental Covenant is attached hereto as Exhibit B.

3.2 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 both of these indicators on August 3, 2010.

Section 4: Corrective Action Objectives

EPA's Corrective Action Objectives for the specific environmental media at the Facility are the following:

1. Soils

EPA's Corrective Action Objective for Facility soils in areas located outside of the constructed caps is to attain PADEP's SHSs for non-residential usage and control exposure to hazardous constituents remaining in those soils. PADEP's SHSs for non-residential usage meet or are more conservative than EPA's acceptable risk range for non-residential usage. Therefore, EPA has determined that PADEP's SHSs for non-residential usage are protective of human health and the environment for individual contaminants at the Facility provided that the Facility is not used for residential purposes.

For those areas of the Facility that have excavated waste remaining in place under constructed caps, EPA's corrective action objective is to contain the waste beneath the cap to control exposure to the hazardous constituents in that waste.

2. Groundwater

EPA expects final remedies to return usable groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA will use the National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141).

Arsenic is the only contaminant in concentrations that exceed the applicable MCL in Facility groundwater. However, EPA has determined that arsenic is not a Facility-related contaminant, but is naturally occurring in the area of the Facility. EPA has determined that further remediation of arsenic would not provide a significant reduction in risks to actual or potential receptors.

While there are currently no Facility-related contaminants that exceed applicable MCLs, because waste remains in place at the Facility, EPA's Corrective Action Objective for Facility groundwater is to assure that the engineered cover systems currently in place at the Facility continue to prevent contaminants from migrating into Facility groundwater at concentrations that exceed applicable MCLs.

Section 5: Proposed Remedy

EPA's proposed remedy for the Facility is continued compliance with the restrictions and requirements in the 2010 and 2014 Environmental Covenants and associated Post Remediation Care Plans.

EPA has determined that the restrictions and requirements in the Environmental Covenants and Post Remediation Care Plans are necessary and sufficient to achieve EPA's Corrective Action Objectives as long as the necessary operation, maintenance and monitoring activities required by these documents are performed and land and groundwater use restrictions are maintained.

Specifically, with respect to Facility soils, the Environmental Covenants require, among other things, the periodic inspection and maintenance of the engineered cover systems over the South Parking Lot Area and SRB Area, and prohibits residential usage of the Facility property.

With respect to Facility groundwater, under the Post Care Remediation Plan, to protect human health and the environment in both the short-term and long-term and achieve EPA's cleanup objectives at the Facility, Facility wells will be monitored for dissolved priority pollutant metals for a minimum of five years from the October 2013 submittal of the Site Cleanup Final Report. If exceedances above applicable MCLs are encountered, EPA may determine that additional maintenance and monitoring activities, institutional controls, or other corrective actions are necessary to protect human health or the environment, after the necessary public participation requirements are met.

Section 6: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	The primary human health and environmental threats posed by contaminated soils at the Facility were related to direct contact with those soils. Additional threats were related to the potential for migration of contamination in the soils via soil erosion, surface water run-off and leaching to the ground water. The excavation, consolidation and containment of metals-impacted soils within the constructed engineered cap provides a physical barrier that prevents direct contact, eliminates migration pathways through soil erosion, and limits percolation through the soil and fill material to groundwater. Therefore, the proposed remedy eliminates or minimizes threats to human health and the environment provided that land use restrictions and post-remedial care are maintained.
2) Achieve media cleanup objectives	EPA's proposed remedy meets the media cleanup objectives based on assumptions regarding current and reasonably anticipated land use. The cleanup objective at the Facility is to contain the hazardous wastes that remain in place and control exposure to those wastes in a non-residential land use scenario. The proposed remedy meets this objective through the containment of metals-impacted soils within engineered caps and the implementation and maintenance of land use restrictions and post- remedial care.
3) Remediating the Source of Releases	The sources of releases from the Lagoons and MISS Area have been remediated. The sludges were excavated from the Lagoons and replaced with clean fill and the impacted soils and sediments from MISS Area were excavated and consolidated beneath an engineered cap in the former SRB area and an adjacent area north of the North Parking Area. The containment of metals-impacted soils within the engineered cap provides a physical barrier that will continue

	to prevent direct contact, eliminate migration pathways through soil erosion, and limit percolation through the materials to groundwater. Future risks related to direct exposures will be limited by land use restrictions and post-remedial care.

Balancing Criteria	Evaluation
4) Long-term effectiveness	The proposed remedy will remain protective of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils. EPA's proposed remedy requires the compliance with and maintenance of land use restrictions at the Facility, which are currently being implemented via the 2010 and 2014 Environmental Covenants. These covenant are enforceable by EPA and PADEP against current and future land owners. In addition to the activity and use limitations, there are requirements to inspect and maintain the protective cover systems overlying contaminated wastes/soils, which will ensure the long-term effectiveness of the proposed remedy.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The containment of the metals-contaminated soils beneath the low permeability engineered cover systems greatly reduces potential mobility of the encapsulated hazardous constituents.
6) Short-term effectiveness	EPA's proposed remedy does not involve any activities, such as construction or excavation that would pose short-term risks to workers, residents, and the environment. The land and groundwater use restrictions proposed in the remedy are already in effect at the Facility per the 2010 and 2014 Environmental Covenants.
7) Implementability	EPA's proposed remedy is readily implementable. EPA does not anticipate any regulatory constraints in implementing its proposed remedy. The land and groundwater use restrictions proposed in the remedy have already been implemented under the 2010 and 2014 Environmental Covenants.
8) Cost	EPA's proposed remedy is cost effective. The costs associated with this proposed remedy have already been incurred and the remaining costs are minimal (estimated cost of less than $10,000 per year for groundwater monitoring, engineered cover inspection/maintenance, etc.).

9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and will address comments received in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	PADEP has approved the Site Cleanup Final Report. If PADEP provides comments on the proposed remedy, EPA will address them in the Final Decision and Response to Comments.

Section 7: Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. Given that EPA's proposed remedy does not require any further engineering actions to remediate soil, groundwater or indoor air contamination at this time and given that the costs of complying with the 2010 and 2014 Environmental Covenants and associated Post Remediation Care Plan institutional controls at the Facility will be de minimis (estimated cost of less than $10,000 per year for groundwater monitoring, engineered cover inspection/maintenance, etc.), EPA is proposing that no financial assurance be required.

Section 8: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last 30 calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Andrew Clibanoff at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Andrew Clibanoff at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed remedy at this Facility. The Administrative Record is available at the following location:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Andrew Clibanoff (3LC30)
Phone: (215) 814-3391
Fax: (215) 814 - 3113
Email: clibanoff.andrew@epa.gov

Attachments:
Figure 1: Map of Facility
June 2010 Environmental Covenant, South Parking Site
August 2014 Environmental Covenant, MISS Site

Section 9: Signature

Date: _____ _____

John A. Armstead, Director
Land and Chemicals Division
US EPA, Region III

Section 10: Index to Administrative Record

File-Stamped Environmental Covenant, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, August 4, 2014.

Site Cleanup Final Report, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, October 2013.

Site Cleanup Plan, Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, Revised October 2011.

Risk Assessment Report (Revision 01), Metals Impacted Soils and Sediments Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, March 2011.

Supporting Documentation for Restoration Waiver, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, March 2011.

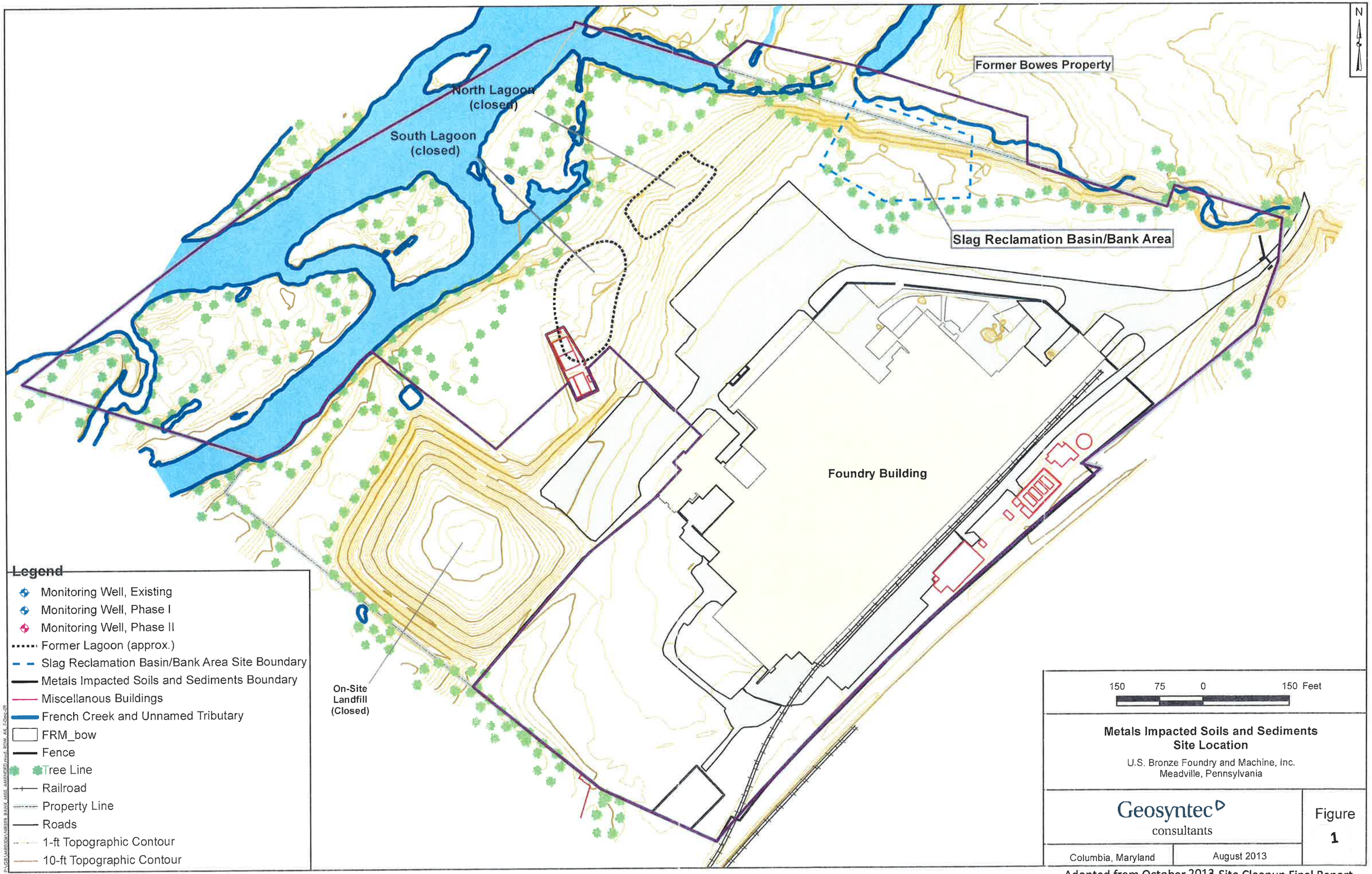
File-Stamped Environmental Covenant, South Parking Lot Area Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, June 2010.

Final Report, South Parking Lot Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, October 2009.

Final Report, Fuel Tank Area Site, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, September 2009.

Site Characterization Report, U.S. Bronze Foundry and Machine, Inc., Meadville, PA, prepared by Geosyntec Consultants, September 2006

Environmental Indicator Inspection Report, Foster Wheeler Environmental Corporation, prepared for PADEP and EPA, December 2002



Metals Impacted Soils and Sediments Site Location

U.S. Bronze Foundry and Machine, Inc.
Meadville, Pennsylvania

Geosyntec consultants

Columbia, Maryland | August 2013

Figure 1

Adopted from October 2013 Site Cleanup Final Report