UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

FORMER YORK NAVAL ORDNANCE PLANT
1425 EDEN ROAD

YORK, PENNSYLVANIA

EPA ID NO. PAD001673691

Prepared by
RCRA Corrective Action Branch 2
Land, Chemicals, and Redevelopment Division
December 2019

Table of Contents

List of Acronyms

AOC	Area of Concern
AR	Administrative Record
AST	Above-ground Storage Tank
bgs	below ground surface
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	Environmental Protection Agency
MCL	Maximum Contaminant Level
PADEP	Pennsylvania Department of Environmental Protection
PRCP	Post-Remediation Care Plan
RA/CP	Risk Assessment/Cleanup Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RSL	Regional Screening Level
SHS	Statewide Health Standard
SB	Statement of Basis
SSS	Site-Specific Standard
UST	Underground Storage Tank
VOC	Volatile Organic Compound

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 former York Naval Ordnance Plant (the Facility) located in York, Pennsylvania. EPA's proposed remedy for the Facility consists of operating and maintaining the existing groundwater extraction and treatment system (GWTS), the establishment of a Technical Impracticability (TI) Zone for groundwater, monitored natural attenuation outside the TI Zone, compliance with a Post-Remediation Care Plan (PRCP) and implementing land and groundwater use restrictions. 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. §§ 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. The Commonwealth of Pennsylvania is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth for the Corrective Action Program.

EPA is providing a thirty (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 https://www.epa.gov/hwcorrectiveactionsites/contact-information-corrective-action-hazardous-waste-clean-ups-delaware. 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, below, for information on how you may review the AR.

Section 2: Facility Background

The Facility is located at 1425 Eden Road, York, Pennsylvania 17402. It occupies approximately 230 acres bounded by commercial/industrial properties and Route 30 to the south, a railroad line and Codorus Creek to the west, and residential properties to the north, east, and southeast. A location map and Facility layout are attached as Figures 1 and 2, respectively.

The Facility was constructed in 1941 by the York Safe and Lock Company to produce armaments (primarily various large guns and their mounts, carriages, slides, and shields) for Department of Defense use during World War II. In 1944 an Executive Order permitted the government to possess and operate the Facility, which was renamed the U.S. Naval Ordnance Plant. After the Korean War, the Facility began to manufacture power drive units for the various gun configurations it produced. In 1964 the Facility was sold to American Machine & Foundry Company (AMF), which produced rocket launchers, gun components, and other ordnance-related materials for several years before ceasing ordnance manufacturing and switching to small vehicle manufacturing such as golf carts and snowmobiles. AMF and the Harley-Davidson Motor Company merged in 1969 to form Harley-Davidson, Inc. (Harley-Davidson), and moved its motorcycle assembly operations to the Facility in 1973.

In 2012, Harley-Davidson sold 58 acres of the Facility (an area known as the West Campus) to the York County Industrial Development Authority, which transferred ownership of the 58-acre property to the Redevelopment Authority of the County of York (RACY) in 2015. In 2017, RACY sold the 58-acre property to NP York 58, LLC, which constructed a 755,000 square-foot warehouse, known as the Eden Road Logistics Center, on the property in 2017. Harley-Davidson continues to use the remainder of the Facility for motorcycle assembly operations.

Section 3: Summary of Environmental Investigations

For all environmental investigations conducted at the Facility, groundwater concentrations were screened against federal 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, or if there was no MCL for a contaminant, EPA Region III Screening Levels (RSL) for tap water for chemicals. Soil concentrations were screened against EPA RSLs for industrial soil. For consistency with the AR, when discussing investigations performed under oversight of PADEP, Pennsylvania's non-residential Statewide Health Standards (SHS) and Site-Specific Standards (SSS) will be referenced herein where applicable.

EPA conducted a RCRA Facility Assessment of the Facility in 1989 that identified 73 solid waste management units (SWMUs), approximately half of which were recommended to be further investigated. As a result of the conclusions from this and previous investigations, Harley-Davidson constructed a GWTS in 1990 which discharged treated groundwater to a tributary of Codorus Creek and has continued to operate (with modifications) to the present.

In 1998, Harley-Davidson began a remedial investigation (RI) to characterize the Facility for the development of appropriate remedial measures. Potential source areas were investigated, a conceptual site model was developed, and migration/exposure pathways were evaluated. The RI concluded that a comprehensive document should be prepared that compiled completed remedial site activities and addressed identified data gaps. As a result, Harley-Davidson undertook supplemental remedial investigations for both soil and groundwater at the Facility.

Soils

Harley-Davidson submitted a draft Supplemental Remedial Investigations Soil Report in 2009 that characterized the nature and extent of the impact to soils in each of 27 AOCs subdividing the entire Facility. Fourteen samples exceeded at least one non-residential direct contact SHS (including lead, VOCs, PAHs, and PCBs); however, all but one of these exceedance locations were covered by pavement, roadway berm, or an impermeable cap which effectively limits exposure. Twelve of the 27 AOCs contained samples that exceeded at least one non-residential used aquifer soil-to-groundwater SHS (including chlorinated solvents, heavy metals, toluene, PAHs, and PCBs). The exposure pathway evaluation included incidental ingestion, dermal contact, and inhalation of dust and volatiles for both on- and off-site receptors; however, because shallow soils with concentrations of COCs exceeding SHS are covered with impermeable membranes, buildings, or parking areas, the shallow soil pathway is incomplete, except for construction workers. EPA and PADEP approved the Supplemental Remedial Investigations Soil Report in March 2010.

In 2012, Harley-Davidson performed a site-specific risk assessment using the results of the Supplemental Remedial Investigations Soil Report to estimate potential human health hazards and risks associated with hypothetical exposure to COPCs in soil at the Facility. Harley-Davidson then compared these results to Act 2 risk-based standards to demonstrate attainment of the site-specific standards for soil. Noncarcinogenic hazards for each receptor were below EPA's

acceptable Hazard Index of 1.0, and carcinogenic risks for each receptor were within or below EPA's acceptable risk range of 10^{-4} to 10^{-6}. In July 2012, EPA and PADEP approved the Soils Risk Assessment Report.

Groundwater

Harley-Davidson submitted Part 1 of the Supplemental Remedial Investigation Groundwater Report (Groundwater Report) in 2011. This Groundwater Report summarized environmental investigations completed at the Facility from 1984 to 2006 and developed conclusions regarding groundwater conditions based on analysis of the entire body of information and data collected from 1984 to 2010. The Groundwater Report described the geology and hydrogeology, nature and extent of contaminants, and fate and transport of contaminants in groundwater beneath the Facility.

Two primary geologic units underly the Facility: a fractured quartzitic sandstone in the eastern, mostly undeveloped portion of the Facility, and karstified carbonate rock throughout the remainder of the Facility. The carbonate rock is well connected due to high fracture permeability and a vast network of solution channels. Groundwater generally flows from east to west across the Facility, from the high topographic areas underlain by sandstone to the generally flat western half of the Facility underlain by the carbonate rock (limestone and dolomite). More detailed geologic and hydrogeologic information can be found in Part 2 of the Groundwater Report.

The primary contaminants in groundwater beneath the Facility are chlorinated volatile organic compounds (CVOCs) which were used and disposed at, spilled, or leaked from the Facility from the 1940s to the 1980s. Concentrations of CVOCs exceeded applicable SHSs throughout most of the Facility, with maximum concentrations of TCE exceeding its SHS/MCL by three orders of magnitude in a few wells in the western portion of the Facility. Groundwater contamination is also vertically extensive beneath the Facility (over 200 feet below ground surface) due to contaminant plumes of dense non-aqueous phase liquid (DNAPL) sinking and migrating through the karst solution channels of the carbonate aquifer. Groundwater beneath the Facility eventually discharges to Codorus Creek; however, the GWTS has effectively reduced contaminant discharges so that Pennsylvania's Ambient Water Quality Criteria (AWQC) for site-related contaminants are met in that creek.

A preliminary exposure pathway assessment was also included in Part 1 of the Groundwater Report, along with several recommendations for further investigation (to be included in Part 2 of the groundwater investigation) to address identified data gaps. EPA and PADEP approved Part 1 of the Groundwater Report in February 2012.

Harley-Davidson submitted Part 2 of the Groundwater Report in 2016, with a revised version submitted in March 2018 that addressed several EPA comments. The Part 2 Groundwater Report addressed data gaps associated with the nature and extent of contamination, hydraulic characteristics of the karst aquifer, contaminant fate and transport, source area investigations, and an assessment of the GWTS. Portions of the GWTS in the Northern Property Boundary Area and the Building 3 Footer Drain were shut down and monitored to determine whether groundwater extraction in these areas could be permanently discontinued. Five years of post-

shutdown monitoring in the Northern Property Boundary Area and three years of post-shutdown monitoring in the Building 3 Footer Drain have demonstrated that groundwater extraction in these areas was no longer necessary, and the portions of the GWTS in these areas remain shut down. Groundwater extraction in the West Parking Lot Area was optimized and shown to be effective in capturing groundwater from deep karst conduits. Although the portion of the GWTS in the West Parking Lot Area continues to operate as optimized to prevent contaminated groundwater from discharging into Codorus Creek above AWQC, the investigations and testing conducted for the Part 2 RI Report suggested that continued removal actions and operation of the GWTS would not result in meaningful additional improvement to groundwater quality beneath the Facility due to the majority of CVOC mass in the aquifer being diffused into and sorbed onto/within the aquifer matrix. PADEP and EPA approved Part 2 of the Groundwater Report in June and July 2018, respectively.

Harley-Davidson submitted a Groundwater Human Health Risk Assessment (RA) in 2016, with a revised version submitted in March 2018 that addressed several EPA comments. The RA evaluated potential exposures to a variety of current and potential future worker scenarios and a recreational wader scenario within seven land use areas within and surrounding the Facility. Incremental lifetime cancer risk for an on-site utility worker exposure scenario was exceeded in the area of the Facility above a petroleum plume (see Figure 2) in groundwater primarily due to the reasonable maximum concentration of benzene calculated for the area. Exceedances of the target hazard index were observed for all on-site worker scenarios and for off-site utility workers where groundwater is within 15 feet of the ground surface; therefore, caution was advised and controls recommended for conducting intrusive activities, and vapor intrusion should be assessed and/or protective controls planned prior to building in some areas of the West Campus. PADEP and EPA approved the Groundwater Human Health Risk Assessment in June and July 2018, respectively.

As part of the response to EPA comments on Part 2 of the Groundwater Report, Harley-Davidson submitted a separate report specific to the Southern Property Boundary Area. The Southern Property/South Plume Areas Supplemental Remedial Investigation and Interim Groundwater Remediation Report (Southern Property Report) was submitted in November 2018, with a revision submitted in February 2019 that addressed a few minor comments and clarifications. The Southern Property Report updated the conceptual site model in this area to show the CVOC plume initiating on-site, draining into the carbonate below, then migrating to the south/southwest, with groundwater from this area eventually discharging to Codorus Creek. Additional wells were installed and testing performed to determine whether shallow water levels on-site could be depressed enough to reverse groundwater flow off-site in this area. As a result, three collection wells along the Southern Property Boundary Area were added to the existing GWTS to collect and treat contaminated groundwater in this area and maintain a groundwater gradient from off-site to on-site (i.e., groundwater capture within an approximate 150-foot radius of the collection wells). The GWTS, as optimized, began operation in October 2018. EPA approved the Southern Property/South Plume Areas Supplemental Remedial Investigation and Interim Groundwater Remediation Report in February 2019.

Harley-Davidson submitted a Proposed Plan – Final Remedy report in December 2018, with a revision submitted in July 2019 based on EPA comments submitted in March 2019 primarily

related to the delineation of the Technical Impracticability (TI) zones. This report summarized the Corrective Action Objectives as agreed upon by EPA, PADEP, and Harley-Davidson, and presented the components of the proposed final remedy for the Facility, including both on- and off-site components. On-site components include the GWTS in the West Parking Lot and Southern Property Boundary areas, environmental covenants to restrict land and groundwater use and require worker protections during excavations and maintenance of caps, mapping of existing caps and impervious areas, and defining TI zones for groundwater.

Munitions Response Activities

Since the Facility had been used to produce armaments, separate investigations under the Military Munitions Response Program (MMRP) were conducted to ensure that munitions and explosives of concern (MEC) and munitions components (MC) were adequately characterized and removed from the Facility in order to protect human health and the environment. Beginning in 1984, multiple investigations were conducted, including removal actions in 1993 and 2004, and an electromagnetic survey and focused site investigation in 2007.

The MMRP Remedial Investigation (RI) Report was submitted in March 2018 and summarizes work conducted from 2016 to 2017 that investigated the Munitions Response Areas (MRAs) identified at the Facility and evaluated risks from MEC and MC. The investigation consisted of a surface clearance using analog and digital geophysical methods and mapping, an intrusive anomaly investigation, and soil and groundwater sampling within the MRAs. Based on the results of the investigation and risk assessment, eight MRAs were recommended for further evaluation. EPA and PADEP approved the MMRP RI report in July 2018.

A MMRP Remedial Alternatives Analysis Report was submitted in January 2019. Remedial alternatives considered ranged from no action to a complete surface and subsurface clearance of MEC and removal of process materials to achieve unlimited use and unrestricted exposure throughout all MRAs. The MMRP Remedial Alternatives Analysis Report recommended an alternative consisting of a complete surface and subsurface clearance of MEC in areas of greatest risk based on the findings of the MMRP RI and in areas of greatest potential human exposure, and land use controls including fencing and surveillance in lower-risk areas to protect human health and the environment.

Section 4: Corrective Action Objectives

A. Soils

Several soil cleanups have occurred under PADEP and EPA oversight as part of remedial investigations, building demolitions, and road rerouting. No significant exposures to soil occur at the Facility since minimal operations occur outdoors, frequented areas are covered by asphalt/gravel paving or buildings, and the Facility is fully fenced and patrolled by security personnel to deter trespassing. Therefore, EPA's Corrective Action Objectives for soil are to:

1) Prevent direct contact exposure to chemicals and munitions constituents/process materials where concentrations exceed Residential RSLs in soil;
2) Prevent direct contact exposure to chemicals and munitions constituents/process materials where concentrations exceed Industrial RSLs in soil;
3) Reduce potential exposure to munitions and explosives of concern (MEC)/process materials to de minimis levels; and
4) Prevent chlorinated VOCs, SVOCs, and metals from leaching and impacting groundwater above appropriate groundwater MCLs.

B. Groundwater

EPA expects final remedies to return usable groundwater to its maximum beneficial use within a timeframe that is reasonable given the site-specific conditions. For facilities associated with aquifers that are either currently used for water supply or have the potential to be used for water supply, EPA will require the groundwater be remediated to 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 C.F.R. Part 141, or to EPA Regional Screening Levels (RSLs) for tap water for chemicals for which there are no applicable MCLs. However, if cleanup to MCLs is not technically practicable, EPA expects facilities to prevent or minimize the further migration of a plume, prevent exposure to contaminated groundwater, and evaluate further risk reduction. Technical impracticability (TI) refers to a situation where achieving groundwater cleanup standards is not practicable using current engineered treatment solutions when feasibility, reliability, project magnitude, and safety are considered.

EPA has determined that remediation of groundwater to MCLs beneath two areas of the Facility is technically impracticable. Currently available remedial technologies would not result in significant improvement, i.e., reducing PCE to its MCL, in a reasonable timeframe due to the karst geology of the area and the amount of PCE contamination that is bound within the aquifer matrix as DNAPL. Therefore, EPA is proposing to establish TI zones as defined in the attached Facility Diagram (see Figure 2).

Groundwater contamination is extensive throughout the Facility but is concentrated primarily in the western half of the property (TI Zone 1), where high concentrations of chlorinated VOCs predominate. Groundwater is not used as a drinking water source at or near the Facility.

Construction and/or utility workers could potentially be exposed to contaminated groundwater during intrusive activities conducted in areas where depth to water is less than 15 feet; these areas are generally the central-eastern and north-northwestern areas of the Facility and off-site areas to the west and south. As detailed in the risk assessment for groundwater, no other direct exposures to groundwater are considered significant.

Therefore, EPA's Corrective Action Objectives for groundwater beneath the Facility are to:

1) Prevent exposure to the Facility-related hazardous constituents that remain in the groundwater;
2) Attain applicable MCLs throughout the plume outside of the TI zones;
3) Ensure that the groundwater plume is contained and will not migrate beyond the extent of the current groundwater plume; and
4) Ensure that no groundwater discharge concentrations would result in surface water concentrations that are above the Pennsylvania AWQC.

C. Surface Water

As documented in the Groundwater Reports, groundwater from beneath the Facility eventually discharges to Codorus Creek. The stretch of Codorus Creek adjacent to and downstream of the Facility is not used as a drinking water source but is used recreationally.

Therefore, EPA's Corrective Action Objective for surface water is to:

1) Prevent exceedances of AWQC for Facility-related contaminants in Codorus Creek.

D. Subsurface Vapor Intrusion

Volatile contaminants in groundwater have the potential to migrate into the indoor air of buildings overlying contaminated groundwater by vapor intrusion. As documented in the risk assessment for groundwater, some areas of the Facility contain contaminant concentrations in groundwater such that predicted indoor air concentrations would potentially present significant risk.

Therefore, EPA's Corrective Action Objective for indoor air is to:

1) Prevent exceedances of Industrial Air RSLs by vapor intrusion into current and hypothetical future on-site buildings, or Resident Air RSLs by vapor intrusion into current and hypothetical future off-site buildings, as applicable.

Section 5: Proposed Remedy

A. Soils

EPA's proposed remedy for soils consists of the following components:

1) The Facility property shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy and EPA provides prior written approval for such use;
2) All earth moving activities, including excavation, drilling and construction activities, in the areas at the Facility where any contaminants remain in soils above EPA's Screening levels for non-residential use shall be managed in accordance with a Post-Remediation Care Plan (PRCP) to be approved by EPA and with appropriate local, state, and federal regulations;
3) Any intrusive operations conducted within the TI Zones shall be conducted in accordance with an EPA-approved soils management and worker protection program, which will be outlined in a PRCP to be approved by EPA;
4) Existing caps shall be maintained in accordance with the EPA-approved PRCP to prevent potential direct contact to remaining contaminated soil, fill, and/or waste and reduce potential leaching from remaining contaminated soil, fill and/or waste to groundwater;
5) Continued non-residential land use in the off-site area west of the Facility to Codorus Creek shall be confirmed periodically in accordance with the EPA-approved PRCP; and
6) A complete surface and subsurface clearance of MEC shall be conducted in AOI 1 and the western portion of the Remainder RI Area (as defined in MMRP RI and Figure 3) to achieve unlimited use/unrestricted exposure, and security measures such as fencing and surveillance shall be maintained to control access/exposure to remaining Munitions Response Areas.

B. Groundwater

EPA's proposed remedy for groundwater consists of the following components:

1) Groundwater beneath the Facility shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by EPA, unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy, and EPA provides prior written approval for such use;
2) Operational, inspection, and maintenance procedures for the GWTS shall continue in accordance with the EPA-approved PRCP unless future investigations demonstrate that contaminant concentrations in groundwater do not pose any unacceptable risks to human health or until EPA approves in writing of the cessation of the GWTS;
3) TI Zones shall be established in the western portion of the Facility and the Southern Property Boundary Area (SPBA), as shown on Figure 2;
4) The hydraulic gradient in the SPBA shall be controlled such that water levels in on-site

wells immediately within the Facility property line (e.g., MW-162) are lower than water levels in off-site wells immediately outside the Facility property line (e.g., MW-167);
5) Groundwater monitoring shall be performed in accordance with the EPA-approved PRCP to i) document temporal trends in the nature and lateral extent of VOC plumes associated with suspected DNAPL sources, ii) assess progress of natural attenuation in VOC concentrations outside the TI Zones, iii) confirm VOC mass flux reduction to Codorus Creek, and iv) confirm hydraulic control of shallow groundwater in the SPBA; and
6) Continued nonuse of groundwater in surrounding off-site areas shall be confirmed periodically in accordance with the EPA-approved PRCP, including appropriate notifications to property owners (e.g., notification to owners of industrial properties south of Facility regarding potentially complete exposure pathway to groundwater by utility/construction workers where groundwater is less than 15 feet bgs).

C. **Surface Water**

EPA's proposed remedy for surface water consists of the following components:

1) Groundwater extraction shall be performed to reduce VOC mass flux discharge into Codorus Creek such that Pennsylvania AWQC are met within the creek; and
2) Surface water monitoring shall be performed in accordance with the EPA-approved PRCP to confirm that AWQC are being met within Codorus Creek.

D. **Subsurface Vapor**

EPA's proposed remedy for subsurface vapor consists of the following components:

1) Monitoring and maintenance procedures for the vapor barrier beneath the Eden Road Logistics Center shall continue in accordance with the EPA-approved PRCP; and
2) Each building or structure to be constructed and that will be inhabited shall be evaluated for the potential for vapor intrusion into such building or structure prior to the building or structure being constructed. Additional remedial measures, as necessary, shall be performed to mitigate unacceptable risks associated with vapor intrusion into the building or structure.

E. **Additional Requirements**

1) On an annual basis and when requested by PADEP or EPA, submit a written certification of compliance with all terms of the Final Remedy.

2) Within one month after any of the following events, require the then current owner to submit written documentation to PADEP and EPA describing any:

- observed noncompliance with groundwater use restrictions,
- transfer of ownership,
- change in land use,
- application for building permits, and

- proposed site work that could affect the effectiveness of the final remedy.

3) Generally, prohibit any use of the Facility that would adversely affect the protectiveness of the Final Remedy.

4) EPA will require the owner(s) of the Facility to include a coordinate and metes and bounds survey of the Facility boundary in the enforceable mechanism which implements the Final Remedy. At a minimum, the coordinate survey would be in a form amenable to publicly accessible mapping programs (e.g., Google Earth® or Google Maps®) and include boundaries of each area under a use restriction defined as polygons using the World Geodetic System (WGS) 1984 datum, with the latitude and longitude of each polygon vertex in decimal degrees format to at least seven decimal places and a negative sign used for west longitude.

F. Implementation

EPA proposes that the Final Remedy for the Facility be implemented through an enforceable mechanism such as a permit, order, and/or an Environmental Covenant. If an Environmental Covenant is selected as the enforceable mechanism, it will be recorded in the chain of title for the Facility pursuant to the Pennsylvania Uniform Environmental Covenants Act.

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	EPA's proposed remedy protects human health and the environment from exposure to contamination, including future risks, through the implementation and maintenance of use restrictions. These restrictions will effectively: 1) eliminate potential for on-site use of groundwater; 2) reduce potential for off-site groundwater use; 3) eliminate, reduce, or control exposures to hazardous substances in on-site and off-site groundwater; 4) eliminate, reduce, or control exposures to hazardous substances in on-site soils and wastes; 5) eliminate potential for VI into existing or future buildings; and 6) reduce chemical mass flux in groundwater discharges to Codorus Creek.
2) Achieve media cleanup objectives	EPA's proposed remedy meets the media cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource use(s). While the proposed remedy does not meet groundwater cleanup standards that would allow for the beneficial use of groundwater within the TI Zones, the proposed use restrictions will eliminate future unacceptable exposures to both soil and groundwater. Relevant cleanup standards (i.e., Industrial Soil RSLs, MCLs, and Pennsylvania AWQC) will be met outside the proposed TI Zones.
3) Remediating the Source of Releases	In all proposed remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. The Facility has met this objective, to the extent feasible, by performing various waste and contaminated soil removals, and operating the GWTS since 1990. Therefore, EPA has determined that this criterion has been met.

Balancing Criteria	Evaluation
4) Long-term effectiveness	The long-term effectiveness of the proposed remedy will be maintained by appropriate soil management procedures,

	adherence to the PRCP, and the implementation of use restrictions.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The proposed remedy does not involve remedial actions that would substantially reduce the toxicity or mobility of contaminants. Reduction of the volume of hazardous constituents in soil and groundwater has been achieved through numerous waste and soil removal actions and the continued operation of the GWTS.
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/or the environment. EPA anticipates that the land use restrictions will be fully implemented shortly after the issuance of the Final Decision and Response to Comments.
7) Implementability	EPA's proposed remedy is readily implementable. Many of the elements of the remedy area already in place or being actively implemented as interim remedial measures. EPA proposes to implement the use restrictions through an enforceable mechanism such as an Environmental Covenant, permit and/or order.
8) Cost	EPA's proposed remedy is cost effective. The projected costs ($4,800,000 construction cost and $15,000,000 O&M cost over 30 years) to implement the proposed remedy are reasonable compared to other potentially available alternatives.
9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and it will be described in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	PADEP has reviewed and concurred with the proposed remedy.

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 requires, in addition to implementing institutional controls and continued groundwater monitoring, continued operation and maintenance of the GWTS, financial assurance in the amount of $7,050,000 (representing 30 years of GWTS operation at an estimated cost of $500,000 annually, with non-government cost sharing at 47%) will be required to ensure that contaminated groundwater discharge into Codorus Creek does not result in exceedances of AWQC.

Section 8: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, or electronic mail to Mr. Griff Miller at the contact information listed below.

A public meeting may be held upon request. Requests for a public meeting should be submitted to Mr. Miller in writing at the contact information 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: Mr. Griff Miller (3LD20)
Phone: (215) 814-3407
Fax: (215) 814 - 3113
Email: miller.griff@epa.gov

Attachments:
Figure 1: Location Map
Figure 2: Facility Diagram
Figure 3: MMRP Remedial Investigation Areas

Date: 12/27/19

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

Section 9: Index to Administrative Record

Phase II RCRA Facility Assessment Report of the Harley-Davidson York, Inc. Facility, prepared by A.T. Kearney, January 1989.

Interim Site-wide Remedial Investigation Report – Harley-Davidson Motor Company, prepared by Langan, July 2002.

Draft Supplemental Remedial Investigations Soils Report, prepared by SAIC, December 2009.

Supplemental Remedial Investigation Groundwater Report (Part 1), prepared by GSC, September 2011.

Soils Risk Assessment, prepared by GSC, March 2012.

Supplemental Remedial Investigation Groundwater Report (Part 2), prepared by GSC, August 2016, revised March 2018.

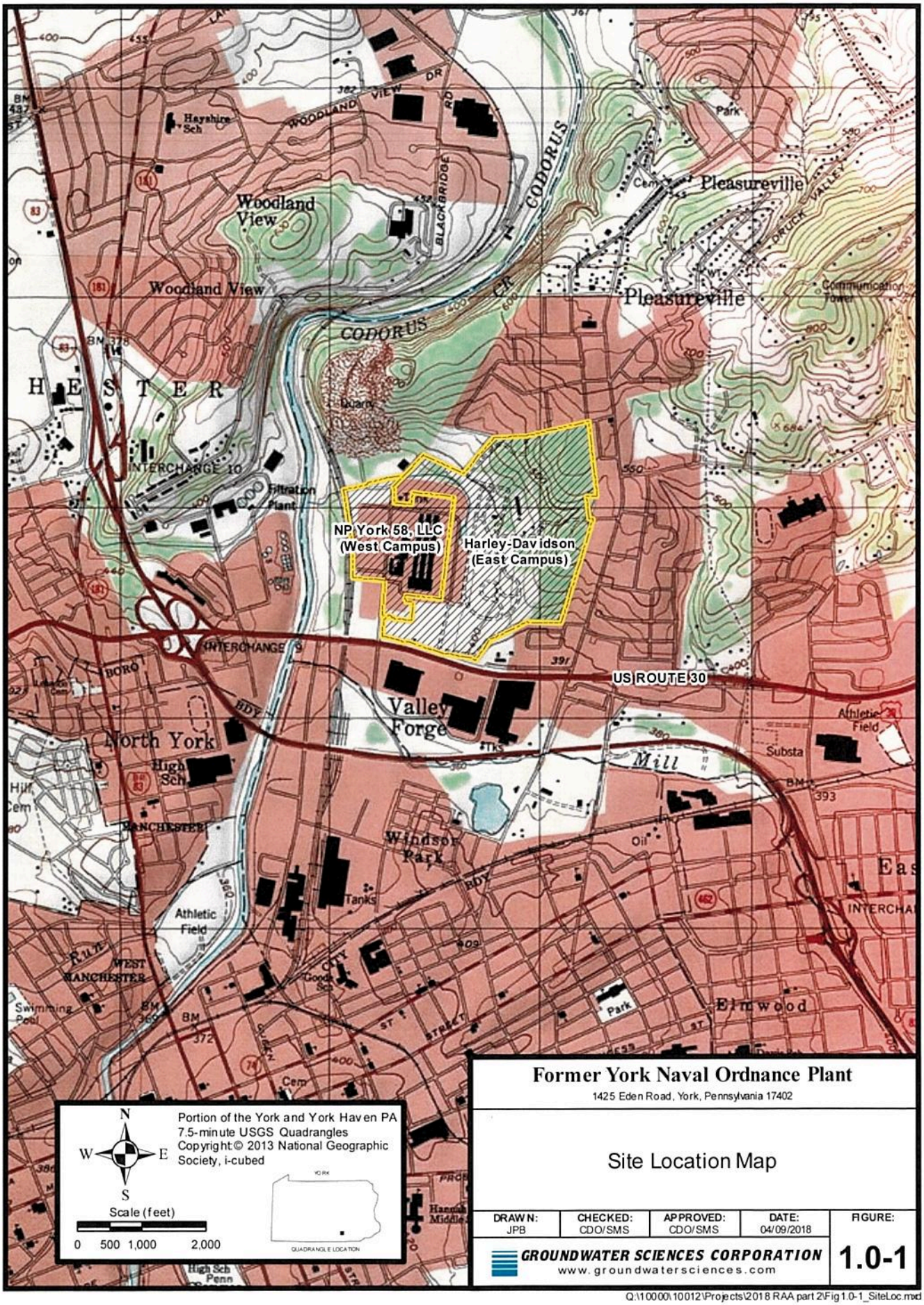
Draft Final MMRP Remedial Investigation Report for fYNOP, prepared by EA, March 2018.

Revised Groundwater Human Health Risk Assessment, prepared by Newfields, March 2018.

Southern Property Boundary/South Plume Areas Supplemental Remedial Investigation and Interim Groundwater Remediation Report, prepared by GSC, November 2018, revised February 2019.

Proposed Plan – Final Remedy, prepared by GSC, December 2018, revised July 2019.

Final MMRP Remedial Alternatives Analysis for fYNOP, prepared by EA, January 2019.



Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

Site Location Map

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO/SMS	CDO/SMS	04/09/2018	1.0-1

GROUNDWATER SCIENCES CORPORATION
www.groundwatersciences.com

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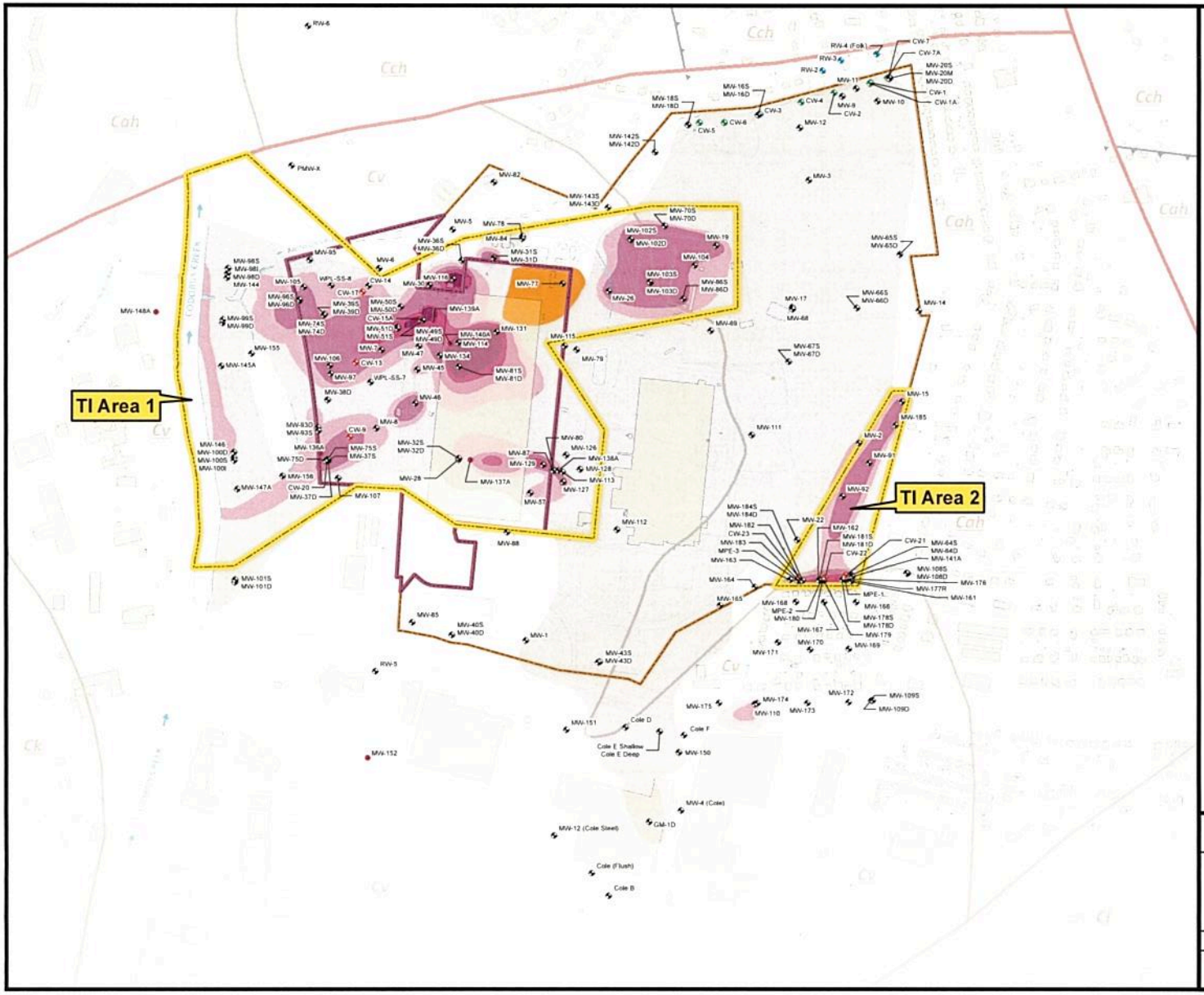

LEGEND

- Active Collection Well
- Inactive Collection Well
- Monitoring Well
- Residential Well
- Waterloo™ Monitoring Well
- Proposed Technical Impracticability (TI) Boundary
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Block Fault
- Thrust Fault
- Ledger Formation (Cl)
- Kinzers Formation (Ck)
- Vintage Formation (Cv)
- Antietam & Harpers Formation, undiv. (Cah)
- Chickies Formation (Cch)
- Existing Building
- Demolished/Slab Remains
- Demolished/Slab Removed
- Railroad
- Road, Curb or Walkway
- Fenceline
- Existing Stream
- Existing Water Feature
- Wetland Boundary (2006)
- TCE/PCE Concentration >5 <50 µg/L
- TCE/PCE Concentration >50 <100 µg/L
- TCE/PCE Concentration >100 <500 µg/L
- TCE/PCE Concentration >500 <1,000 µg/L
- TCE/PCE Concentration >1,000 <10,000 µg/L
- TCE/PCE Concentration >10,000 µg/L
- Petroleum Plume

N W E S

NOTES:
1) TCE/PCE plumes are from the Part 2 SRI for groundwater (GSC, 2018). Concentrations are for the shallow portion of the aquifer (defined as any well monitoring groundwater within approximately 75 feet of the ground surface).
2) Proposed monitoring well (PMW-X) is to be installed and the location is approximate (to be determined based on site access and other considerations).

Scale (feet)
0 150 300 600

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

Technical Impracticability (TI) Areas

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	SMS	4/25/2019	3.1-1

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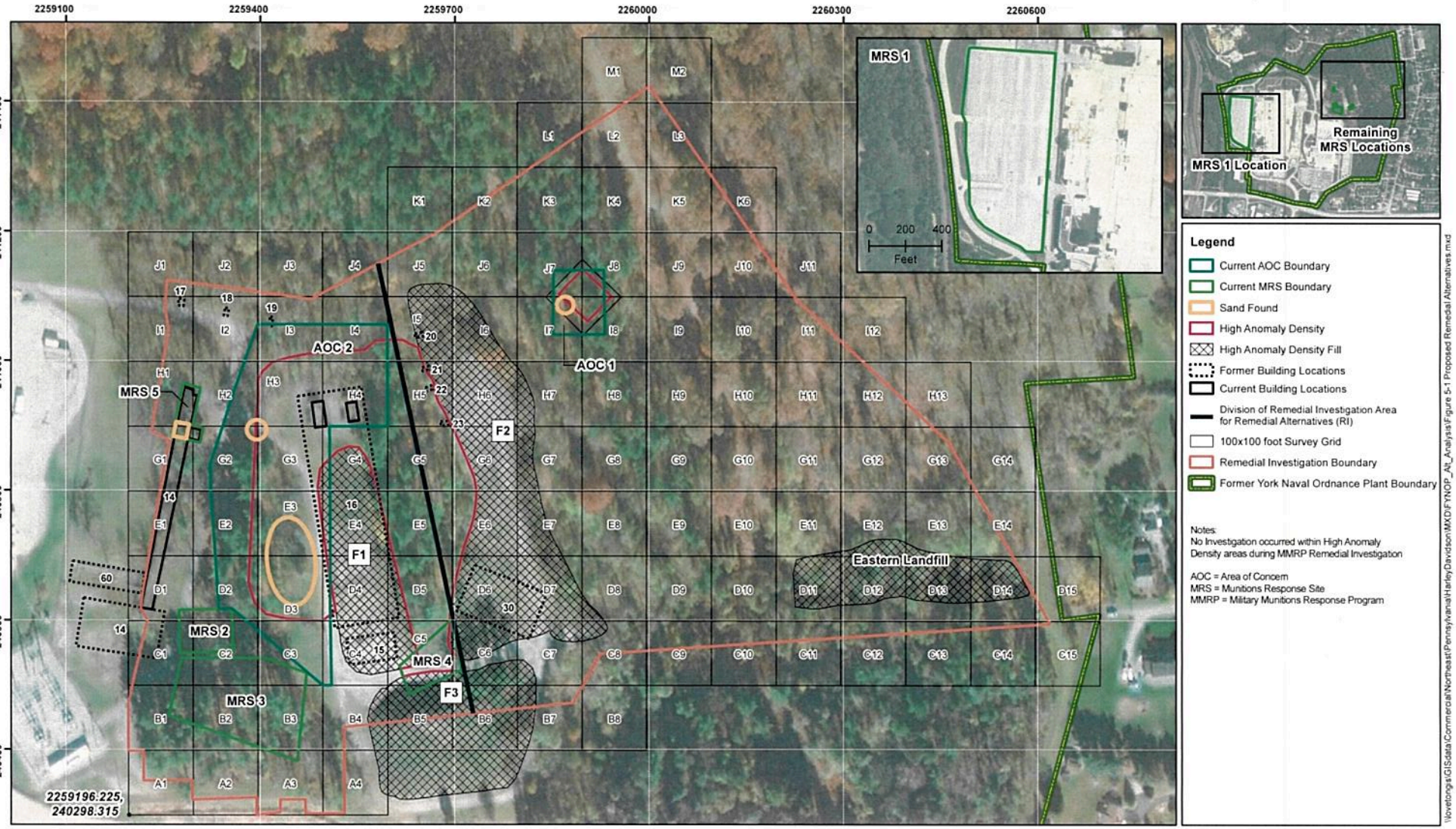

Figure 5-1 Proposed Remedial Alternatives

Aerial: ESRI, 2015

Projection: NAD 1983 State Plane Pennsylvania South Feet

Date: June 2018

0 100 200
Feet