



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

HONEYWELL FARMERS VALLEY WAX PLANT
45 ROUTE 446

SMETHPORT, PENNSYLVANIA

EPA ID NO. PAD046761763

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
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List of Acronyms

AOC	Area of Concern
AR	Administrative Record
AST	Above-ground Storage Tank
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
EPA	Environmental Protection Agency
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
PADEP	Pennsylvania Department of Environmental Protection
PRCP	Post-Remediation Care Plan
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Level
SB	Statement of Basis
SHS	Statewide Health Standard
SPL	Separate-Phase Liquid
SSS	Site-Specific Standard
TI	Technical Impracticability
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 Honeywell Farmers Valley Wax facility located in Smethport, Pennsylvania (hereinafter referred to as the Facility). EPA's proposed remedy for the Facility consists of the establishment of a technical impracticability (TI) zone and a long-term surface water monitoring program, in addition to 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 at <https://www.epa.gov/hwcorrectiveactionsites>. 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 45 Route 446, Smethport, Pennsylvania 16749. It occupies approximately 575 acres primarily bounded by undeveloped land, with some farmland and sporadic residential development primarily to the north. For remedial purposes, the Facility has typically been divided into three areas: the Main Plant Area, the Area South of Cole Creek, and the former Coal Ash Disposal Areas. A location map and Facility layout are attached as Figures 1 and 2, respectively.

The Facility has been used for petroleum refining operations since approximately 1923, when the McKean County Refinery Company was formed and owned the Facility. Quaker State Refining Company (Quaker State) purchased the Facility in 1929 and operated it as a refinery and wax manufacturing facility until 1990. In 1998 Quaker State merged with Pennzoil Products to form Pennzoil-Quaker State Company (Pennzoil-Quaker State). In 1990, Quaker State sold the Facility to Petrowax PA, Inc. Petrowax was acquired in 1995 by the Astor Corporation, which operated the Facility until 1997, when Astor was acquired by AlliedSignal Corporation. In 1999, AlliedSignal merged with Honeywell International (Honeywell), which has been the owner of the Facility since 2000. In 2005, International Waxes, Inc. became the operator of the Facility, with Honeywell remaining as the Facility owner. Since 1990, the Facility has been used exclusively to manufacture various grades of wax for both food-grade and commercial applications.

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 was used. Soil concentrations were screened against EPA RSLs for industrial soil. For consistency with the AR, Pennsylvania's non-residential Statewide Health Standards (SHS) will be referenced when discussing investigations performed under oversight of the Pennsylvania Department of Environmental Protection (PADEP).

The US Army Corps of Engineers performed an Environmental Indicator Inspection of the Facility in July 2000 and generated a report in October 2001 that outlined the Facility's operational and environmental history, including a history of prior releases that had occurred at the Facility. Eight current and ten former solid waste management units were identified and described during the inspection, as well as two areas of concern, including the accumulation of separate-phase liquid (SPL) floating on the water table beneath much of the Main Plant Area, which was to become a focal point in the environmental investigations of the Facility to follow.

Main Plant Area

Environmental investigations of the approximately 60-acre Main Plant Area of the Facility began in the mid-1980s, when several areas were characterized and closed under PADEP oversight. Contamination composed primarily of petroleum constituents including benzene, toluene, ethylbenzene, and xylenes (BTEX) has impacted soil and groundwater beneath the Facility as a result of historical activities and spills or releases.

Early remedial activities undertaken by Quaker State at the Facility included the installation of an impermeable clay barrier wall along Cole Creek prior to 1990 to inhibit the migration of SPL to the Creek, bailing and skimming of SPL in select wells beginning in the mid-1990s, and the activation of a dual-phase recovery system to recover SPL and groundwater in 1995. In 2004, Pennzoil-Quaker State installed an SPL recovery trench upgradient of the existing clay barrier to collect and remove SPL in this area that had begun to seep into Cole Creek. A watertight sheet-pile wall was also installed in this area to mitigate SPL impact to the Creek. Subsequent additional remedial activities included the plugging of a leaking pipe and associated soil removal within the former gasoline storage and blending area. Pennzoil-Quaker State also expanded the dual-phase SPL recovery and SPL skimming networks.

Pennzoil-Quaker State submitted a Notice of Intent to Remediate (NIR) to PADEP in August 2004 that proposed to remediate the Facility to the Site-Specific Standard (SSS) under Pennsylvania's Land Recycling and Environmental Remediation Standards Act, commonly referred to as Act 2. Under the SSS provisions, facilities may develop risk-based standards using EPA-based guidance and demonstrating attainment of the standard through sampling and on-going monitoring.

Pennzoil-Quaker State submitted the Remedial Investigation (RI)/Risk Assessment (RA) for the
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Main Plant Area to PADEP in January 2013. Manual bailing, skimming, and dual-phase extraction activities performed from 1994 to 2012 removed approximately 209,725 gallons of SPL from beneath the Main Plant Area, which had reduced the extent of the SPL plume to approximately 15 acres in size – a decrease from approximately 25 acres in 1994. By 2012, the thickness of SPL had also decreased to less than two feet within most of the Main Plant Area. While the active remediation has reduced the level of contaminants, modeling of the SPL volume, mobility, and recovery rates demonstrated that transmissivity was low across the Main Plant Area, and complete SPL recovery was unlikely.

Out of over 70 grab and composite surface soil samples collected in the Main Plant Area between 2004 and 2012, benzene exceeded its Industrial RSL at one location (22 milligrams per kilogram (mg/kg)); lead exceeded its Industrial RSL at one location (1440 mg/kg); and arsenic exceeded its Industrial RSL at 20 locations (maximum concentration 1010 mg/kg; average concentration among exceedances 119 mg/kg). Out of over 30 subsurface samples from various depths to 10 feet throughout the Main Plant Area, benzene (maximum concentration 151 mg/kg; average concentration of 46 mg/kg among 12 exceedances), ethylbenzene (maximum concentration 340 mg/kg; average concentration of 168 mg/kg among 8 exceedances), and arsenic (two exceedances of 31.7 mg/kg and 41.4 mg/kg) exceeded respective Industrial RSLs.

Multiple sampling events show that deep groundwater (greater than 125 feet below ground surface (bgs)) is not impacted by Facility-related contaminants. Groundwater samples from the shallow (less than 60 feet bgs) and intermediate zones (60 to 125 feet bgs) have been impacted. Contaminants were detected in 45 wells, with exceedances summarized in the following table.

Summary of Exceedances in Groundwater, microgram/liter (ug/L)

Contaminant	# Exceedances	Maximum	Average	MCL (*RSL)
Benzene	10	8580	3239	5
Ethylbenzene	5	3150	1752	700
Toluene	1	1530	1530	1000
1,2,4-trimethylbenzene	6	12,600	3513	56*
1,3,5-trimethylbenzene	5	751	529	60*
Methyl tert-butyl ether	1	30	30	14*
2-methylnaphthalene	1	1040	1040	36*
Naphthalene	4	297	185	0.17*
Bis-ethylhexyl phthalate	2	418	213.7	6
Arsenic	20	267	78	10
Cobalt	1	90	90	6*
Iron	20	129,000	59,570	14,000*
Manganese	26	11,800	3762	430*

Outside the footprint of the SPL plume, only four wells and one piezometer contained any SHS exceedances for VOCs. BTEX was not detected in eastern or southeastern point-of-compliance wells near Potato Creek and Cole Creek, suggesting that no impacts to surface water are occurring. Groundwater fate and transport modeling predict that groundwater contamination is unlikely to migrate in shallow groundwater in the direction of Potato Creek (to the east) and the eastern portion of Cole Creek.

The RA evaluated five human exposure routes to contamination: outdoor worker exposed to surface soil, surface water, sediment, and groundwater (via volatilization to ambient air); indoor worker exposed via inhalation of volatiles in indoor air from surface soil, groundwater, and SPL; construction worker exposed to surface and subsurface soil and groundwater; teenage trespasser exposed to surface soil and groundwater (via volatilization to ambient air); and recreator exposed to surface water and sediment.

Results from the RA demonstrated that potential risks associated with receptors are negligible since theoretical excess lifetime cancer risks were below 10^{-4} and non-carcinogenic risks were all less than a hazard index of 1. An ecological risk assessment demonstrated that site-related constituents are not present in sediment, surface soil, or groundwater at concentrations likely to cause unacceptable risk to local flora and fauna. PADEP approved the RI/RA in April 2013.

In February 2014, Pennzoil-Quaker State submitted a Cleanup Plan for the Main Plant Area to PADEP that evaluated remedial alternatives to address SPL remaining beneath the Main Plant Area. The remedial objectives were to prevent SPL migration to Cole Creek and to further reduce potential risk to receptors.

The reduction in size of the SPL plume from 1994 to 2012 as evidenced by stable or decreasing dissolved-phase contaminant concentrations across the Main Plant Area supported the conclusion that the footprint of the SPL plume is stable. The Cleanup Plan evaluated the current SPL volume, mobility, and low aquifer transmissivity to determine if continued recovery efforts were likely to further reduce SPL mass. In 2014 Pennzoil-Quaker State proposed that the interim SPL recovery system be shut down to evaluate the area under static conditions.

The Cleanup Plan proposed both institutional and engineering controls as remedial components. The institutional controls would restrict area land use to non-residential purposes, restrict groundwater use within the Facility property boundary, and limit building expansion and construction in some areas due to potential vapor intrusion impacts. The engineering controls of the existing sheet pile and clay walls would be maintained to prevent potential sheen occurrence on Cole Creek. The Cleanup Plan was approved by PADEP in May 2014, and the interim SPL recovery system was shut down in June 2014 to begin a one-year monitoring-only period to evaluate SPL stability through 1) monitoring for SPL in any wells outside the SPL footprint, 2) measuring SPL thickness trends, and 3) monitoring surface water for sheens.

After a small sheen was discovered in an approximately one-foot gap between a partially submerged oily water separator pipe and the north bank of Cole Creek in March 2015, PADEP was notified and Pennzoil-Quaker State submitted a Cleanup Plan Addendum in April 2015 that summarized the sheen occurrence, described interim control measures, and proposed additional

steps to mitigate the sheen and reduce the potential for future sheen occurrence. A wooden and bentonite control barrier was constructed in April 2015 which helped to control the sheen and restricted it to the immediate 18-inch by 12-inch area near Cole Creek Piezometer (CCPZ) 2.

The yearlong monitoring-only period concluded in June 2015, and all monitoring criteria were met except for the sheen occurrence described above on the north bank of Cole Creek (sheen has never entered the active flowing water of Cole Creek since shutdown of the SPL recovery system, but has been contained by the creek bank and the oily water separator pipe wall).

Dissolved-phase sampling results from the monitoring period met the approved stability criteria and groundwater sampling has not continued following completion of the initial one-year monitoring period. However, static groundwater and SPL levels, SPL thickness data, and monitoring for first occurrence of SPL outside the plume's footprint continue to be monitored and reported in quarterly remedial action progress reports. A summary of the results from the final sampling event is provided in the table, below.

April 2015 Main Plant BTEX concentrations in groundwater, ug/L (MCLs in parentheses)

Well	Benzene (5)	Toluene (1000)	Ethylbenzene (700)	Xylenes (10,000)
MW-1	ND [<0.5]	ND [<1.0]	ND [<1.0]	ND [<1.0]
MW-7	2.5	ND	25.7	7.6
MW-9	ND	ND	ND	ND
MW-10	ND	ND	ND	ND
MW-11	ND	ND	ND	ND
MW-12	ND	ND	ND	ND
MW-17	2.3	ND	14.8	71.3
MW-18*	4960	22.6	1020	3780
MW-19	ND	ND	ND	ND
MW-401	35.4	ND	ND	ND
MW-701	ND	ND	ND	ND
RW-15	ND	ND	ND	ND

* MW-18 is within SPL footprint

Bold concentrations indicate MCL exceedances

In September 2017, the bank of Cole Creek near CCPZ 2 was rehabilitated by removing the wooden and bentonite control barrier, excavating over 26 tons of soil, installing a geosynthetic clay liner and backfilling with an organoclay, sand, and clay-rich soil mix. Riprap and gabion baskets were installed to protect the creek bank against future erosion. No further sheen has occurred in the area since this rehabilitation.

Area South of Cole Creek

Investigation of the Area South of Cole Creek (South Area) began in 1993 and continued through 2005. Pennzoil-Quaker State submitted a NIR to PADEP in January 2001 proposing to remediate soil and groundwater of the South Area to a combination of Statewide Health Standards (SHS) and SSS under Act 2. The South Area includes two disposal areas, the Tank Bottoms and Tank Scale Areas, and the former Gasoline Platforming Area which were identified as potential areas of concern in these early investigations.

In April 2008, Pennzoil-Quaker State submitted a RI/RA of the South Area. Out of 22 surface soil samples, arsenic and lead exceeded their respective Industrial RSLs at 5 locations (75.1 mg/kg and 3720 mg/kg maximum concentrations for arsenic and lead, respectively). Out of 37 subsurface soil samples, naphthalene and lead exceeded their respective Industrial RSLs at one location (53 mg/kg and 4860 mg/kg maximum concentrations for naphthalene and lead, respectively). A summary of the exceedances of a contaminant's respective MCL (or Tap Water RSL if no MCL exists) from the groundwater sampling of 24 monitoring wells within the area is provided in the table below. Thin accumulations of SPL were detected in some piezometers located in the interior of the Facility south of Cole Creek; SPL was not considered a significant issue in this area of the Facility.

Summary of Exceedances in Groundwater, ug/L

Contaminant	# Exceedances	Maximum	MCL (*RSL)
Benzene	7	2600	5
Methyl ethyl ketone	1	7600	5600*
1,2,4-trimethylbenzene	3	1900	56*
1,3,5-trimethylbenzene	1	140	60*
Benzo(a)anthracene	2	5	0.03*
Benzo(a)pyrene	2	3	0.2
Bis-ethylhexyl phthalate	1	12	6
Naphthalene	6	160	0.17*
Antimony	1	45.5	6
Arsenic	9	60.1	10
Manganese	11	6800	430*

Stream sampling and modeling of groundwater discharge to surface water demonstrated that actual contaminant concentrations and predicted maximum contaminant concentrations discharging to surface water were below applicable ambient water quality criteria. The RA evaluated current and hypothetical future exposures to industrial workers, construction workers, firefighters and teenage trespassers as potential receptors, and summed theoretical cancer risks and non-cancer hazard indices were below 1×10^{-4} and 1.0, respectively. PADEP approved the RI/RA in September 2008 and included six modifications to be addressed in the Cleanup Plan.

Pennzoil-Quaker State submitted the Cleanup Plan for the South Area in January 2009. In response to PADEP comments, the Cleanup Plan included the installation of additional monitoring and compliance wells, regrading certain areas of the plant, and the approval of procedures for the inspection and maintenance of the Tank Bottoms and Tank Scale disposal areas. Activity and use restrictions for the South Area were also proposed. The plan included two rounds of groundwater sampling of all newly-installed wells.

The Cleanup Plan included proposed controls on the Facility, to be included in a Post-Remediation Care Plan (PRCP) and in an environmental covenant, to (1) restrict residential land

use, prohibit groundwater use other than within the deep aquifer, prohibit construction or intrusive operations in the former Tank Bottoms Area (which was reportedly lined with a plastic liner in the 1980s), and prohibit building construction within the former Gasoline Platforming Area, and (2) require inspection and maintenance of passive engineering controls including semiannual inspections of the vegetative covers in the former Tank Bottoms Disposal Area and the Tank Scale Disposal Area. PADEP approved the Cleanup Plan in April 2009.

Pennzoil-Quaker State submitted a Final Report for the South Area in June 2010. Additional remedial activities outlined in the Final Report included the installation and sampling of several point-of-compliance monitoring wells, the establishment of uniform vegetated covers in the Tank Scale Disposal Area and the former Tank Bottoms Disposal Area, and a supplemental risk evaluation of potential exposures to shallow groundwater and soil by outdoor workers or construction workers. Summed theoretical cancer risks and non-cancer hazard indices from the supplemental risk evaluation remained below 1×10^{-4} and 1.0, respectively. The Final Report demonstrated attainment of a combination of SHS and SSS for soil, and SSS for groundwater and SPL under Act 2. An environmental covenant including the restrictions as described and approved in the Cleanup Plan was recorded in September 2009, and a copy of the recorded covenant was provided in the Final Report. PADEP approved the Final Report in November 2010.

Former Coal Ash Disposal Areas

The former Coal Ash Disposal Areas (Disposal Areas) include two separate fill areas, Coal Ash Areas 1 and 2, containing ash from the coal-fired boilers that was placed from the 1940s through the 1970s. Coal Ash Area 1 is approximately 5 acres in size and contains an estimated 93,900 cubic yards of fill material. Coal Ash Area 2 is approximately 0.8 acres in size and contains an estimated 8200 cubic yards of fill. Pennzoil-Quaker State initially completed an investigation of Coal Ash Area 2 in 1998 after PADEP received a complaint related to the Disposal Areas.

In August 2004 Pennzoil-Quaker State submitted a RI/RA Report of the Disposal Areas. Out of 37 soil samples from test pits (24 in Coal Ash Area 1 and 13 in Coal Ash Area 2) and 15 additional surface soil locations (12 in Coal Ash Area 1 and three in Coal Ash Area 2), only arsenic exceeded its Industrial RSL (maximum concentration of 150 mg/kg in Coal Ash Area 1 and 140 mg/kg in Coal Ash Area 2). Although the Disposal Areas are not occupied, the RA showed that the theoretical cancer risk and non-cancer hazard index under continuous occupancy were acceptable (i.e., below 1×10^{-4} and 1.0, respectively). Groundwater sampling showed no detections of organic constituents. A summary of the exceedances of an inorganic contaminant's respective MCL (or Tap Water RSL if no MCL exists) from the groundwater sampling of 10 monitoring wells (six in Coal Ash Area 1 and four in Coal Ash Area 2) is provided in the tables below.

Summary of Coal Ash Area 1 Exceedances in Groundwater, ug/L

Contaminant	# Exceedances	Maximum	MCL (*RSL)
Aluminum	2	77,000	20,000*
Arsenic	2	21	10
Iron	4	150,000	14,000*
Lead	2	43	15

Manganese	6	9000	430*
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Summary of Coal Ash Area 2 Exceedances in Groundwater, ug/L

Contaminant	# Exceedances	Maximum	MCL (*RSL)
Iron	2	56,000	14,000*
Manganese	3	4600	430*

Groundwater discharge to Potato Creek was evaluated through surface water sampling and no evidence of impact to surface water was detected. The RI/RA Report recommended the regrading and covering of both Disposal Areas, the development of a PRCP to address annual inspections of the area to ensure the recommended covers are not damaged, and the completion of eight quarters of attainment sampling at area monitoring wells.

Pennzoil-Quaker State also submitted a Cleanup Plan in August 2004 that summarized the RI/RA results, evaluated remedial alternatives, and outlined the cleanup design and specifications of the selected remedy of a twelve-inch soil and vegetative cover over the area. The Cleanup Plan outlined the elements of the PRCP to include monthly inspections during the first year, quarterly inspections during the second year, and thereafter inspections to occur once every two years to verify the integrity of the cover and identify any areas needing repair. Seeding and repair procedures, maintenance of slope stability and drainage, and reporting requirements are briefly discussed in the PRCP, and a deed notice would be filed to identify the Disposal Areas and restrict activities in those Areas to those which would not damage the cover and are consistent with the remedy's risk evaluation. PADEP approved both the RI/RA and Cleanup Plan reports in November 2004.

In June 2009 Pennzoil-Quaker State submitted a Final Report for the Disposal Areas. Clearing, grubbing, regrading, and installation of the vegetated 12-inch soil cover in the Disposal Areas was completed in October 2008. Attainment sampling of groundwater beneath the Disposal Areas subsequent to the construction of the soil cover demonstrated that no contaminants occur at concentrations exceeding the acceptable risk range based on the exposure assumptions outlined in the Risk Assessment and Cleanup Plan. The Final Report also outlines the PRCP, which remained unchanged from that outlined in the Cleanup Plan except that quarterly inspections would continue for two years (ending September 2010) to monitor revegetation progress, and an Environmental Covenant replaced the deed notice requirement. Groundwater monitoring wells were abandoned in accordance with and after approval of the Final Report, which occurred in September 2009.

Section 4: Corrective Action Objectives

Soils

Several VOCs and metals exceed Industrial RSLs in soil at the Facility; however, the risk assessments have demonstrated that cumulative cancer and non-cancer risks are below acceptable levels based on realistic exposure assumptions under current and potential future use scenarios. Therefore, EPA's Corrective Action Objective for soil is to:

1) Minimize industrial and construction worker exposures to soil within Coal Ash Area 1, Coal Ash Area 2, the Tank Bottoms Area, and the TI Zone within the Main Plant Area where metals and VOC concentrations remain above Industrial RSLs

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.

When returning contaminated groundwater to its maximum beneficial use 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 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 contaminants in groundwater occurring above 125 feet bgs to MCLs beneath the majority of the Main Plant Area is technically impracticable and would not result in significant improvement in a reasonable timeframe due to the extent of SPL floating on top of the water table. Except groundwater in the deep aquifer below 125 feet bgs, groundwater beneath the Main Plant Area is not currently used as a drinking water source, nor is it anticipated to be used for drinking water in the future. Hydrogeological investigations of the area have demonstrated that groundwater above 125 feet bgs has no connection with the deeper aquifer. Remaining groundwater contamination is expected to remain within the shallow groundwater zone (above 125 feet bgs) and primarily within several feet of the water table as SPL. Direct contact, incidental ingestion, and inhalation of volatiles are potentially complete exposure routes to groundwater contamination during intrusive operations within the footprint of the TI Zone (Main Plant Area SPL plume). These exposure pathways are already controlled through work procedures during any intrusive operations. Additionally, SPL recovery and groundwater treatment was performed for approximately 20 years in the Main Plant Area that

reduced the volume and mobility of remaining SPL such that surface water is not adversely impacted, contaminated groundwater is stable and does not migrate off-site, and the remaining SPL plume is stable. Since all the primary groundwater contaminants are light and volatile, EPA expects the contaminant plume beneath the Main Plant Area to continue to decrease in size due to natural attenuation processes.

Therefore, EPA's Corrective Action Objectives for groundwater beneath the Main Plant Area is to:

- 1) Prevent drinking water exposure, and control other exposures, to groundwater above 125 feet bgs where VOC concentrations remain above MCLs, and
- 2) Verify the SPL plume is stable or decreasing and will not migrate beyond its current extent.

Subsurface Vapor

Groundwater beneath three areas of the Facility contain sufficient concentrations of VOCs that pose a risk of vapor intrusion into buildings located in these areas.

Therefore, EPA's Corrective Action Objective for subsurface vapor intrusion is to:

- 1) Prevent worker exposures to contaminants in indoor air above industrial air RSLs inside occupied buildings within three areas: 1) the limits of the TI Zone as depicted on Figure 3; 2) the former Gasoline Station Area within the Main Plant Area, and 3) the former Gasoline Platforming Area within the Area South of Cole Creek.

Section 5: Proposed Remedy

Soils

EPA's proposed final remedy for Facility soils consists of the following restrictions and requirements:

- 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 PADEP/EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and the owner(s) of the Facility property provides prior written approval from PADEP for such use;
- 2) The Facility owner shall develop and implement a soil management plan, to be included in an EPA-approved Post-Remediation Care Plan (PRCP), outlining personal protective equipment (PPE) and work procedures required for any intrusive operations within the TI Zone;
- 3) The Facility owner shall annually inspect the integrity of the covers in the Coal Ash Disposal Areas and the former Tank Bottoms Area;
- 4) Any intrusive operations or other construction activities that would affect the integrity of the Coal Ash Disposal Areas or the former Tank Bottoms Area are prohibited without prior written approval from PADEP; and
- 5) Compliance with the EPA-approved PRCP.

Groundwater

EPA's proposed remedy for Facility groundwater consists of the following restrictions and requirements:

- 1) Groundwater from depths less than 125 feet bgs within TI Zone shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by EPA or PADEP, unless it is a) demonstrated to PADEP that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy selected by EPA, and b) PADEP provides prior written approval for such use;
- 2) Establishment of a TI Zone as depicted in Figure 3, attached hereto, and compliance with a PRCP, to be submitted to EPA and PADEP for review and approval, that includes, at a minimum, surface water monitoring for any sheen reoccurrence and remedial procedures to be followed should any sheen reoccur on or near Cole Creek; and
- 3) In accordance with the EPA-approved PRCP, the Facility shall inspect and maintain the sheet pile wall near MW-205 and clay wall near MW-201 to ensure they continue to perform as designed to reduce contaminant infiltration into Cole Creek.

Subsurface Vapor

EPA's proposed final remedy for subsurface vapor beneath the Facility consists of the following

components:

- 1) No person may construct or expand any building within the former Gasoline Station Area within the Main Plant Area or within the limits of the TI Zone as depicted in Figure 3, unless (i) additional sampling and/or vapor intrusion modeling is submitted to PADEP demonstrating to the satisfaction of PADEP, as approved by PADEP in writing, that the occupation of such buildings will not result in an unacceptable risk of subsurface vapor exposure to occupants of such buildings; or (ii) engineering measures (such as vapor barriers or venting systems) or other actions approved by PADEP in writing are implemented to limit or prevent vapor intrusion into occupied areas, so as to avoid an unacceptable risk of soil vapor exposure to occupants of such buildings; and
- 2) No worker may be continuously stationed in the former Gasoline Station Area building within the Main Plant Area unless (i) additional sampling and/or vapor intrusion modeling is submitted to PADEP demonstrating to the satisfaction of PADEP, as approved by PADEP in writing, that the occupation of such buildings will not result in an unacceptable risk of subsurface vapor exposure to occupants of such buildings; or (ii) engineering measures (such as vapor barriers or venting systems) or other actions approved by PADEP in writing are implemented to limit or prevent vapor intrusion into occupied areas, so as to avoid an unacceptable risk of subsurface vapor exposure to occupants of such buildings.

Implementation

EPA proposes that the final remedy be implemented through an enforceable mechanism such as a permit, order, 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 property pursuant to the Pennsylvania Uniform Environmental Covenants Act.

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 EPA and PADEP 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) EPA will require the Facility owner 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.

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	This criterion is met without additional active remedial actions. There is no current potable use of groundwater and the plume of contaminated groundwater is stable and not affecting potential receptors. The proposed remedy will continue to protect human health and the environment from exposure to contamination, including future risks. Land and groundwater use restrictions will prohibit future uses that would pose an unacceptable risk through the use of an environmental covenant or other administrative mechanism. Risk assessments performed in each area of the Facility demonstrated that, under conservative exposure assumptions and current and potential future exposure scenarios, risk resulting from remaining soil and groundwater contamination is below acceptable levels.
2) Achieve media cleanup objectives	EPA's proposed remedy meets the media cleanup objectives based on current and reasonably anticipated land and groundwater use. The proposed remedy addresses human and environmental exposures stemming from non-residential use. The Facility has demonstrated attainment of applicable Statewide Health or Site-Specific Standards under Pennsylvania's Act 2 in the former Coal Ash Disposal Areas in 2009 and the Area South of Cole Creek in 2010. The Facility will demonstrate attainment of Act 2 standards throughout the Main Plant Area once no sheen has been observed during one year of quarterly monitoring. The Statewide Health or Site-Specific Standards under Pennsylvania's Act 2 are equivalent to EPA standards for these constituents.
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 repairing or removing leaking tanks or piping, excavating contaminated soil, and performing SPL extraction and groundwater treatment in the Main Plant Area for approximately 20 years. EPA has determined that this criterion has been met.

Balancing Criteria	Evaluation
4) Long-term effectiveness	The long-term effectiveness of the proposed remedy for the Facility will be maintained by the implementation of use restrictions and adherence to the PRCP.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The reduction of toxicity of the volatile contaminants remaining in soil and groundwater beneath the Main Plant Area and Area South of Cole Creek has occurred largely through source control and natural attenuation processes. These natural attenuation processes will continue to degrade these contaminants to non-toxic or less toxic constituents or levels. Reduction of the volume of hazardous constituents in groundwater has been achieved through the bailing, skimming, and dual-phase extraction activities that occurred for 20 years from 1994 to 2014 in the Main Plant Area. The mobility of the remaining SPL plume has been significantly reduced and has not migrated to other areas of the Facility as demonstrated by monitoring results from wells located downgradient of the plume, SPL transmissivity estimates, and fate and transport modeling.
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. Use restrictions have already been implemented, and EPA anticipates that the modifications to the covenant and/or PRCP will be fully implemented shortly after issuing the Final Decision and Response to Comments.
7) Implementability	EPA's proposed remedy is readily implementable. EPA proposes to implement the use restrictions through an enforceable mechanism such as an Environmental Covenant, permit or order.
8) Cost	EPA's proposed remedy is cost effective. Most of the costs associated with this proposed remedy have already been incurred and the remaining costs to revise the existing covenant should be minimal.
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	EPA will evaluate state acceptance of the proposed remedy during the public comment period, and it will be described 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 implementing institutional and engineering controls at the Facility will be minimal (less than \$50,000 annually), EPA is proposing that no financial assurance is required.

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 (3LC20)
Phone: (215) 814-3407
Fax: (215) 814 - 3113
Email: miller.griff@epa.gov

Attachments:

Figure 1: Location Map
Figure 2: Facility Diagram
Figure 3: Proposed TI Zone

Date: _____

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

Section 9: Index to Administrative Record

Environmental Indicator Inspection Report for Honeywell International, prepared by U.S. Army Corps of Engineers, October 2001.

Remedial Investigation and Risk Assessment Report – Coal Ash Disposal Area, prepared by MACTEC, August 2004.

Site Cleanup Plan – Coal Ash Disposal Area, prepared by MACTEC, August 2004.

Remedial Investigation/Risk Assessment Report – Area South of Cole Creek, prepared by MACTEC, April 2008.

Cleanup Plan – Area South of Cole Creek, prepared by URS, January 2009.

Final Report – Coal Ash Disposal Areas, prepared by URS, June 2009.

Final Report – Area South of Cole Creek, prepared by URS, June 2010.

Combined Remedial Investigation, Risk Assessment, and Final Report – former Crude Tanks Area, prepared by URS, October 2011.

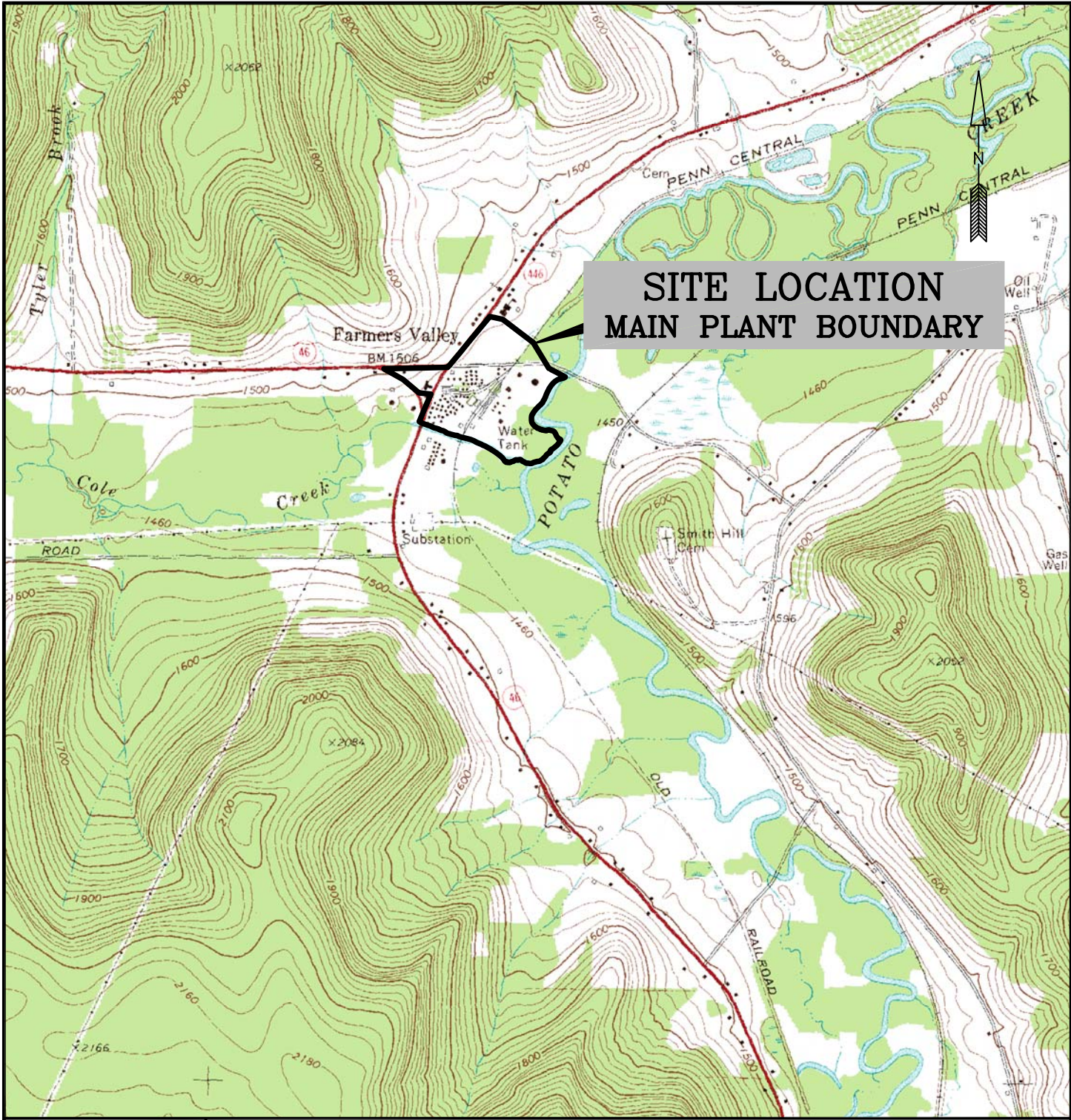
Combined Site Characterization and Remedial Action Completion Report – former Gasoline Station Site, prepared by URS, February 2012.

Remedial Investigation/Risk Assessment Report – Main Plant Area, prepared by URS, January 2013.

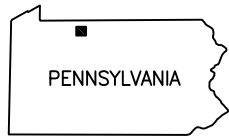
Cleanup Plan – Main Plant Area, prepared by URS, February 2014.

Remedial Action Progress Report, 2nd Quarter 2017 – Farmers Valley Main Plant, prepared by AECOM, August 2017.

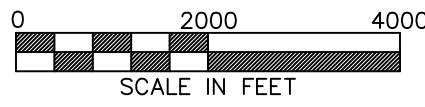
Remedial Action Progress Report, 1st Quarter 2018 – Farmers Valley Main Plant, prepared by AECOM, June 2018.



**SITE LOCATION
MAIN PLANT BOUNDARY**



QUADRANGLE LOCATION



FARMERS VALLEY WAX PLANT FORMER CRUDE TANKS AREA
ROUTE 46
FARMERS VALLEY, PENNSYLVANIA

SITE LOCATION

NOTE: Main Plant boundary is based on information given in the Notice of Intent to Remediate.

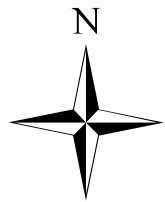


FOSTER PLAZA 6
681 ANDERSEN DRIVE
SUITE 400
PITTSBURGH, PA 15220
PHONE: (412) 503-4700 FAX: (412) 503-4701

FIGURE
1

REFERENCE:
BASE MAP IS A PORTION OF THE THE U.S.G.S. 7.5 MINUTE TOPOGRAPHIC SERIES SMETHPORT, PA QUADRANGLE. DATED: 1973, SCALE: 1"=2000', CONTOUR INTERVAL IS 20 FEET, DATUM IS MEAN SEA LEVEL.

DRAWN: SLA	CHECKED:	APPROVED:	DATE: 9/28/2013
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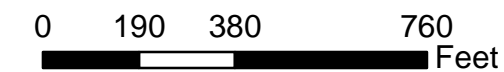
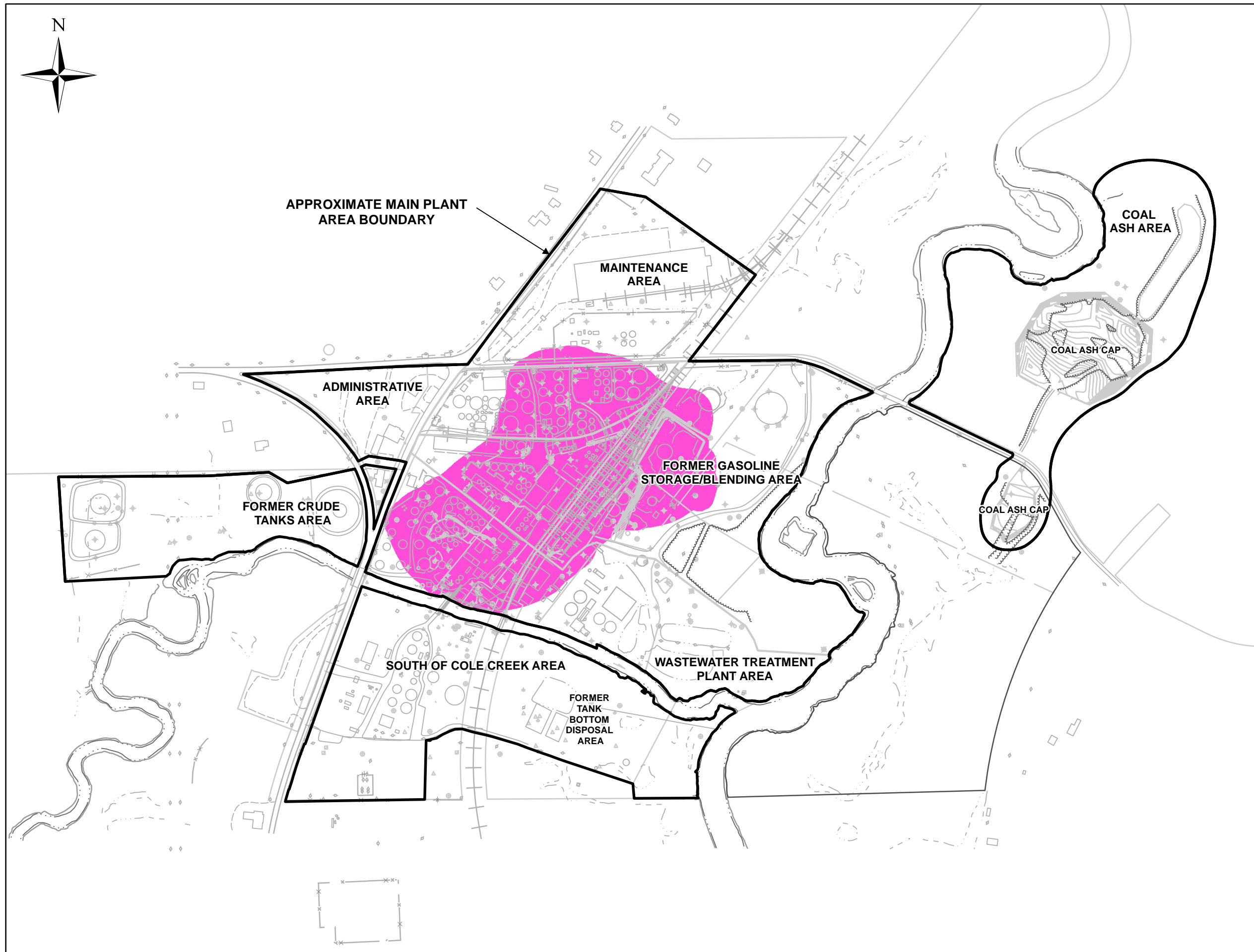


AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Legend

- Site Boundary
- SPL Extent



1 inch = 380 feet

Site Boundaries with SPL Extent

**Farmers Valley Main Wax Plant
Farmers Valley, Pennsylvania**