



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

FINAL DECISION AND RESPONSE TO COMMENTS

Brightsmith Coil Coaters
Morrisville, PA
EPA ID NO. PAD073739005

Prepared by
RCRA Corrective Action Branch 2
Land, Chemicals, and Redevelopment Division
September, 2022

I. PURPOSE

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC) selecting the Final Remedy for the Brightsmith Coil Coaters facility located in Morrisville, PA (hereinafter referred to as the Facility). The FDRTC is issued pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901, et seq.

On August 18, 2022, EPA issued a Statement of Basis (SB) in which it described the information gathered during environmental investigations at the Facility and proposed a Final Remedy for the Facility. Consistent with the public participation provisions under RCRA, EPA solicited public comment for 30 days on its proposed Final Remedy. The SB is hereby incorporated into this FDRTC by reference and made a part hereof as Attachment A.

EPA did not receive any comments on the SB and has selected the proposed remedy set forth in the SB as the Final Remedy.

II. FINAL REMEDY

1. Soil

EPA's remedy for Facility soil consists of the following land use restrictions:

- a. The Facility 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 prewritten approval for such use.
- b. All earth moving activities at the Facility, including excavation, drilling and construction activities, shall be conducted in a manner such that the activity will not pose a threat to human health and the environment or adversely affect or interfere with the Final Remedy.

2. Groundwater

EPA's remedy for Facility groundwater consists of the following:

- a. Natural Attenuation to achieve National Primary Drinking Water 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, for toluene and arsenic in groundwater within a reasonable timeframe.

- b. The following groundwater use restrictions shall remain in place until MCLs are achieved:
1. Groundwater at the Facility shall not be used for any purpose other than 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. No new wells shall be installed on Facility property unless it is demonstrated to EPA that such wells are necessary to implement the Final Remedy and EPA provides prior written approval to install such wells.

The land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility will be implemented through enforceable ICs such as an order and/or an Environmental Covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act, 27 Pa. C.S. Sections 6501-6517 (UECA) to be recorded with the deed for the Facility property. If EPA determines that additional monitoring activities, institutional controls, or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an order or Environmental Covenant, provided any necessary public participation requirements are met. If any individual with an interest in the Facility property believes that information shows that any use restrictions in this proposed and later selected by EPA is no longer necessary to protect public health and the environment, the individual may submit such information to EPA for consideration. EPA can change any such restriction if it determines it is no longer necessary, after any required public comment period.

III. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the Brightsmith Coil Coaters facility, EPA has determined that the Final Remedy selected in this Final Decision and Response to Comments is protective of human health and the environment.

Dana Aunkst, Director
Land, Chemicals, and Redevelopment Division
U.S. EPA Region III

09/27/2022

Date

Attachment A: Statement of Basis for Brightsmith Coil Coaters (August, 2022)



UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

**Brightsmith Coil Coaters (Formerly MSC Engineering)
Morrisville, PA**

EPA ID: PAD073739005

Prepared by

RCRA Corrective Action Branch 2
Land, Chemicals and Redevelopment Division

July 2022

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 groundwater and soils at the Brightsmith Coil Coaters Facility located at 120 Enterprise Ave, Morrisville, PA (Facility). EPA's proposed remedy for groundwater and soils at the Facility consists of Natural Attenuation for groundwater and implementing both land and groundwater use controls through an Environmental Covenant (EC) to control exposure to contaminated groundwater and soil. This SB highlights key information relied upon by EPA in making its proposed remedy.

This SB does not address sediment contamination in the unnamed tributary of Biles Creek. EPA will issue a separate SB proposing a remedy to address Facility-related sediment contamination in the unnamed tributary of Biles Creek after investigations are completed.

The Facility is subject to the Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. The Corrective Action program requires that owners or operators of 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 properties. 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 of Pennsylvania for the Corrective Action Program.

EPA is providing a thirty (30)-day public comment on EPA's proposed remedy for the Facility. EPA may modify its proposed remedy based on comments received during this period. EPA will evaluate comments received and select a final remedy 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 to <https://www.epa.gov/hwcorrectiveactionsites/hazardous-waste-cleanup-brightsmith-coil-coaters-formerly-msc-engineered>.

EPA has compiled an administrative record (AR) containing all documents, including data and quality assurance information, upon which EPA's proposed remedy is based. See Section 8, Public Participation, below, for information on how you may review the Administrative Record.

Section 2: Facility Background

The Facility is situated on approximately 8.25 acres of land located 2.5 miles south of Morrisville, PA within Falls Township, Bucks County. The Facility is located within an industrial complex surrounded by developed properties.

The Facility has operated as a metal coil coating facility since 1973, though site use prior to then is unknown. In 1973, Prior Coated Metals began operations at the Facility. From sometime in

1983 to 1998, the Facility was owned and operated by Pre Finish Metals. MSC Engineered Materials and Solutions Group (MSC) (also known as MSC Pre Finish Metals Products company) purchased the Facility in 1998 and operated until it was purchased by Brightsmith Coil Coaters in 2008.

Metal coil coating operations took place within the processing plant building and adjoining paint storage building. Pretreatment of the metal coils consists of an alkaline wash and a chemical coating to prevent corrosion and to allow the adhesion of paint. A wastewater treatment plant (WWTP) that receives wastewater generated through the pretreatment of the metal coils and any overflows or leaks from pretreatment is located within the processing plant building. The treated effluent is discharged into an unnamed tributary of Biles Creek and is regulated by National Pollutant Discharge Elimination System (NPDES) Permit No. PA0045021.

Between 1973 and 1984, Prior Coated Metals used multiple storage tanks. During the change of ownership to Pre Finish Metals in 1983-1984, these tanks were reportedly closed. The sand filter tank was utilized by Prior Coated Metals as part of its waste treatment process. Wastewater was pumped into the tank and percolated through sand to the bottom, where solids collected and were periodically removed by an outside contractor. Between 1983-1984, the sand filter tank was reportedly cleaned and all wastes removed, and the tank was permanently closed, filled, and graded. An underground waste paint sludge tank was also utilized by Prior Coated Metals until it was reportedly closed in 1984. The contents of these tanks were reportedly removed and cleaned; the tank was later removed and the area graded. The former operators of the Facility property used a water treatment settling lagoon located just north of the WWTP. The lagoon was reportedly closed in 1983 prior to the transfer of ownership to Pre Finish Metals. There is no information regarding whether this area was lined or unlined. Three ASTs were installed on the Facility's property between 1987-1990 and are still currently used for waste paint, virgin paint, and cleaning solvent.

Section 3: Summary of Environmental Investigations

In 1989 Pre Finish Metals conducted a Preliminary Assessment of the Facility which consisted of geologic, hydrogeologic, demographic, and environmental surveys. It was noted in the Preliminary Assessment report that during the time of ownership change in 1984, six groundwater monitoring wells were installed and sampled; elevated levels of chromium, lead, and zinc were detected. No remedial action took place at that time.

The Bucks County Health Department (BCHD) conducted multiple inspections between 1977 and 1993 and found discharges coming from the WWTP into the unnamed tributary of Biles Creek where the outfall is located. Multiple inspection events during this timeframe included grab samples of the effluent and were found to exceed the NPDES permit limits for suspended solids, total aluminum, total chromium, and/or total iron. In 1977, a BCHD inspection found effluent that appeared to be causing obvious pollution to the water of the unnamed tributary, as noted by the visible white colored water for several hundred feet downstream. No remediation took place. In 1980, BCHD found approximately 1,000 gallons of untreated chromium wastes had been discharged into the unnamed tributary due to a mechanical failure. Prior Coated Metals

reported that it hired a contractor to contain the spill in the tributary and remove the contamination and deposit it into the water treatment settling lagoon. There is no known previous sediment or soil sampling at the Facility.

In 2019, Brightsmith Coil Coaters reported a spill of a RCRA regulated non-halogenated waste solvent drum that was located in the 90-day hazardous waste storage area at the Facility. Soil immediately adjacent to the northern side of the storage area was affected and subsequently excavated by Brightsmith Coil Coaters. Post excavation samples found concentrations of ethylbenzene and toluene above Pennsylvania Department of Environmental Protection's (PADEP) Non-Residential Statewide Health Standards (SHSs). Brightsmith Coil Coaters then further investigated and delineated the extent of contamination in 2020; an additional excavation event took place in April 2020 after which confirmatory soil samples confirmed that contamination was either not detected or was present at concentrations significantly below Residential Direct Contact Soil Medium Specific Concentrations (MSCs). PADEP oversaw the response, investigation, and remediation of the spill and determined that Act 2 cleanup standards for toluene and ethylbenzene for soil had been attained.

In 2021, EPA requested that Brightsmith Coil Coaters investigate Facility soil and groundwater as a confirmatory measure to establish the absence of contamination or a plume onsite. The Brightsmith Coil Coaters contracted INTEX Environmental Group, Inc. (INTEX) to conduct further investigation of contamination at the Facility. In December 2021 and January 2022, INTEX obtained and analyzed soil, groundwater, and sediment samples from the Facility for volatile organics compounds (VOCs), metals, arsenic, and hexavalent chromium.

A total of 14 soil boreholes were sampled throughout the Facility property focusing on areas where potential releases may have occurred based on the known history of the Facility. These areas included:

1. Former underground storage tanks (USTs) including an 8,000-gallon paint sludge storage tank, and 8,000-gallon steel VT3 that stored toluene, acetone, and isopropanol;
2. Former sand filter tank;
3. Railroad tracks, and
4. Former water treatment settling lagoon.

In addition, samples obtained by the railroad tracks were also analyzed for pesticides and herbicides. This investigation found that both surface and subsurface soil exceeded EPA Industrial Regional Screening Levels (RSLs) for hexavalent chromium and heavy metals in the areas of the former USTs, sand filter tank, and water treatment settling lagoon (Table 1). EPA's RSLs are based on a 10^{-6} risk level which corresponds to the upper-end of EPA's acceptable risk range of 10^{-4} to 10^{-6} (40 CFR 300.430), therefore these RSLs are conservative in regards to human health exposure risk.

Groundwater was sampled in 7 monitoring wells, including one downgradient of the potential contamination sources (Figure 1). Only one well (MW-8), located near the former UST/sand filter tank/water treatment settling lagoon area, had slight exceedances of EPA's National Primary Drinking Water 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, for arsenic and toluene (Table 2). It is suspected that MW-8 has the highest contamination given the location on the Facility property and the historic use in that area. Data from this well indicates that there is no longer a source or sitewide contamination. Further, the absence of contamination downgradient indicates that contamination is localized to the area of the well. Given the data, EPA anticipates that natural attenuation processes are inhibiting mobility of contaminants and resulting in contaminant degradation.

Toluene was also evaluated for potential Vapor Intrusion (VI) concern. EPA has determined VI is not to be a risk factor (Residential exposure Target Groundwater Concentration is 3mg/L while sample concentration is 2mg/L) (Attachment 1) at the Facility.

Section 4: Corrective Action Objectives

EPA's Corrective Action Objectives (CAOs) for the specific environmental media at the Facility are as follows:

1. Soil

Hexavalent chromium and arsenic remain in soil at the Facility at levels that exceed applicable industrial RSLs, however the concentrations of both contaminants in soil are within EPA's acceptable risk range of 10^{-4} to 10^{-6} (40 CFR 300.430). There is limited exposure potential to soil at the Facility as current operations are conducted inside the buildings. Therefore, the CAO for soil is to prevent future residential exposure to contaminated soil.

2. Groundwater

EPA expects final remedies to return usable groundwater to its maximum beneficial use within a timeframe that is reasonable given the 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 MCLs as the corrective action objective for groundwater and control exposure to the hazardous constituents remaining in the groundwater until applicable MCLs are achieved throughout the area of contaminated groundwater and demonstrated by groundwater monitoring results. Therefore, the CAO for groundwater is to achieve MCLs and prevent onsite use and exposure to contaminated groundwater until applicable MCLs are attained.

Section 5: Proposed Remedy

EPA's proposed remedy is as follows:

1. Soil

- EPA's proposed remedy for Facility soil consists of the following land use restrictions:
- a. The Facility 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 selected remedy and EPA provides prewritten approval for such use and

- b. All earth moving activities at the Facility, including excavation, drilling and construction activities, shall be conducted in a manner such that the activity will not pose a threat to human health and the environment or adversely affect or interfere with the Final Remedy.

2. Groundwater

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

- a. Natural Attenuation to achieve MCLs for toluene and arsenic in groundwater within a reasonable timeframe.
- b. The following groundwater use restrictions shall remain in place until MCLs are achieved:
 1. Groundwater at the Facility shall not be used for any purpose other than 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 and
 2. No new wells shall be installed on Facility property unless it is demonstrated to EPA that such wells are necessary to implement the final remedy and EPA provides prior written approval to install such wells.

The land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility will be implemented through enforceable ICs such as an order and/or an Environmental Covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act, 27 Pa. C.S. Sections 6501-6517 (UECA) to be recorded with the deed for the Facility property. If EPA determines that additional monitoring activities, institutional controls, or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an order or Environmental Covenant, provided any necessary public participation requirements are met. If any individual with an interest in the Facility property believes that information shows that any use restrictions in this proposed and later selected by EPA is no longer necessary to protect public health and the environment, the individual may submit such information to EPA for consideration. EPA can change any such restriction if it determines it is no longer necessary, after any required public comment period.

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	Human health and environmental exposure for soil and groundwater will be protected through restrictions of potable groundwater use and residential use of the Facility.
2) Achieve media cleanup objectives	The proposed remedies meet the media cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource use(s). The proposed use restrictions at the site will eliminate future unacceptable exposures to soil, and groundwater until applicable MCLs are attained.
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. Based on the historical information known about the Facility, the sources of contamination to groundwater and soil have been removed from the site.
Balancing Criteria	Evaluation
1) Long-term effectiveness	The long-term effectiveness of the proposed remedy will be maintained by the existence of an EC on the property for soil, and an EC for groundwater until MCLs are attained.
2) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	Soil contaminant levels were determined to not be a greater than acceptable risk to human health and environment and exposure will be controlled through restrictions in an EC. Groundwater contaminant levels are anticipated to achieve MCLs through Natural Attenuation; groundwater use will be restricted to prevent exposure until applicable MCLs are attained.
3) Short-term effectiveness	EPA's proposed remedy for soil and groundwater does not involve activities that would pose a short-term risk to human health or environment.
4) Implementability	The remedy is readily implementable at the Facility. The proposed remedy includes implementation of use restrictions through the enforceable mechanism of an EC.
5) Cost	The remedy for soil and groundwater requires an EC, therefore costs will not exceed the threshold for which financial assurance is required.
6) Community Acceptance	EPA will evaluate community acceptance based on comments received during the public comment period, and will address any comments in the Final Decision.
7) State/Support Agency Acceptance	EPA will determine PADEP's acceptance of the proposed remedy during the public comment period, and any comments will be addressed in the Final Decision and Response to Comments.

Overall, based on the evaluation criteria, EPA has determined the proposed remedy meets the threshold criteria and provides the best balance of tradeoffs with respect to the evaluation criteria.

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 construction of engineering actions to remediate soil or groundwater and given that the costs of implementing institutional controls at the Facility will be minimal, EPA is proposing that no financial assurance be required.

Section 8: Public Participation

The public may participate in the remedy selection process by reviewing this SB and documents contained in the AR for the Facility and providing comments. The AR contains all information considered by EPA when proposing this remedy. The AR documents are available for public review at the location below:

U.S. EPA Region III
4 Penn Center (3LD20)
1600 JFK Boulevard
Philadelphia, PA 19103
Contact: Kristin Koroncai
Phone: 215-814-2711
Fax: (215) 814-3113
Email: Koroncai.kristin@epa.gov

The public comment period will last thirty (30) calendar days from the date that the notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to Kristin Koroncai. EPA will hold a public meeting to discuss this proposed remedy upon request. If you would like to request a public meeting, please contact Kristin Koroncai.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the proposed remedy, EPA will modify the proposed remedy or select an alternative based on the new information and/or public comments. In the Final Decision, EPA will announce the selection of its final remedy, respond to all relevant comments received, and explain the rationale for any changes to the proposed remedy. All persons who comment on this proposed remedy will receive a copy of the Final Decision. Others may obtain a copy by contacting Kristin Koroncai at the address listed above. The Final Decision will also be made publicly available on EPA's website for the Facility.

Section 9: Signature

DANA
AUNKST

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by DANA AUNKST
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Date: _____

Dana Aunkst, Director
Land, Chemicals, and Redevelopment Division
US EPA, Region III

Section 10: Index to the Administrative Record

2022, March 2. Environmental Indicator Investigation Report. INTEX Environmental Group, Inc.

2021, October 6. Workplan Report. INTEX Environmental Group, Inc.

2021, August 26. Groundwater Sampling Summary Report. INTEX Environmental Group, Inc.

2020, September 25. Act 2 approval letter. Pennsylvania Department of Environmental Protection.

2020, June 22. Remedial Action Completion Report: Brightsmith Coaters Soil Remediation. INTEX Environmental Group, Inc.

2007, January. Environmental Indicator Inspection Report. URS.

1989, August 14. Environmental Priorities Initiative: Preliminary Assessment of Prior Coated Metals, Incorporated. NUS Corporation.

Table 1. Summary of exceedances in soil from 2021 sampling investigation (INTEX, 2022).

	Industrial RSL (mg/kg)	B-1 (7.0-7.5)	B-2 (0.6-1.0)	B-3 (0.6-1.0)	B-3 (7.0-7.5)	B-4 (3.5-4.0)	B-7 (7.5-8)	B-8 (3.0-3.5)	B-9 (11.0-11.5)	B-10 (7.5-8.0)	B-11 (2.0-2.5)
Arsenic, total	3	3.24	3.89	3.78	3.76	3.77	4.06	4.05	3.34	3.41	6.06
Hexavalent Chromium	6.3	72.4	ND	129	-	113	ND	ND	ND	ND	0.556

Table 2. Summary of exceedances in groundwater from 2021 sampling investigation (INTEX, 2022).

	EPA MCL Drinking water (mg/L)	MW-8
Toluene	1	2
Arsenic, Total	0.01	0.01466

Figure 1. Facility aerial showing groundwater monitoring well locations from 2021 investigation.

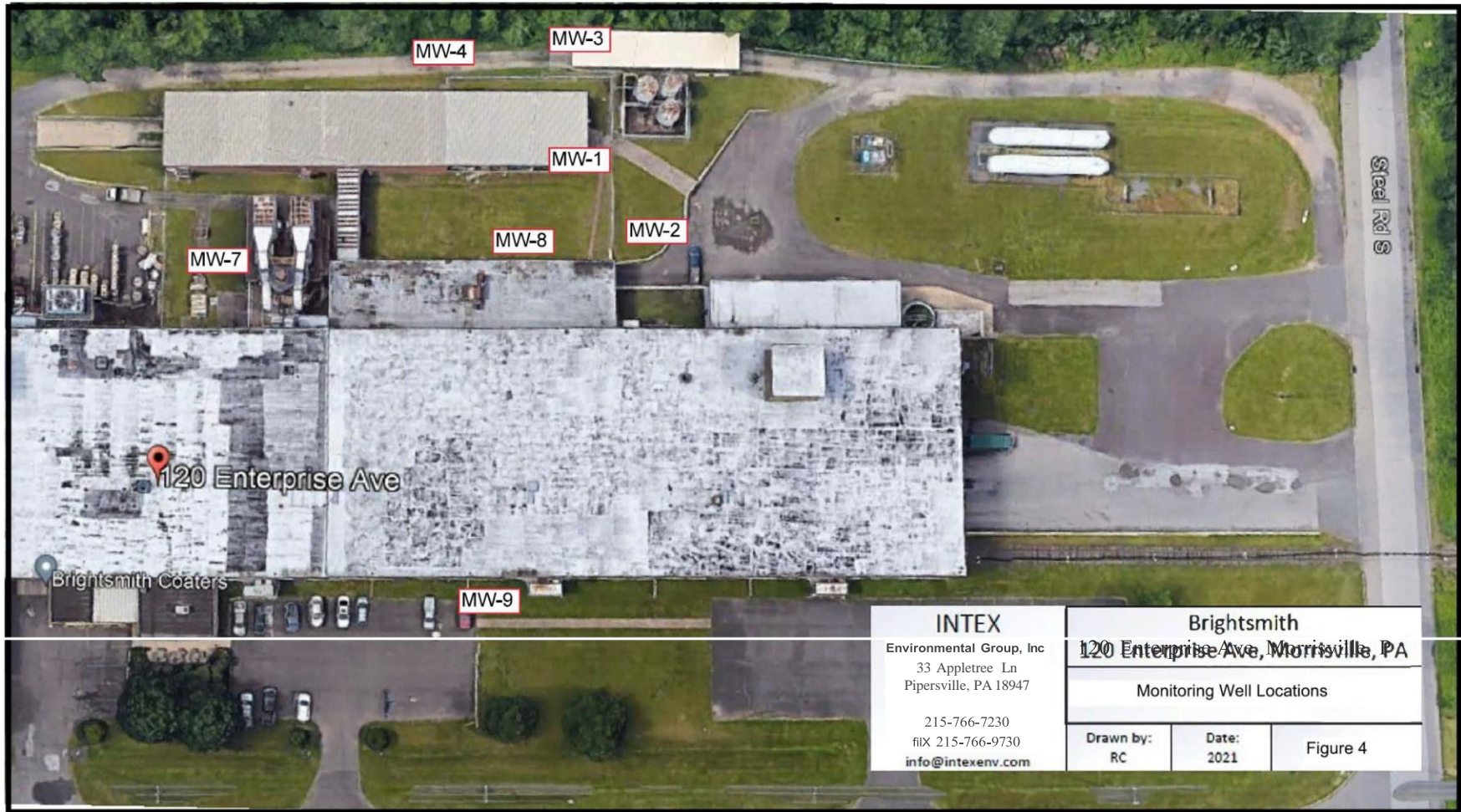
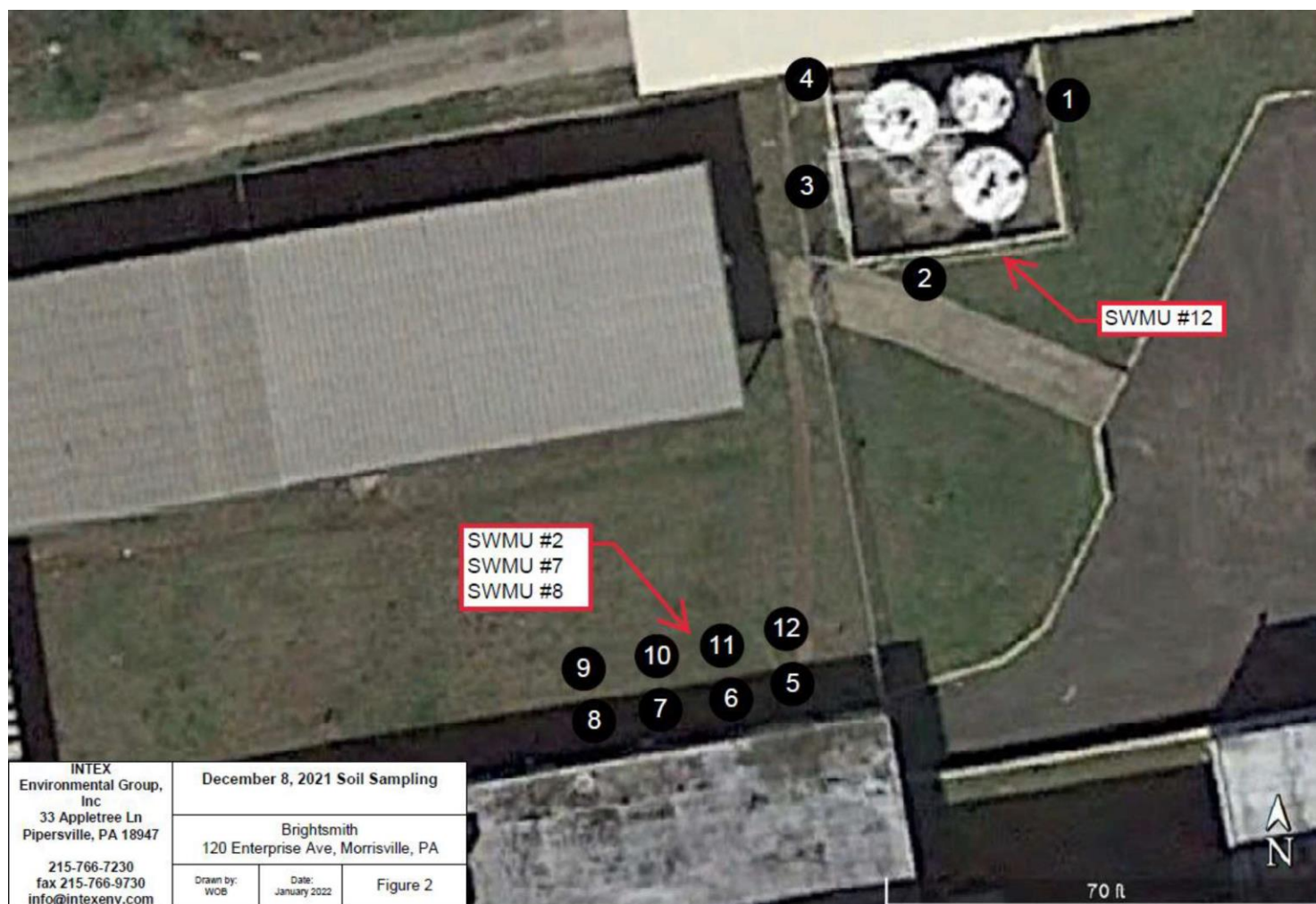


Figure 2. Facility aerial showing soil sampling locations from 2021 investigation. The area identified as “SWMU #2, # 7, #8” is where the USTs and sand filter tank were formerly located. The area identified as “SWMU #12” is where the water treatment settling lagoon was formerly located.



Attachment 1. VISL results for Toluene.

Default VISL Results

1

Variable	Value
Exposure Scenario	Resident
Temperature for Groundwater Vapor Concentration C	16
ED _{nc} (exposure duration) years	26
TR (target risk) unitless	1E-06
THQ (target hazard quotient) unitless	0.1
LT (lifetime) years	70
EF _{nc} (exposure frequency) days/year	350
ED _{n1} (mutagenic exposure duration first phase) years	2
ED _{n2} (mutagenic exposure duration second phase) years	4
ED _{n3} (mutagenic exposure duration third phase) years	10
ED _{n4} (mutagenic exposure duration fourth phase) years	10
EF _{n1} (mutagenic exposure frequency first phase) days/year	350
EF _{n2} (mutagenic exposure frequency second phase) days/year	350
EF _{n3} (mutagenic exposure frequency third phase) days/year	350
EF _{n4} (mutagenic exposure frequency fourth phase) days/year	350
ET _{nc} (exposure time) hours/day	24
ET _{n1} (mutagenic exposure time first phase) hours/day	24
ET _{n2} (mutagenic exposure time second phase) hours/day	24
ET _{n3} (mutagenic exposure time third phase) hours/day	24
ET _{n4} (mutagenic exposure time fourth phase) hours/day	24
AF _{gw} (Attenuation Factor Groundwater) unitless	0.001
AF _{sl} (Attenuation Factor Sub-Slab) unitless	0.03

Resident Vapor Intrusion Screening Levels (VISL)

Key: I= IRIS; P = PPRTV; 0 = OPP; A= ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = DWSHA; W = TEF applied; E = RPF applied; U = user provided; G = see RSL User's Guide Section 5; CA= cancer; NC= noncancer.

2

Chemical	CAS Number	Does the chemical meet the definition for volatility? (HLC>1E-5 or VP>1)	Does the chemical have inhalation toxicity data? (IUR and/or RfC)	Is Chemical Sufficiently Volatile and Toxic to		Target Indoor Air Concentration (TCR=1E-06 or THQ=0.1) MIN(C,,,Ca.nc) (1glm')	Toxicity Basis	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-06 or THQ=0.1) C,,,Target (r1g/m'l)		Target Groundwater Concentration (TCR=1E-06 or THQ=0.1) C... Target (11g/L)	Is Target Groundwater Concentration <MCL? (C,,, < MCL?)
				Pose Inhalation Risk Via Vapor Intrusion from Soil Source? (C,,, > c...Target?)	Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source? (C,,, > c,,,Target?)						
Toluene	108-88-3	Yes	Yes	Yes	Yes	5.21E+02	NC	1.74E+04	3.00E+03	No (1000)	
Pure Phase Vapor Concentration c,,,l (16 °C)	Maximum Groundwater Vapor Concentration c..l	Temperature for Maximum Groundwater Vapor Concentration (°C)	Lower Explosive Limit LEL (%) by volume	LEL	IUR	IUR	RfC	RfC	Mutagenic	Carcinogenic VISL TCR=1E-06 Cial.C	Noncarcinogenic VISL THQ=0.1 C ,,,,
(11glm')	(µglm')	(°C)		Ref	(ug/m') ¹	Ref	(mg/m')	Ref	Indicator	(µglm')	(pglm')
1.41E+08	9.13E+07	16	1.10	CRC			5.00E+00		No		5.21E+02

Chemical Properties

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Chemical Number	CAS	Does the chemical meet the definition for volatility? (HLC>1E-5 or VP>1)	Does the chemical have inhalation toxicity data? (IUR and/or RfC)	MW	MW Ref	S (mg/L)	S Ref	MCL (ug/L)	HLC (atm-m ³ /mole)	Henry's Law Constant (unitless)	Henry's Law Constant (16 °C) (unitless)	Henry's Law Constant Used in Cales (unitless)	H' and HLC Ref
Toluene	108--88-3	Yes	Yes	92.142	PHYSPROP	5.26E+02	PHYSPROP	10(0)	6.64E--03	2..71E-01	1.74E--01	1.74E-01	PHYSPROP

Enthalpy of vaporization @ groundwater temperature	Enthalpy of vaporization at the normal boiling point	Normal Boiling Point BP	Exponent for <i>M_{air}</i>	Vapor Pressure VP (mmHg)	Vapor Pressure VP (16 °C)	Critical Temperature T _c (K)	Lower Explosive Limit LEL (% by volume)
t.H _{v,p} (cal/mol)	.l.H _{v,m} (cal/mol)	.l.H _{v,m} (K)	Ref	Ref	Ref	5.92E+02	1.1
9.09E+03	7.93E+03	CRC 383.75	PHYSPROP	0.363768542	2.ME+01	PHYSPROP	1.76E+01