DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: American Ink and Coatings Corporation
Facility Address: 330 Pawlings Road, Valley Forge, PA 19482
Facility EPA ID #: PAD002353290

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ If data are not available, skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		X		See below description for all
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

☒ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☐ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale:

Site History

American Lacquers and Solvents began operations on the property in the 1920's, producing solvent and water-based inks and paint products. The property is situated on the bank of the Schuylkill River. The property historically consisted of fourteen buildings, laboratory, hazardous waste storage areas, raw ink storage areas, tank farms, warehouses, and offices. In 1976, the Facility changed names to AIC and sold the paint portion of the company but continued to manufacture printing inks on site until 2006. In 2006, the property was sold to Delaware Valley Properties II, LLC and is currently used by Delaware Valley Paving for an office, equipment storage, and parking.

There have been no formal subsurface soil investigations conducted at the Site. Soil investigations were initiated in response to specific releases or upon removal of several of the closed-in-place USTs. There have been no groundwater or surface water investigations on site.

The Facility had operated with several permits in place, including: NPDES permit for 5 outfalls and a Title V Operating Permit for air pollution sources. Hazardous Waste inspections have been conducted by PADEP at the Facility since 1980, with more routine annual inspections beginning in 1989.

Storage Tank History

Many underground storage tanks (USTs) and aboveground storage tank (AST) have existed on the property for storage of hazardous materials and wastes. A total of 22 USTs are known to have existed on the property. Thirteen USTs were identified on the property based on NUS' 1990 report. Some of these USTs were described as former steel-constructed railroad cars and reportedly stored hazardous materials used during the ink/paint manufacturing process. It was reported that all 13 USTs were closed-in-place in 1986 by filling with sand.

One of these USTs formerly stored heating fuel oil and had a known release in 1995; this tank and surrounding impacted soils were excavated and disposed offsite. Post excavation soil sampling indicated no contaminated soil remained. In February 2007, four USTs were removed from the southwestern corner of Building No. 3. In August 2007, two additional USTs were removed from the western side of Building No. 6. Post-excavation soil samples collected upon removal of the

USTs located at the southwestern corner of Building No. 3 showed trace concentrations of several VOCs. None of the concentrations exceeded either Residential or Non-Residential Direct Contact or Used Aquifer Soil-to-Groundwater MSCs, as discussed. In addition, a composite of the sand fill materials collected from the four USTs located in the vicinity of Building No. 3 showed no VOCs were present except acetone at a concentration below the PADEP Residential or Non-Residential Direct Contact or Used Aquifer Soil-to-Groundwater MSCs and the PADEP Clean Fill Concentration Limits for Organics. The sand fill materials were used on-site as backfill. After the removal of one UST in 1995 and six more in 2007, it is presumed that 15 closed in place USTs remain on the property. The majority of the USTs were reportedly leak tested with no leaks found in any of the tested tanks, however documentation of leak testing could not be located.

An AST farm consisting of 11 vertical tanks was constructed to store raw, reclaimed, and spent solvents. These 11 tanks were situated on an elevated concrete pad surrounded by a one-foot high berm; the concrete pad has 2 sumps. These tanks and concrete pad have reportedly been removed. An additional 12 ASTs were located inside Building No. 6 and outside Building No. 5 (directly above the closed in place UST farm). In 2007, 18 ASTs were removed from the property; all 11 tanks from the AST farm and 7 tanks from outside Building No. 5 were removed. The five remaining ASTs were removed from the property, however the details or time of this is unknown. These five tanks were located within Building No. 6, which was demolished along with many of the other structures on the property sometime between 2011 and 2016. Currently, there are no known ASTs on the property.

Additional minor releases have occurred on the property. In 2000, AIC reported a release to PADEP of styrene-acrylic latex during the transfer of product from a receiving tank. The product leaked in an area of 2 by 12 feet and migrated to the bank of the Schuylkill River. Approximately two gallons of the material entered the river; approximately twenty drums of diluted material were recovered. No further action was taken by PADEP regarding this incident. A release in 2004 of denatured alcohol from a leaking underground pipe. Soil testing was completed after excavation from this release and results indicated no contamination remained in the soil. PADEP reviewed and accepted the remediation report from this release on July 6, 2006.

Areas of Concern/Solid Waste Management Units (SWMUs)

SWMU #1 and 2 – Buildings No. 5 and 6

Of the fourteen buildings that existed on the property when manufacturing operations took place, five were used for manufacturing of paints and inks. Buildings No. 5 (SWMU #1) and 6 (SWMU #2) were used to mix and dispense batches of product in large overhead mixing tanks. The mixing tanks located in both buildings were cleaned after batches using solvents and water; this spent solvent and rinse water were then placed into 55 gallon steel drums which were temporarily stored inside the buildings until transferred. The spent solvent drums were transferred to a 330-gallon spent solvent storage tank (SWMU #3) located in the Hazardous Waste Drum Storage Area (SWMU #5), and the rinse water drums were placed inside SWMU #5 until picked up for offsite disposal. There are no known spills in this building, however a 1990 site visit observed colored ink splattered on the floor. There are reportedly no floor drains. During a site visit in 1990 Building No. 5 had a maximum PID reading of 115ppm. A 2006 Phase I assessment discovered several closed in place USTs located beneath building No. 5; building No. 5 has since been demolished however the tanks are presumably still in place. This area is now paved over.

Building No. 6 served the same function as Building No. 5 during the manufacturing process. During a 1990 site visit, the maximum PID reading was 20ppm. There are no known spills in this building, however a 1990 site visit observed colored ink splattered on the floor. There are reportedly no floor drains in Building No. 6 either. Building No. 6 has since been demolished and the area is now paved over.

SWMU #3 – 330 gallon spent solvent storage tank

The 330 gallon spent solvent storage tanks was located within the Hazardous Waste Drum Storage Area (SWMU #5). It was a steel tank, the top nearly flush with the surface of the elevated dock approximately 4 feet above the ground. Once full, the tank contents were pumped into a 6,000 gallon storage tank (SWMU #4) located in the AST farm. There are no known spills or evidence of spills. The tank had reportedly never been leak tested; it has since been removed.

SWMU #4 – 6,000 gallon spent solvent storage tank

This tank was in use since 1986 and was one of the 11 tanks in the AST farm located south of Building No. 9. The AST farm (and the tank) were surrounded by a 1 foot high concrete berm. Contents of this tank were pumped into a tanker truck for offsite disposal approximately every 6-8 weeks, when full. There are no known spills or releases from this tank; it has since been removed.

SWMU #5 – Hazardous Waste Drum Storage Area
This are consisted of a 40 by 50 foot concrete pad surrounded by a one-foot high concrete berm and was located south of the AST farm. Drums containing rinse water, spent solvents, and tank sludge were stored here. Reportedly, once every 90 days the drums stored in this area were transferred and hauled for off site disposal. There are no known spills or releases from this area. This area was inspected in 2006 during a Phase I and was observed to be well maintained with no evidence of spill or releases.

SWMU #6 – Waste Oil Drum Storage Area
Oil generated from maintenance of the Facility's machinery was placed into 55-gallon steel drums and stored on a 10x15ft concrete pad in this area, located West of the 330-gallon spent solvent tank (SWMU #3). This area did not have a secondary containment structure. Drums of waste oil were reportedly periodically hauled offsite for disposal. No reports of spills or evidence of spills or releases.

SWMU #7 – Underground Spent Solvent Storage Tank
This tank was located South of SWMU #5 and was a 6,000-gallon UST installed in the 1970s. It was closed in place (filled with clean sand) in 1986 when the AST farm was constructed. The tank was used to store spent solvent generated from cleaning the product-mixing tanks located in Buildings 5 and 6. There are no known spills or releases from this area. The tank was reportedly leak tested in mid/late 1980s and no leaks were identified.

Additional Areas of Concern
To the extreme South of the property, a 50 by 50 foot open-sided shed was used to store nitrocellulose, a raw material used in the manufacturing process. No further information is known about the practices used to store or transport this material, however there are no known reported releases or spills. Previous to storing hazardous waste drums in the storage area that was constructed in 1993, drums were stored in an area long the bank of the River. This area was never investigated, however drums were found partially buried during PADEP inspections. The drums were removed and found to contain sediment.

Assessment of Media Contamination

Groundwater:
No detailed site-specific geologic or hydrogeologic studies have been conducted at the property. Two production wells were located on-site. These wells (depths of 150 and 177 feet bgs) were reportedly abandoned in 1980 when public water began to be supplied to the Facility and neighboring properties. It is unknown whether these wells remain on-site and open. If either one or both of these wells remained open during the Facility's operational period, the wells could have been a conduit for contaminants from the surface to the underlying groundwater. The groundwater flow gradient for the Site has not been established; however, it is presumed the groundwater flow is toward the east in the direction of the Schuylkill River. There are no known releases, spills, or evidence to reasonably suspect groundwater on site is contaminated.

Based on the type of construction reported for some of the USTs (steel railroad cars), possible preferential pathway from the two production wells, and possible groundwater pathways from surface contamination, it is possible that groundwater may be contaminated on site if a spill or release occurred. However, there are no known spills or releases on site, other than two minor spills that were remediated, and therefore groundwater is not reasonably suspected to be contaminated. Further, groundwater likely flows directly into the Schuylkill River and would not pose a risk to potable water sources.

Indoor and Outdoor Air:
No groundwater or soil data exists for the Site other than post-excavation soil samples collected during removal of several USTs. No major releases of solvents to soil or groundwater are known; however, there was a release of No. 2 fuel oil in the vicinity of Building No. 1. Post-excavation soil samples confirmed that impacted soil was adequately removed. Therefore, contamination of indoor and outdoor air is not reasonably suspected.

Surface and Subsurface Soil (>2 feet):
According to information obtained from the Pennsylvania State University Soil Map program, AIC is underlain by two soil types which include Rowland Silt Loam, Dark Surface soil (classified as Rp) and the Urban Land – Penn complex soil type (classified as UxD). The Rowland Silt Loam soils are reportedly well-drained and moderately deep soils found on floodplains. These soils are found east of Building Nos. 10, 11, 12, and 13, along the banks of the Schuylkill River, and south of the Facility, including the area of the former nitrocellulose storage shed. At the Site, the Rowland Silt Loam soils have up to 2 percent slope. The seasonal high water table ranges from three to five feet deep. Permeability is generally moderate. The Urban Land soil underlies the manufacturing area of the Facility. These soils exhibit 8 to 25

percent slopes, are well-drained, and moderately permeable. The seasonal high water table is greater than 5 feet deep. The Facility is located within the floodway and the 100-year flood plain of Schuylkill River. During earlier hazardous waste inspections conducted by PADEP (e.g., 1980s and early 1990s), puddles of paint pigment were observed outside of the manufacturing buildings. Areas where wastes were stored and loading areas did not have walls to contain spills. Drums containing hazardous wastes were routinely stored outside of the manufacturing buildings, outside of secondary containment areas. Leaking drums of hazardous waste materials were observed over the containment trench in the raw materials storage area, which ultimately discharged to the Schuylkill River. Hazardous waste drums were stored on permeable concrete pads. In addition, drummed hazardous waste materials were stored along the banks of the Schuylkill River without secondary containment or covering and two drums were observed buried on the bank of and in the river. While some USTs had reportedly been leak tested and no leaks identified, documentation of testing is not available.

Soil testing conducted after minor spills and excavation of USTs reports that contaminated soils were adequately remediated on site and no leaking of USTs was found. Therefore, it is not reasonably suspected or known that surface or subsurface soil is contaminated above appropriate risk based standards. Further, the property is currently completely paved and so a complete pathway for human exposure does not exist under current site use.

Surface Water and Sediment:
The nearest surface water body is the Schuylkill River located immediately adjacent to the eastern property boundary of the Facility. AIC held a NPDES permit (permit ID 0011002) for five outfalls along the Schuylkill River. Two of the five outfalls discharged non-contact cooling water directly to the river. Another two of the five outfalls discharged only storm water run-off from both on-site and off-site sources to the river. The fifth outfall discharged a combination of on-site storm water run-off and non-contact cooling water directly to the river. Water quality inspections and information from AIC's NPDES permit renewal applications indicate that while the 1998 analytical results for the non-contact cooling water showed elevated concentrations of copper and zinc, the level of the concentrations did not pose a potential surface water quality criteria violation. There were no recorded violations of the NPDES discharge limits. Waste drums were stored above a trench and spills of waste material (pigments) found during PADEP inspections outside of Building No. 11. PADEP inspections also found stained soil/gravel throughout the property, particularly in the "scrap metal" area where empty drums were haphazardly placed. A 1993 PADEP inspection revealed that the historic drum storage area was located along the Schuylkill River and did not have secondary containment; this storage was eventually moved in 1993 to the raw material storage area. The raw material drum storage area had a permeable base; this was later corrected by replacement of the concrete pad in 1993. This area also was observed to have no secondary containment prior to reconstruction, and it was noted that possibly pollution into surface water from this area via the containment trench could occur. Paint pigment chips were observed in the trench. During later inspections in 1998 by PADEP, partially exposed 55-gallon steel drums were observed between the facility fence and the River. One drum was excavated, however the second drum was not due to river conditions at the time. Follow up by the facility stated that the drum contained dirt, mud, and weeds and no evidence that the drums originated from the Facility. While there were a few reported instances of general operational and maintenance practices that could be improved on, there is not substantial evidence to suspect that surface water or sediment are contaminated above appropriate risk based standards.

Reference:

Environmental Indicator Inspection Report, American Inks and Coatings Corporation. URS, April 2008.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

☐ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

☐ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

☐ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale:

Reference:

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

☐ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale:

Reference:

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

☐ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

☐ If no - (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

☐ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code.

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the (insert facility and EPA ID #), located at (insert address) under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

☐ NO - "Current Human Exposures" are NOT "Under Control."

☐ IN - More information is needed to make a determination.

Completed by KRISTIN KORONCAI Digitally signed by KRISTIN KORONCAI Date: 2023.09.25 13:46:08 -04'00' Date: 9/25/2023

Kristin Koroncai
Remedial Project Manager

Supervisor ALIZABETH OLHASSO Digitally signed by ALIZABETH OLHASSO Date: 2023.09.25 14:09:08 -04'00' Date _____

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Locations where References may be found:

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