

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: ABB Inc.
Facility Address: Muse- Bishop Road, Muse, PA 15350
Facility EPA ID #: PAD045873197

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 #8 and enter "IN" (more information needed) status code.

BACKGROUND

The property is 87 acres located Muse Bishop Road in Cecil Township, Washington County, Pennsylvania with an operational history of various coal mining and manufacturing companies from 1923 to 1987. In the 1970s CE Cast began investigating soil and the surface water in the unnamed tributary at the facility in conjunction with Pennsylvania Department of Environmental Protection (PDEP) (formerly Pennsylvania Department of Environmental Resources (PADER)), which led to a COA (Consent Order and Agreement) between them. The agreement required the removal of impacted soil and drums and the construction of a landfill to contain this material. By the 1990s, over ninety (90) above ground storage tanks (ASTs) and at least three underground storage tanks (USTs) were removed. Since the closure of the On-Site solid waste landfill in 2008-2009, the facility is currently vacant open land owned by ABB. The closure included removal of the landfill (cap, contents, and liner) and disposed of the impacted material off-site. Since the 2000s, the facility has provided copies of semi-annual site-wide groundwater monitoring reports.

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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	x			VOCs, SVOCs
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 and Reference(s):

The 2020 analytical groundwater results for volatile organic compounds (VOC) and semi –VOCs (SVOC) were compared to PADEP’s Statewide Health Standards (SHS) Medium-Specific Concentrations (MSC) for organic substances in groundwater. Historically, PCE and TCE were the primary VOCs detected in the groundwater near the Main Plant Area. However, 2020 data for MW-2, MW-6, MW-105, and MW-204 continues to demonstrate the overall decrease in reported parent compound concentrations of PCE and TCE. Also, the data shows continuing degradation process in the chlorinated aliphatic group of VOCs. Daughter compounds such as cis-1,2-dichloroethene (DCE), 1,1-DCE, and vinyl chloride are generally increasing or stabilizing, while the parent compound concentrations (i.e., PCE and TCE) are generally decreasing. In terms of SVOCs, bis(2-ethylhexyl) phthalate (DEHP), and 1,4-dioxane has been detected. The primary SVOC has been 1,4-dioxane. The greatest concentration has been in the former landfill area and hydraulically downgradient of the former landfill in monitoring wells MW-2, MW-101, MW-202, and MW-203. The concentrations in these wells have decreased. Off-Site, monitoring wells MW-501 through MW-503 were below the MSC for 1,4-dioxane. The data supports the conclusion that the chlorinated compound’s plume is stable on the facility property. Also, Due to the chemical and structural makeup of 1,4-dioxane, lack of receptors and potential migration pathways to the south of the Property, the concentrations of 1,4-dioxane detected in sentinel monitoring wells does not present a concern for exposure. Below is a map showing contaminants of concern in groundwater for 2020:

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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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	NO	NO	NO	NO			NO
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:

- Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
- 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 and Reference(s):

A well search was conducted in 2002 and three private residences using potable water wells downgradient of the facility were identified. Since 1,4-Dioxane exceeded the state MSC the private wells were abandoned and connected to the local public water system. In 2020 GHD Services Inc. completed a Pennsylvania Groundwater Information System (PaGWIS) search for wells within a 0.5-mile and 1-mile radius around the facility which concluded that there a no residential private wells within the 0.5-mile radius. A visual survey of newly developed areas, and areas currently under construction with new homes around the facility was also conducted in 2020. This survey concluded that all new developments were connected to a municipal water supply, and no new potable wells were visually evident. Additionally, the facility is currently vacant land.

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 and Reference(s):

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 ABB Inc. facility, EPA ID # PAD045873197, located at Muse-Bishop Road, Muse, PA 15350 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 (signature)  Date 3/28/2020
(print) Priscilla Ortiz Carrero
(title) Physical Scientist

Supervisor (signature) _____ Date 3/29/2020
(print) _____
(title) Branch Chief, RCRA CA2
(EPA Region or State) EPA Region 3

Locations where References may be found:

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