

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

Facility Name: Siemens Water Technologies Corp. (formerly Envirotrol Inc.)
Facility Address: 118 Park Rd., Darlington, PA 16115
Facility EPA ID #: PAD987270725

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

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		Not known or reasonably suspected to be contaminated
Air (indoors) ²		x		Not known or reasonably suspected to be contaminated
Surface Soil (e.g., <2 ft)		x		Not known or reasonably suspected to be contaminated
Surface Water		x		Not known or reasonably suspected to be contaminated
Sediment		x		Not known or reasonably suspected to be contaminated
Subsurf. Soil (e.g., >2 ft)		x		Not known or reasonably suspected to be contaminated
Air (outdoors)		x		Not known or reasonably suspected to be contaminated

- 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):

Siemens Water Technologies Corp. (Siemens) is a permitted facility that regenerates spent carbon via thermal treatment. The EPA RCRA permit and PADEP Air Quality permit set forth the conditions and requirements for the management of hazardous wastes and the operations of the kilns. The regeneration process consists of placing the spent carbon into a kiln at various temperatures until the volatiles are driven off. From the kiln the regenerated carbon is sent through a cooling screw where it is cooled by noncontact water. After the cooling process the regenerated carbon it is packaged for shipment.

The acid gases by-products from the thermal treatment are diverted to an after burner where residual fly ash in the gases is further incinerated to destroy any remaining heavy organics. The gases are then sent to a wet scrubber where particulates and pollutants are removed. A final stage through a carbon packed column removes the acid gas and produces clean steam, which is discharged to the atmosphere. Water collected from the wet scrubber is disposed offsite as hazardous wastes.

Given the operations at the Facility, any potential releases (i.e., accidental spills) to the environment are extremely low. The thermal treatment process is confined within the operation building that has precautionary measures (e.g., concrete slab floors, berms, off-gas treatment) to prevent potential releases to the environment. Environmental dust samples collected onsite and offsite concluded that the operations at the Facility have not adversely impacted the environment or the surrounding community. No indications of past or ongoing uncontrolled releases were noted during the sampling event at the facility. There is no evidence to suspect that the operations at the Facility pose a human health risk or have adversely impacted the environment. Siemens is currently in compliance with their permits. (1996 EPA Onsite/Offsite Sampling Report)

Air (outdoors):

All point sources releases (i.e. stacks, vents) are controlled by the PADEP Air Quality permit. The impact of any incidental releases are limited to the property and the immediate vicinity of the facility in a form of dust, which is controlled by the housekeeping practices at Siemens. In 1996, EPA conducted a comprehensive sampling event at the Facility. Environmental dust samples collected onsite and offsite concluded that the operations at the Facility have not adversely impacted the environment or the surrounding community. Siemens is currently in compliance with their Air Quality

permit. Currently, there is no reason to suspect that outdoor air has been adversely impacted by the Facility. (1996 EPA Onsite/Offsite Sampling Report)

Air (Indoors):

Given the type of operations at the Facility the potential for indoor releases are extremely low. There is no evidence to suspect that indoor air is a concern based on present and past operations and practices at the Facility.

Surface and Subsurface Soils and Groundwater:

Given the type operations at the Facility, any potential releases (i.e., accidental spills) to soil and groundwater are extremely low. The thermal treatment process is confined within the operation building that has precautionary measures (e.g., concrete slab floors and berms) to prevent potential releases to soil and groundwater. Environmental dust samples collected onsite and offsite concluded that the operations at the Facility have not adversely impacted the environment or the surrounding community. No indications of past or ongoing uncontrolled releases were noted during the sampling event at the facility. There is no evidence to suspect that the operations at the Facility have impacted the soils and groundwater. Siemens is currently in compliance with their permits. (1996 EPA Onsite/Offsite Sampling Report)

Surface Water and Sediment:

Given the type operations at the Facility, there potential for releases to surface water or sediment are extremely low. Waste waters from the wet scrubbers are collected and disposed offsite. Operating and engineering requirements are in place to comply with RCRA storage and management permit that controls the potential of accidental hazardous waste releases thru this pathway. There is no evidence to suspect that the operations at the Facility have impacted the surface water and sediment. Siemens is currently in compliance with their permits. (1996 EPA Onsite/Offsite Sampling Report)

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 and Reference(s):

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 **Siemens Water Technologies Corp.** facility, EPA ID # **PAD987270725**, located at **188 Park Rd., Darlington, PA 15143** 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 
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Date 4/15/12

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Date 4-27-12

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