

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Prior Coated Metals, Inc.  
Facility Address: 2233 26th Street SW, Allentown, PA 18103  
Facility EPA ID #: PAD 056 602 923

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, 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?

X  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 nonhuman (ecological) receptors is intended to be developed in the future.

**Definition of "Current Human Exposures Under Controls" 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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

**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. Is **groundwater** known or reasonably suspected to be "contaminated"<sup>1</sup> 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 anywhere at, or from, the facility?

X If yes – continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

\_\_\_\_\_ If no – skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

\_\_\_\_\_ If unknown (for any media)– skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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The Prior Coated Metals Facility (PCM) has been in operation at its Allentown, PA location since 1981. The facility is situated on approximately 4.5 acres of land. PCM cleans, pretreats and coats coils of cold rolled steel, galvanized steel and aluminum. The Facility is located in an industrial park and is bordered by other industrial properties.

There are two buildings located on-site (the manufacturing building and the main office). The manufacturing building encompasses approximately 105,300 square feet of the northern portion of the property. The manufacturing building houses the coating line, slitter, packaging line, three storage/warehouse areas, a maintenance shop/office, five chemical drum storage areas, the solvent distillation room, the plant office, and a locker room. Additions to the manufacturing building include a 9,000 square foot paint and solvent storage room constructed along the southeastern corner of the building in 1964 and a 2,250 square foot wastewater treatment plant (WWTP) constructed on the northeastern corner of the building in 1986. The main office building encompasses 2,240 square feet of the property along 26th Street. A fenced retention basin is located on the northwestern portion of the property. A shed for pallet storage is located on the northern portion of the property. The majority of the Site is asphalt-covered; however, grass-covered areas exist. Access to the property has been and is currently unrestricted.

The site is located in an industrial park and is bordered by other industrial properties. Properties owned by Northern Lehigh Erectors Corp and Robert Landmesser are located to the north of the site, across Mitchell Avenue. Properties owned by Baer Industrial Park and Weppco Associates are located to the east of the site. A property owned by Bastian Company, Inc. is located to the south of the site. Properties owned by Hemlock, LLC and Placement Real Estate are located to the west of the site, across 26<sup>th</sup> Street SW.

Subsurface Soil Remediation - Septic Tank Removal

As a result of former site operations, historical discharges of organic solvents and paint wastes have occurred behind the site building in a narrow strip of land that borders a wooded area, up against the property line. A septic tank located to the east of the Paint Storage Room and Spent Solvent/Paint Cartridge Area exterior wall was identified by PCM on January 8, 2011 and removed in March 2011. Following tank removal, observed impacted soil was excavated to the extent practicable. Due to the structural concerns with excavation adjacent to the building, not all impacted soil based on field-screening could be removed. A total 64.5 tons of soil was excavated and disposed off-site. Post-excavation soil sampling results indicate that concentrations of ethylbenzene, naphthalene, Tetrachloroethene (TCE), and 1,2,4-

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<sup>1</sup>"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 appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Trimethylbenzene (1,2,4-TMB) exceeded their respective EPA Regional Screening Levels (RSLs) in soil after the septic tank excavation. These contaminants were located 7-12 feet bgs, and below 12 inches of facility concrete flooring. These exceedances were subsequently delineated horizontally as part of the soil characterization activities associated with the Paint Storage and Coating Rooms. This area was re-graded following excavation and post-excavation soil sampling activities. A summary of these exceedances is provided below.

Parameter/RSL max. Value in mg/kg	Sample Location with RSL Exceedance in mg/kg	Depth (feet bgs)
Ethylbenzene / 25	PE-1 90	7-7.5
	PE-2 130	11.5-12
	PE-3 170	11.5-12
	PE-4 200	10-10.5
	PE-6 88	7-7.5
Naphthalene / 17	PE-1 87	7-7.5
	PE-3 140	11.5-12
	PE-4 45	10-10.5
	PE-5 21	10-10.5
	PE-6 44	7-7.5
	PE-7 44	9-9.5
TCE / 6	PE-1 40	7-7.5
	PE-2 47	11.5-12
	PE-3 51	11.5-12
	PE-4 50	10-10.5
	PE-5 19	10-10.5
	PE-6 68	7-7.5
	PE-7 8.4	9-9.5
1,2,4-TMB / 240	PE-3 330	11.5-12

Site restoration activities were completed following septic tank removal and sampling activities in March 2011. The excavation was backfilled to grade with certified virgin clean fill. 65 tons of clean stone fill was brought on-site and compacted into place.

There are no completed pathways between soil contamination and human receptors at this facility. PCM has purchased a portion of the adjacent property from Weppco Associates, so that all soil impacts are now contained on the property owned by PCM.

#### Groundwater

Groundwater characterization activities were completed between August 2011 and September 2013 to further assess site groundwater quality, after removal of most of the contamination source. The investigation was completed to evaluate groundwater quality at existing well locations and in areas where VOC soil impacts were previously identified above the soil to groundwater numeric values.

The scope of the groundwater characterization activities included the collection of groundwater samples from temporary well points outside the Paint Storage Room and Spent Solvent/Paint Cartridge Area, installation of three overburden monitoring wells and six bedrock monitoring wells, and the completion of seven groundwater monitoring and sampling events from the expanded well network (14 wells in total).

The water table generally occurs within the bedrock material, at depths of approximately 61 to 75 feet below ground surface (bgs). However, based on observations during soil boring advancement and overburden well installation activities, seasonally perched groundwater has been encountered in the overburden material in the vicinity of the former septic tank at depths ranging from 8 to 30 feet bgs.

Metal coating operations resulted in the release of solvents to soil and groundwater at the property. The primary constituents of concern in soil and groundwater are 1,1,1- Trichloroethane (TCA), 1,1- Dichloroethene (DCE), 1,2,4-TMB, 1,3,5-TMB, Benzene, cis-1,2-DCE, Tetrachloroethene (PCE), Toluene, and Trichloroethene (TCE). The facility continues manufacturing and painting at this address.

A contractor receptor evaluation was completed based on the identification of site groundwater impacts to evaluate the presence of potential receptors (potential potable wells, and surface water) in the vicinity of the site. A well search (2,500 foot radius of site) was completed using the DCNR Pennsylvania Groundwater Information System online database and information obtained from the local municipal water supplier (the City of Allentown). A summary of the well search results are as follows:

- No domestic (potable) wells were identified.
- Eleven industrial wells were identified side gradient of the facility including one well 640 feet west of the facility, three wells 880 feet east of the facility, and seven wells 1,040 feet west of the facility.
- Four industrial wells were identified down gradient of the site approximately 1,200 feet north of the facility.
- Three properties were identified south (upgradient) of the site that do not have municipal water connections and thus the possibility exists that these properties use domestic wells for their water supply. These properties are located at approximate distances of 1,200 feet, 1,840 feet and 2,240 feet from the facility.
- All other tax parcels within 2,500 feet of the site have a municipal water connection, according to the city of Allentown.

Groundwater sampling results for the September 2013 sampling event at shallow monitoring well MW-6S (this well exhibits the highest levels of contamination at the facility) indicate some exceedances. A summary of these exceedances is provided below.

Parameter/RSL max. Value in ug/L	RSL Exceedance in ug/L	Depth (feet bgs)
TCA / 200 ug/L	882 ug/L	13-18
DCE / 7 ug/L	64.9 ug/L	13-18
1,2,4-TMB / 15 ug/L	105 ug/L	13-18
1,3,5-TMB / 120 ug/L	64.2 ug/L	13-18
Benzene / 5 ug/L	35.1 ug/L	13-18
cis-1,2-DCE / 70 ug/L	727 ug/L	13-18
PCE / 5 ug/L	10.5 ug/L	13-18
Toluene / 1,000 ug/L	517,000 ug/L	13-18
TCE / 5 ug/L	7,020 ug/L	13-18

Remedial investigative findings to date show groundwater containing dissolved solvents have not migrated off-site, with all high values of contamination clustering around well MW-6S and 6D (nested pair).

Monitoring wells MW- 4, MW-5, and MW-12D were installed downgradient of the contaminated wells MW-6S and 6-D, and show no signs of contamination.

Soil and groundwater analytical data demonstrate that contamination concentrations do not represent an unacceptable risk to human health or the environment, under a non-residential (commercial/industrial) land use scenario (which specifically excludes schools, nursing homes, or other residential-style facilities or recreational areas).

#### Surface Water

The closest surface water body to the site is Trout Creek, located approximately a mile east of the site. The Little Lehigh River is located 6,000 feet to the northwest of the site. There are no completed pathways between "contamination" and human receptors.

#### Soil Gas Characterization

Contaminants of indoor air concern, primarily TCE and toluene, have been detected in groundwater and soil samples collected at the Facility. The highest concentrations seen are in the immediate vicinity of the Former Septic Tank located just outside the Paint Storage Room. An elevated concentration of toluene in one of four sub-slab soil gas samples (SSG-2) collected beneath the building was also detected.

The sub-slab soil gas samples collected in May and June 2011 present snapshots of the VOC levels in the vapor phase in the subsurface on those days. Based on the analytical results, the air quality within the building is not suspected to have been impacted due to vapor intrusion to levels of human health concern at the time the samples were collected.

Given that TCE was not detected at concentrations of vapor intrusion concern in any of the four sub-slab soil gas samples when it was observed in groundwater as high as 7,200 µg/l in MW-6S (screened between 13–18 feet bgs and located less than 15 feet from soil gas sample SSG-2) is an indicator that the pathway is insignificant. The toluene contamination seen at SSG-2 is likely attributable to background concentrations expected to be found in the Paint Storage Room indoor air.

A covenant for groundwater and soil use restrictions was recorded with the Lehigh County Recorder of Deeds on February 19, 2016. There are presently no completed pathways between "contamination" and human receptors at this facility.

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

- X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"<sup>2</sup> )
- \_\_\_\_\_ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"<sup>2</sup>) - skip to #8 and enter "NO" status code, after providing an explanation.
- \_\_\_\_\_ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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Down-gradient and side-gradient monitoring wells MW-2, MW-3, MW-4, MW-5, MW-10-D, and MW-12 form a line of perimeter wells that monitor groundwater before it moves off-site. Contamination has only been detected in well 6-S and 6-D (nested and immediately over area of concern). No contamination has been detected in any of the downgradient wells.

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<sup>2</sup> "Existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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4. Does "contaminated" groundwater discharge into surface water bodies?

- If yes - continue after identifying potentially affected surface water bodies.
- If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.
- If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>3</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

\_\_\_\_\_ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

\_\_\_\_\_ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations<sup>3</sup> greater than 100 times their appropriate "level(s)," and if estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing. .

\_\_\_\_\_ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): \_\_\_\_\_

<sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.



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6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment<sup>5</sup> appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

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If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") – skip to #8 and enter a "NO" status, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems..

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If unknown – skip to 8 and enter "IN" status code.

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Rationale and Reference(s):

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<sup>4</sup> Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

  X  

       If no - enter "NO" status code in #8.

       If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

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Groundwater at the Prior Coated facility has been adequately characterized through the installation of shallow and deep sampling wells. Contamination that is left in the groundwater has been shown through multiple rounds of sampling to not be moving off-site or to other monitoring wells onsite. PCM will conduct post-remediation monitoring to confirm groundwater quality and concentration trends. The post-remediation monitoring will consist of one comprehensive groundwater sampling event from the existing monitoring well network. The monitoring well network consists of MW-1, through MW-5, MW-6D, MW-10D, MW11-D, and MW-12D. Additionally, the shallow overburden monitoring wells MW-6S, MW-7S, MW-8S, and MW-13S will be sampled if sufficient water is measured in the wells at the time of the sampling event. Groundwater sampling will be conducted one year from PADEP ACT 2 approval of the Final report. PCM has conducted 6 monitoring events between October 2011 and January 2015.

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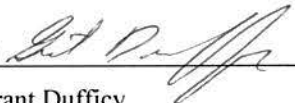
8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).


YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Prior Coated Metals, Inc., EPA ID # PAD 056 602 923, located at 2233 26<sup>th</sup> Street SW, Allentown, PA 18103. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

  X  

NO - Unacceptable migration of contaminated groundwater is observed or expected.

IN - More information is needed to make a determination.

Completed by:    (signature)                       Date 4/21/16  
                          (print) Grant Dufficy  
                          (title) RCRA Project Manager

Supervisor:        (signature)                       Date 4-21-16  
                          (print) Paul Gotthold  
                          (title) Assoc. Dir., PA Remediation, LCD  
                          (EPA Region or State) EPA Region III

Locations where References may be found

References have been appended to the Environmental Indicator Report and can also be found at PADEP's Northeast office and USEPA's Region III office.

Contact telephone and e-mail numbers:

(name)                      Grant Dufficy  
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