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:	**Cerro Metal Plant**
Facility Address:	**2022 Axemann Road, Bellefonte, PA 16823**
Facility EPA ID #:	**PAD086733540**

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 #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 "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 ground water 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).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., 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 - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The Cerro site consists of approximately 150 acres, 19 of which the plant occupies. The site characterization was conducted in multiple phases in order to define specific areas for remediation. The facility ceased operations at the Bellefonte location on March 20, 2007. As part of the characterization process, Marmon (responsible party) submitted revised Notice of Intent to Remediate (NIR) documents to PADEP in July of 2009 to address specific sites as defined in PA Code, Title 25, Chapter §250.1. The characterization resulted in the identification of six distinct areas: the North Yard, Plant 1, South Spring, Plant 4, South Yard, and the Eastern Hillside. The characterization revealed soils and groundwater beneath Plant 4 were impacted with VOCs, metals, and Polychlorinated Biphenyl (PCB) Aroclor 1248. The characterization revealed soils and groundwater beneath the northwestern portion of Plant I are impacted with volatile organic compounds (VOCs). Various inorganic constituents are present in soil, but most groundwater samples are below their respective PADEP Used-Aquifer Non-Residential (total dissolved solids < 2,500 micrograms per liter (ug/1) Non Residential Statewide Health Standard (NRSHS) MSCs. Contamination on the Plant 1 property is attributed to historic oil leakage from a degreaser, iron and copper slag and ash buried beneath a significant portion of the plant, and periodic use and spillage of industrial degreasers in historic manufacturing operations. The site characterization revealed soils and groundwater beneath the North Yard portion of the site were also impacted with VOCs.

A Consent Order and Agreement (COA) was issued by the Pennsylvania Department of Environmental Resources (PADER), (now PADEP) on November 21, 1994 to address various issues regarding the characterization and remediation of certain areas of the Cerro plant. The COA required Cerro to address environmental and health and safety issues within and around the plant.

The facility historically operated under USEPA ID No. PAD086733540 for its hazardous waste operations. It was a large quantity generator (LQG) of hazardous waste, operated under a treatment/storage/disposal (TSD) permit. Historic operations at Cerro included forging, machining, melting, drawing, pickling, drawing, and the finishing of metals; specifically copper and brass. Cerro historically handled and stored various lubricants, oils, degreasers, sulfuric acid and hydrogen peroxide for operations conducted on site. The manufacturing operations flowed in a southern to northern direction through the site buildings. Raw and scrap metals, which included copper, zinc, lead, brass, and other alloy materials, were delivered to the South Yard before being deposited into Plant 4. The raw and scrap metals were melted in Plant 4 and turned into ingots. The ingots were then extruded into various shapes and lengths within the northern section of Plant 4.

Plant 1:

The characterization of the Plant 1 area of the property consisted of soil borings, groundwater monitoring well installation/sampling, soil vapor sampling, indoor air sampling, and surface water gauging/sampling. The field work for the characterization of groundwater beneath Plant 1 was initiated on July 21, 2007. A total of nine groundwater monitoring wells and one recovery well were installed in the Plant 1 vicinity in order to characterize and remediate groundwater. The monitoring wells were located in areas where the soil samples reportedly contained elevated concentrations of contaminants of concern (COC), areas where former equipment was located, areas downgradient of the former equipment, and between the suspected source area and the likely receptor (Logan Branch). The overburden within Plant 1 ranged from five feet below ground surface (ft-bgs) to 20 ft-bgs. Groundwater samples from the monitoring wells were analyzed for VOCs, PCBs, and metals or a variation of these constituents depending on the

location and suspected contaminant. The Site characterization revealed soils and groundwater beneath the northwestern portion of Plant 1were impacted with VOCs.

After site characterization, 238.5 cubic yards of contaminated soil was excavated from the northern portion of Plant 1. Soil removed was contaminated with TCE, tetrachloroethene (PCE), cis-1,2-dichloroethene, and vinyl chloride (VC). Confirmatory sampling showed that all samples in the excavation area were below PADEP's MSC TCE value of 180 mg/kg for the 2-15 ft zone in a nonresidential scenario. The highest reading of TCE was 37.4 mg/kg in sample P1BS-3 taken at a depth of 4.5'. After confirmatory sampling was complete, multiple injections of sodium persulfate (chemical oxidant) were injected during 2010 and 2011 to help remediate impacted groundwater. Prior to the last injection of persulfate, the monitoring wells for Plant 1 were sampled for VOCs. All results were below the Statewide Health Standards, and most results were non-detect. During the February 2014 sampling event one well showed an exceedance of the Statewide Health Standards, well SB-17B-s had a value of 224 ug/L, above the PADEP MSC of 5 ug/L for TCE. This appears have been an anomaly, because the next quarter TCE was observed at 1.01 ug/l at the same location.

The final report described the area(s) of the property characterized, contaminants identified, remediation performed, and that a site-specific standard was attained. PADEP approved this report for the substances identified in soil and groundwater and remediated to an Act 2 standard within the site(s) specified. As such, the facility attained the nonresidential (NR) site-specific standard for the following compounds in groundwater: TCE via pathway elimination.

Plant 1attained the NR site-specific standard for the following compounds in soil: arsenic and chromium via pathway elimination. Arsenic numbers were slightly elevated and may be attributed to background. The Total allowable EPA Industrial Soil Regional Screening Level for Chromium(VI) is 6.3 mg/kg (1 X 10^{-6} risk). Samples for Total Chromium on the Plant 1 site ranged from 7 mg/kg to 1040 mg/kg. Total chromium concentrations in U.S. soils range from 1 to 2,000 mg/kg, with a mean of 37.0 mg/kg (USGS 1984). This constituent was probably there from slag fill from previous operations or may be naturally occurring in the native soils. Hexavalent Chromium is not a suspected COC at the site. If we conservatively assume that 5% of the observed total chromium concentration is of the hexavalent species, all of the soil samples collected and analyzed were well within EPA's allowable risk range for that contaminant.

No metals, SVOCs, or PCB exceedances were reported in groundwater beneath Plant 1.

Plant 4:

Contamination of the Plant 4 property can be attributed to historic oil leakage from the hydraulic piston-pit of older melting furnaces (TAMAs), iron and copper slag and ash buried beneath a significant portion of Plant 4, and periodic use and spillage of industrial degreasers in historic manufacturing operations. The characterization of the Plant 4 area of the property consisted of soil borings, groundwater monitoring well installation/sampling, soil vapor sampling, and indoor air sampling.

The field work for the characterization of groundwater beneath Plant 4 was initiated on July 21, 2007. A total of thirty-two groundwater monitoring wells. and three recovery wells were installed in the Plant 4 vicinity in order to characterize and remediate groundwater. The monitoring wells were located in areas where the soil samples reportedly contained elevated COC concentrations, areas where former equipment was located, areas downgradient of the former equipment, and between the suspected source area and the likely receptor (Logan Branch). The overburden within Plant 4 ranged from five ft-bgs to 20 ft-bgs. Groundwater samples from the monitoring wells were analyzed for chlorinated solvents, aromatic hydrocarbons, hydraulic oil contaminated with PCBs, and metals or a variation of these constituents depending on the location and suspected contaminant.

Plant 4 had 3 recovery wells installed, pumped, and then closed to recover DNAPL from the site. DNAPL in the form of PCB Arochlor 1248 was present in groundwater in an isolated area beneath the Plant 4 building in the area that housed the furnaces.

North Yard Plant:

The field work for the characterization of groundwater beneath North Yard was initiated with the NIR application in 2009. A total of thirty-one groundwater monitoring wells and four recovery wells were installed in the North Yard vicinity in order to characterize and remediate groundwater. The monitoring wells were located in areas where the soil samples reportedly contained elevated COC concentrations, areas where former equipment was located, areas downgradient of the former equipment, and between the suspected source area and the likely receptor (Logan Branch). The overburden within the North Yard ranged from 5 ft-bgs to 20 ft-bgs. Groundwater samples from the monitoring

wells were analyzed for VOCs, PCBs, and metals or a variation of these constituents depending on the location and suspected contaminant.

Seventeen groundwater gauging and sampling events were completed to determine the extent of contamination in groundwater. The PADEP requires post-remedial monitoring as part of pursuing site closure using site-specific standards (SSS) via pathway elimination. A post-remedial quarterly gauging and sampling program was initiated on March 22, 2013 and was completed on October 7, 2014. Groundwater gauging and sampling were completed using the USEPA Region 3 Low-Flow Sampling Procedure. The results of the quarterly gauging and sampling were summarized in quarterly reports which were submitted to the PADEP.

A groundwater extraction and treatment system was installed to remove TCE from groundwater at the plant on July 12, 2011. The system was removed from service on March 1, 2013. TCE Iso-concentration Contour maps from October 2014 show TCE with a value of 300 ppb in the well at the center of the property located in overburden. The TCE contamination drops to less than 5 ppb within 50 ft. of the well, based on groundwater data.

Groundwater usage in the vicinity of the facility is primarily for industrial purposes such as cooling and lawn irrigation. There were no known production wells at the facility. Potable water for the area is obtained from the local water utility, which receives water from various sources including wells, surface water, and reservoirs.

On April 23, 2015, PADEP notified Cerro that they had received and reviewed the March 10, 2015, Final Report for Soil and Groundwater. The final report described the area(s) of the property characterized, contaminants identified, remediation performed, and that a site-specific standard was attained. PADEP approved this report for the substances identified in soil and groundwater, and affirmed the sites specified were remediated to an Act 2 standard. As such, the facility attained the nonresidential (NR) site-specific standard for the following compounds in soil: arsenic, chromium, and mercury via pathway elimination. The site-specific standard has been attained for the following compound in groundwater: TCE via pathway elimination.

Since the Cerro facilities Plant1, Plant 4, and North Yard Plant had to demonstrate attainment of the site-specific standards through pathway elimination, environmental covenants have been recorded that include the following activity and use limitations for these plant parcels:

Plant 1:

- The use of the Property is restricted to non-residential purposes as that term is defined in the Land Recycling and Environmental Remediation Standard Act (Act 2) and its regulations (this restriction also excludes schools, nursing homes or other residential-style facilities or recreational areas); and,
- Groundwater underlying the area restricted by the covenant may not be used as a potable water supply nor for agricultural purposes unless tested and treated accordingly, for its intended purposes, as approved in writing by the PADEP; and,
- A soil management plan that includes notification to the PADEP shall be developed if soil within the area restricted by the covenant will be disturbed, and the handling of all soil must comply with the Management of Fill Policy, Document Number 258-2182-773; and,
- The ground surface must remain sealed with an impermeable material such as concrete or asphalt.

Plant 4:

- The use of the Property is restricted to non-residential purposes as that term is defined in the Land Recycling and Environmental Remediation Standard Act (Act 2) and its regulations (this restriction excludes schools, nursing homes or other residential-style facilities or recreational areas); and,
- Groundwater may not be used as a potable water supply nor for agricultural purposes unless tested and treated accordingly for its intended purposes, as approved in writing by the Department of Environmental Protection; and,

- A soil management plan that includes notification to the Department of Environmental Protection shall be developed if soil will be disturbed within Plant 4, and the handling of all soil must comply with the Management of Fill Policy, Document Number 258-2182-773.

North Yard Plant:

- The use of the Property is restricted to non-residential purposes as that term is defined in the Land Recycling and Environmental Remediation Standard Act (Act 2) and its regulations (this restriction also excludes schools, nursing homes or other residential-style facilities or recreational areas); and,

- Groundwater underlying the area restricted by the covenant may not be used as a potable water supply nor for agricultural purposes unless tested and treated accordingly for its intended purposes, as approved in writing by the PADEP; and,

- A soil management plan that includes notification to the PADEP shall be developed if soil within the area restricted by the covenant will be disturbed, and the handling of all soil must comply with the Management of Fill Policy, Document Number 258-21 82-773.

- The ground surface must remain sealed with an impermeable material such as concrete or asphalt.

To eliminate the exposure pathway to soils where the direct contact numeric values are exceeded in localized areas, the asphalt/concrete and gravel cap will be maintained (as an engineering control) across these areas of the site and an annual inspection will be performed as part of the Post Remediation Care Plan (PRCP).

The facility utilizes the Bellefonte municipal water supply, which obtains water supplied from various sources such as wells, surface water, and reservoirs. There are no known production wells at the facility.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] 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"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - 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):

Plant 1:

After site characterization, 238.5 cubic yards of contaminated soil was excavated from the northern portion of Plant 1. Soil removed was contaminated with TCE, tetrachloroethene (PCE), cis-1,2-dichloroethene, and vinyl chloride (VC). Confirmatory sampling showed that all samples in the excavation area were below PADEP's MSC TCE value of 180 mg/kg for the 2-15 ft zone in a nonresidential scenario. The highest reading of TCE was 37.4 mg/kg in sample P1BS-3 taken at a depth of 4.5'. After confirmatory sampling was complete, multiple injections of sodium persulfate (chemical oxidant) were injected during 2010 and 2011 to help remediate impacted groundwater. Prior to the last injection of persulfate, the monitoring wells for Plant 1 were sampled for VOCs. All results were below the Statewide Health Standards, and most results were non-detect. During the February 2014 sampling event one well showed an exceedance of the Statewide Health Standards, well SB-17B-s had a value of 224 ug/L, above the PADEP MSC of 5 ug/L for TCE. This appears have been an anomaly, because the next quarter TCE was observed at 1.01 ug/l at the same location.

The final report described the area(s) of the property characterized, contaminants identified, remediation performed, and that a site-specific standard was attained. PADEP approved this report for the substances identified in soil and groundwater and remediated to an Act 2 standard within the site(s) specified. As such, the facility attained the nonresidential (NR) site-specific standard for the following compounds in groundwater: TCE via pathway elimination.

No metals, SVOCs, or PCB exceedances were reported in groundwater beneath Plant 1.

Plant 4:

Contamination of the Plant 4 property can be attributed to historic oil leakage from the hydraulic piston-pit of older melting furnaces (TAMAs), iron and copper slag and ash buried beneath a significant portion of Plant 4, and periodic use and spillage of industrial degreasers in historic manufacturing operations. The characterization of the Plant 4 area of the property consisted of soil borings, groundwater monitoring well installation/sampling, soil vapor sampling, and indoor air sampling.

The field work for the characterization of groundwater beneath Plant 4 was initiated on July 21, 2007. A total of thirty-two groundwater monitoring wells. and three recovery wells were installed in the Plant 4 vicinity in order to characterize and remediate groundwater. The monitoring wells were located in areas where the soil samples reportedly contained elevated COC concentrations, areas where former equipment was located, areas downgradient of the former equipment, and between the suspected source area and the likely receptor (Logan Branch). The overburden within Plant 4 ranged from five ft-bgs to 20 ft-bgs. Groundwater samples from the monitoring wells were analyzed for chlorinated solvents, aromatic hydrocarbons, hydraulic oil contaminated with PCBs, and metals or a variation of these constituents depending on the location and suspected contaminant.

Plant 4 had 3 recovery wells installed, pumped, and then closed to recover DNAPL from the site. DNAPL in the form of PCB Arochlor 1248 was present in groundwater in an isolated area beneath the Plant 4 building in the area that housed the furnaces, and in no other location in Plant 4.

Monitoring of Point-of-Compliance wells SB-65U-D, SB-66U-D, SB-67U-D, SB-78U-D1, SB-81U-D, SB-89U-D, and SB-89U-D1 on a quarterly basis, or as otherwise approved by PADEP or EPA, that demonstrates the effectiveness of the remedy.

North Yard Plant:

A total of thirty-one groundwater monitoring wells and four recovery wells were installed in the North Yard vicinity in order to characterize and remediate groundwater. The monitoring wells were located in areas where the soil samples reportedly contained elevated COC concentrations, areas where former equipment was located, areas downgradient of the former equipment, and between the suspected source area and the likely receptor (Logan Branch). The overburden within the North Yard ranged from 5 ft-bgs to 20 ft-bgs. Groundwater samples from the monitoring wells were analyzed for VOCs, PCBs, and metals or a variation of these constituents depending on the location and suspected contaminant.

Seventeen groundwater gauging and sampling events were completed to determine the extent of contamination in groundwater. The PADEP requires post-remedial monitoring as part of pursuing site closure using site-specific standards (SSS) via pathway elimination. A post-remedial quarterly gauging and sampling program was initiated on March 22, 2013 and was completed on October 7, 2014. Groundwater gauging and sampling were completed using the USEPA Region 3 Low-Flow Sampling Procedure. The results of the quarterly gauging and sampling were summarized in quarterly reports which were submitted to the PADEP.

A groundwater extraction and treatment system was installed to remove TCE from groundwater at the plant on July 12, 2011. The system was removed from service on March 1, 2013. TCE Iso-concentration Contour maps from October 2014 show TCE with a value of 300 ppb in the well at the center of the property located in overburden. The TCE contamination drops to less than 5 ppb within 50 ft. of the well, based on groundwater data.

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[2] "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

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

_____If yes - continue after identifying potentially affected surface water bodies.

__X__ 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):

None of the chemical constituents detected in groundwater at the downgradient point of compliance wells were above the PADEP used aquifer MSCs or EPA maximum contaminant levels (MCLs). These point of compliance wells lie between groundwater direction flow and the Logan Branch. If contamination were being discharged from this facility into the Logan Branch, they would be detected in these wells. Reference PADEP Final Reports for visual location of these compliance wells.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] 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[3] 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 judgement/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[3] 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[3] greater than 100 times their appropriate groundwater "levels," the 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):

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

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[4])?

____ 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, 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.

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

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

Rationale and Reference(s):

[4] 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.

[5] 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.

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):

After multiple rounds of sampling from the facility's perimeter wells, no exceedances of NR aquifer MSCs from any groundwater sample were detected. No further sampling and no further action is requested with respect to groundwater as no Contaminants of Potential Concern (COPC's) were detected at concentrations above used aquifer NR MSCs for any perimeter monitoring wells. No further action or investigations are planned for soil or groundwater.

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).

X 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 **Former Cerro Metal Plant** facility, EPA ID # **PAD086733540**, located at **2022 Axemann Road, Bellefonte, PA16823**. 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.

____NO - Unacceptable migration of contaminated groundwater is observed or expected.

____IN - More information is needed to make a determination.

Completed by (signature) _____ Date 9-29-17

(print) Grant Dufficy

(title) RCRA Project Manager

Supervisor (signature) _____ Date 9-29-17

(print) Paul Gotthold

(title) Assoc. Director Office of PA Remediation

(EPA Region or State) EPA Region III

Locations where References may be found:

USEPA Region III
Land & Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

PADEP North Central Regional Office
208 West Third Street
Williamsport PA 17701

Contact information:

Grant Dufficy
215-814-3455
dufficy.grant@epa.gov