### DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

# RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750) Migration of Contaminated Groundwater Under Control

Facility Name:	Invensys Metering System	
Facility Address:	805 Liberty Blvd, DuBois, PA 15801	
Facility EPA ID #:	PAD004335469	

- 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?

$\boxtimes$	If yes - ch	eck here and	continue	with #2	below.
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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 Former Rockwell Plant #1 is located at 805 Liberty Blvd. in DuBois, Clearfield County, PA. Plant #1 occupies approximate 18 acres, is currently owned by M&FC Holding, LLC. The Site was used as an industrial and manufacturing facility during the late 19<sup>th</sup> century and throughout the 20<sup>th</sup> century. The plant began manufacturing natural gas meters and gas regulation equipment in 1937. Activities conducted by Rockwell

### 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**

El 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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during its ownership of Plant No. 1 include gas meter assembly, testing, painting, and diaphragm fabrication; plastic molding; white metal die casting; wet scrubbing of air emissions from the diaphragm vulcanization process; machining; and degreasing. Materials used by Rockwell included trichloroethene (TCE), chromium-containing alodine solutions, plastics for molding, white metals, tin and lead solder, chromium-containing paint, flammable paint solvents (i.e., xylene, toluene), epoxy, chromium and nickel-plating solutions, and tryacol polysulfide rubber. Reportedly, benzene and methylene chloride were also used as solvents at the site, and plating processes included the use of cadmium. Rockwell sold Plant No. 1 to British Tire and Rubber Corporation Gas Measurement, Inc. (BTR) in 1989.

Plant No. 1 was acquired by M&FC Holding, LLC in December 2003, and the facility currently operates under the name Sensus Metering Systems North America (Sensus). Current site activities include the manufacture of natural gas meters and gas regulation equipment. Manufacturing processes include gas meter assembly, testing, painting, and diaphragm fabrication; plastic molding; white metal die casting; wet scrubbing of air emissions from diaphragm vulcanization process; machining; degreasing; and tin plating. The site is presently used for commercial/industrial purposes and is expected to continue to be used for commercial/ industrial purposes in the future. On June 4, 1996, an NIR was submitted to PADEP for the Site.

Environmental investigations and/or remedial activities performed at Plant No. 1 between 1984 and 2001 and were conducted by several environmental services companies, including Moody and Associates (Moody), Dames & Moore, Clayton, Roux, Environ, and URS/Dames & Moore (URS).

- Soil: Soil investigations and remediations were performed at the areas of concern. Analytical results of soil samples demonstrated that soils at the facility meet the EPA's non-residential standards and/or exposures to contaminated soil are under control.
- Sediment: Sediments in the NPDES outfall channel, Juniata Run and Beaver Run were investigated and remediations were also performed. Analytical results of sediment samples demonstrated that sediments are not impacted by the facility.
- **Surface Water:** Surface water investigations were performed in 1992. Analytical results of surface water demonstrated that surface water is not impacted by the facility.
- **Groundwater:** Groundwater investigation has been performed at the facility since 1984. VOCs including TCE and associated compounds were found in GW. GW found to be contaminated with volatile organic compounds (VOCs), primarily TCE and vinyl chloride. TCE was detected at concentrations as high as 30 mg/l. TCE in soils in the vicinity of TCE storage tanks is a source of TCE in groundwater.

Eleven areas of concern identified at the facility included: former TCE storage tank area; former scrap metal storage area; historical drum storage area near the southwest corner of the parking lot in the vicinity of MW-8; area near the western edge of the parking lot, in the vicinity of MW-25; former hazardous waste storage building; former petroleum underground storage tanks (USTs); former soil pile in the eastern portion of the site; soils beneath the former plating solution slop tanks in the plant; paint room; NPDES outfall channel and surrounding wetland; Juniata Run and Beaver Run surface water and sediment.

Three streams are present on or adjacent to the site: Beaver Run, located along the southern boundary of the site; Juniata Run, a tributary of Beaver Run, located along the western boundary of the site; and drainage channel from the National Pollutant Discharge Elimination System (NPDES) permitted outfall to Juniata Run.

GW extraction/treatment system was conducted in the former TCE storage tank area from 1984 to 2001. Two In Situ Chemical Oxidation (ISCO) injection events were performed at the facility in 2018 and 2020. The objectives of the ISCO injections are to reduce mass and concentrations of CVOCs in groundwater and reduce the potential for vapor intrusion into indoor air.

- 2. Is groundwater known or reasonably suspected to be "contaminated" 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?
  - 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):

VOCs including TCE and associated compounds found in GW at concentrations above the respective MCLs. (In Situ Chemical Oxidation (ISCO) Report dated April 27, 2021)

#### Footnotes:

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"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).

- 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)?
  - 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"<sub>2</sub>).
  - If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"<sub>2</sub>) 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):

GW remediations have been performed at the facility. GW extraction/treatment system was conducted in the former TCE storage tank area from 1984 to 2001. Two In Situ Chemical Oxidation (ISCO) injection events were performed at the facility in 2018 and 2020.

The vertical and horizontal extent of groundwater contamination have been delineated and the migration of contaminated groundwater stabilized.

The horizontal extent of groundwater contamination has been delineated. Offsite wells to the east of the facility (MW-37, MW-38, MW-40) are non-detect for chlorinated solvents from the facility. The TCE plume at the Sensus facility is biodegrading, as evidenced by the lack of TCE in furthest downgradient wells DM-3 and MW-34, but which show TCE daughter products cis-1,2-DCE and vinyl chloride. A former groundwater well (MW-33) used to exist downgradient of these two wells which was non-detect for vinyl chloride from 2003 through 2011 prior to abandonment. In addition, further migration is limited anyway by discharge to surface water (Beaver Run, south of the facility). The current groundwater discharge to Beaver Run would be considered acceptable, since the concentration at discharge would be less than 10 times the appropriate level.

The vertical extent of CVOCs from the facility has also been delineated. The highest CVOC detections are generally in the shallow Silt & Clay aquifer unit. Concentrations in the lower Gravel & Sand unit are much lower or non-detect. (April 27, 2021 ISCO report)

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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.

# 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.

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

Rationale and Reference(s):

The current groundwater discharges to Beaver Run, south of the facility. (April 27, 2021 ISCO report).

- 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<sub>3</sub> 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 concentration₃ 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 concentrations₃ 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):

The current groundwater discharge to Beaver Run would be considered insignificant/acceptable, since the concentration at discharge would be less than 10 times the appropriate level. (April 27, 2021 ISCO report)

<sup>3</sup> 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<sub>4</sub>)?
  - 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<sub>5</sub>, 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):

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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>s</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."



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

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

Rationale and Reference(s):

A long-term monitoring plan would be developed, ultimately to be incorporated into the final remedy for the facility.

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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 Invensys Metering System facility, EPA ID # PAD004335469, located at 805 Liberty Blvd, DuBois, PA 15801. 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 reevaluated 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) And A	Date 1/21/2021
	(title) Project Manager	
Supervisor	ALIZABETH OLHASSO Digitally signed by ALIZABETH OLHASSO (signature)	Date
	(print) Alizabeth Olhasso	10
	(title) Acting Chief, CA Branch #2	
	EPA Region 3	

Locations where References may be found:

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US EPA Region III Land, Chemicals and Redevelopment Division 1650 Arch Street Philadelphia, PA 19103

Contact telephone and e-mail numbers

(name)	Tran Tran
(phone #)	215-814-2079
(e-mail)	tran.tran@epa.gov