

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Former Marathon Carey-McFall Company (currently Logue Industries, Inc.)
Facility Address: Montour Street, Montoursville, PA 17754
Facility EPA ID #: PAD 980 550 537

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?

 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 "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 "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	_____	See below.
Air (indoors) ²	_____	X	_____	See below.
Surface Soil (e.g., <2 ft)	_____	X	_____	See below.
Surface Water	_____	X	_____	See below.
Sediment	_____	X	_____	See below.
Subsurface Soil (e.g., >2 ft)	_____	X	_____	See below.
Air (outdoors)	_____	X	_____	See below.

- X _____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support 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):

Groundwater

Seven groundwater monitoring wells were installed in November 2011 to a depth of approximately 25 feet below ground surface (bgs). On November 22, 2011, a groundwater sample was collected from each of the monitoring wells and analyzed for Target Compound List (TCL) Volatile Organic Compound (VOC) and Target Analyte List (TAL) metals. Groundwater monitoring well VOC and metals results were compared to their respective Maximum Contaminant Levels (MCLs). No concentrations of VOCs or metals were detected above MCLs.

Air (Indoors)

Conclusions reached from the Limited Phase II Investigation Johnson & Ettinger Modeling effort suggested following up with vapor intrusion sampling. Therefore, on August 18, 2010, eight soil gas sampling points were installed. The location for each sampling point was selected based on the locations of waste storage and treatment areas formerly operated by Marathon Carey-McFall Co. identified in the EI

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.

report, as well as former underground potential process pipelines and/or old storm sewer lines identified during the limited phase II investigation. Two rounds of sampling were conducted in August and November 2010. The EPA regional screening levels (RSLs) for industrial and residential air were used to evaluate the soil gas data. The RSLs were divided by a transfer factor of 0.1, as per the Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils [Subsurface Vapor Intrusion Guidance], dated November 2002.

The concentrations of VOCs detected during the August 2010 soil gas survey were less than the industrial RSLs except for naphthalene, 1,2-dibromoethane, trichloroethene (TCE), and tetrachloroethene (PCE). Due to the proximity of several sample points to the residential area to the north, the analytical results for these soil gas samples also were evaluated against the RSLs for residential air. The residential RSLs were exceeded for 1,2-dichloroethane, benzene, carbon tetrachloride, chloroform, naphthalene, TCE, and PCE.

Twenty VOCs were detected during the November sampling event. Concentrations were generally at low levels, where detected, except for TCE, which was detected at a concentration of 120 µg/m³ in one sample. This concentration is above the RSLs for both industrial and residential air for TCE. There were no other exceedances of the RSLs for industrial or residential air for selected samples during the November sampling event.

In November, 2011, a total of five temporary soil gas sampling points were also installed at the site. The sampling points were installed to a depth of approximately seven feet bgs. On November 22, 2011, one air sample was collected from each soil gas sampling point for Toxic Organics (TO)-15 analysis for VOCs. Soil gas results were compared to their respective residential indoor air RSLs. Per the OSWER Subsurface Vapor Intrusion Guidance, an attenuation factor of 0.1 for shallow soils was applied to the RSLs. The following VOCs were detected at concentrations above applicable RSLs; benzene, chloroform, TCE, PCE, and 1,4-dichlorobenzene. However, the RSLs are based on a 10⁻⁶ risk and all the concentrations were below the 10⁻⁴ risk.

Additionally, groundwater monitoring well VOC results were compared to their respective Generic Screening Levels from the OSWER Subsurface Vapor Intrusion Guidance. No concentrations of VOCs were detected above their respective screening levels.

Based upon the data obtained from the three rounds of vapor sampling, EPA considers the levels of contaminants to be within the appropriately protective risk-based range of a 10⁻⁶ to 10⁻⁴ risk for this particular site given the current and foreseeable use as industrial and consider this to still be protective even if the land use were to change to residential.

Surface Soil (<2 ft.) and Subsurface Soil (>2 ft.)

In 2009, soil samples were acquired from test pits which were advanced in selected areas of the former Marathon-Carey McFall operations where it was deemed possible that constituents of concern (COCs) could have been released into the shallow subsurface. The test pits were dug to depths ranging from four to seven feet bgs and were approximately one to two feet wide and four feet long. If evidence of potential contamination was noted at four feet bgs and/or native soils had not been penetrated (only fill encountered), the test pits were advanced deeper to a maximum depth of seven feet bgs. Two to three test pits were completed at several areas of interest to provide sufficient coverage of each individual area to determine the presence of COCs in the shallow subsurface. A total of 34 soil samples were acquired from the test pits during the field investigation and submitted for chemical analyses of RCRA Metals, Hexavalent Chromium, TCL VOCs, and polychlorinated biphenyls (PCBs).

The results were screened against the Medium-Specific Concentration (MSC) Statewide Health Standards (SHS) per the Pennsylvania Land Recycling and Environmental Remediation Standards Act, Chapter 250, Administration of Land Recycling Program ('Act 2', June, 1997) (25 Pa. Code §§250.1 - 250.708). Even though current site use is industrial, the Residential (R) standards for direct contact (DC) with soils were applied in the screening. There were no exceedances of any R-DC MSCs for VOCs or PCBs. Cadmium was detected in one sample slightly exceeding the R-DC MSC but below the Non-Residential (NR) DC MSC. Arsenic was detected at 6 locations slightly exceeding the R-DC MSC but below the Non-Residential (NR) DC MSC. Based on historic uses at the facility, EPA has no evidence that Arsenic was used during operations. Considering that and the sitewide dispersion of Arsenic, EPA believes this is to be attributed to anthropogenic or natural conditions and not a release subject to RCRA Corrective Action.

Sediment

The discharge piping from the former chromium treatment system at the Site was suspected to connect to the Montoursville stormwater system which drains to a perennial stream, the Loyalsock Creek, located approximately 0.6 miles west of the Site. To determine if COCs were released from the Site, the conditions of the nearby stormwater system were assessed. The lid of the South Alley/Center Alley manhole was removed on April 27, 2009. Based on ground surface observations, there was no current evidence of piping from the Site discharging to the sewer main. Therefore, EPA determined sediment sampling of the South Alley stormwater main was not warranted.

The Loyalsock Creek discharges to the West Branch of the Susquehanna River. Approximately 0.5 miles south of the Site exists a 10-acre palustrine, open-water wetland associated with the Susquehanna River. The Site is located within the Susquehanna River flood plain. The distance to these surface water bodies relative to the minimal COC concentrations in site soils and groundwater results indicate that the sediment is not reasonably suspected to be contaminated above appropriately protective risk-based levels.

Surface Water

Surface water from the facility flows to storm drains that discharge to the Montoursville storm water system, and then to the Loyalsock Creek, a perennial stream located 0.74 miles west of the site. The Loyalsock Creek flows to the West Branch of the Susquehanna River, which flows to the main branch of the Susquehanna River. Given the sediment portion of the investigation discussed above and the previously discussed groundwater and soil data, EPA does not believe surface water is, or has been, reasonably suspected to be contaminated above appropriately protective risk-based levels.

Air (Outdoors)

The facility is not a major source of air emissions. The former processes that resulted in air emissions sources are no longer in operation. There have been no significant releases in the past 20 years. EPA found no evidence indicating that impacted outdoor air existed during the EI site inspection.

References:

Environmental Indicator (EI) Assessment, Foster-Wheeler Environmental Corporation, 2003

Logue Industries, Inc. Site Limited Phase II Investigation, URS, September 2009

Final Limited Vapor Intrusion Assessment Report, Logue Industries Site, URS, November 2010

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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 Food³

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.)

Final Abbreviated Trip Report for Logue Industries Inc. Site, Weston, February 2012

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"** (i.e., potentially⁴ "unacceptable" levels) 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):

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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 a "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 a "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):

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.

