

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: Dalloz Safety Incorporated
Facility Address: 205 Washington Street, Reading, PA 19603
Facility EPA ID #: PAD002334027

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?
- If yes - check here and continue with #2 below.
- If no - re-evaluate existing data, or
- if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "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).

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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?

- 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:

The Dalloz property was located in the City of Reading, Berks County, Pennsylvania. The facility was comprised of an approximately 2-acre improved lot located in a commercial/light industrial area of the City of Reading. As many as 13 buildings comprised the majority of the facility, with the remainder of the site consisting primarily of paved parking areas and an abandoned railroad spur in the northern portion of the property. Past operations at the facility included the development, manufacturing, testing, storage, and distribution of occupational safety-related products. Currently the site is home to the Goggle Works Center for the Arts, which has renovated the facility and hosts a variety of community art and culture related events.

Previous facility activities resulted in soil and groundwater contamination of the property. The contamination originated from a former tank used to store petroleum products and a trench area where waste solvents were reportedly disposed.

On July 20, 2004, the facility submitted to the Pennsylvania Department of Environmental Protection (PADEP) a Combined Remedial Investigation Report and Final Report (CRIR&FR) for the property. On November 18, 2004, the facility received relief from liability from PADEP under Pennsylvania’s Act 2 program.

Former Tank Area: A leak in a fuel oil AST was discovered in the early 1980s. The AST was subsequently removed. A replacement 20,000-gallon AST, installed in the same area in 1989, was used for heating oil. Nine soil borings were advanced in the vicinity of the former AST, including two soil borings in the vicinity of a nearby vapor condensation drain. All of the analyzed constituents in the soil samples in this area were found at concentrations below their respective PADEP statewide health medium-specific concentrations (MSCs) for both residential and non-residential exposure conditions.

One existing groundwater monitoring well (MW-1) and four additional groundwater monitoring wells (MW-2, MW-3, MW-9 and POC-1) were sampled to evaluate potential downgradient migration of constituents from the former AST. Concentrations of fluorine, phenanthrene, and pyrene, at concentrations in excess of the statewide health MSCs for used groundwater, were detected in MW-9. The results from downgradient groundwater wells indicated that hydrocarbon impacts were limited to the immediate vicinity of the former AST.

Former Solvent Discharge Area: The other area investigated was referred to as the historical solvent discharge area. During the environmental investigation, an oral report was received that waste disposal may have been conducted by a prior owner of the property in a trench located near the property’s northern boundary, in the vicinity of the hazardous product storage area that existed at that time. Six soil borings were advanced in this area to evaluate the nature and extent of the potential contamination. The constituents detected in the soil samples included chlorinated solvents, primarily PCE, TCE, and cis 1,2-DCE at concentrations in excess of the Statewide Health MSCs. Based on this discovery, approximately 67 tons of impacted soils were excavated and transported off-site for treatment and disposal. Confirmation sampling found concentrations of these solvents were below their respective Statewide Health MSCs for direct contact exposures under residential exposure conditions. However, some of the solvents were detected at concentrations that slightly exceeded their respective soil-to-groundwater MSCs.

Analytical results from groundwater monitoring wells MW-1, MW-2, MW-3, MW-6 and POC-1 were used to evaluate the potential downgradient migration of constituents from the historical solvent discharge area. Constituents detected in excess of the Statewide Health MSCs for groundwater in used aquifers included 1,1-DCA, 1,1-DCE, cis 1,2-DCE, PCE, TCE, and vinyl chloride.

References: Combined Remedial Investigation Report and Final Report, submitted July 20, 2004

 Letter to Dalloz Safety Inc. from PADEP Environmental Cleanup Program: Approval of Combined Remedial Investigation Report and Final Report, signed by Anthony Rathfon, dated November 18, 2004

Footnotes:

1“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

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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”² 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”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):

The soil source at the historical solvent discharge area was removed in early 2002. Analytical results from groundwater monitoring wells MW-1, MW-2, MW-3, MW-6 and POC-1 were used to evaluate the potential downgradient migration of constituents from the historical solvent discharge area. Constituents detected in excess of the Statewide Health MSCs for groundwater in used aquifers included 1,1-DCA, 1,1-DCE, cis 1,2-DCE, PCE, TCE, and vinyl chloride. Various rounds of sampling showed that the concentration of the constituents of concern were declining over time, and by late 2003 were intermittent at several wells. TCE had the highest analytical results. In the last round of sampling, TCE concentrations were MW-1 (5.6ug/l), MW-2 (17ug/l), MW-3 (6.3ug/l), MW-6 (ND) and POC-1 (16ug/l).

No active water supply wells are located within the area of elevated site-related constituents in groundwater, and potable water within the area is supplied entirely from the Reading Water authority. Local regulations prohibit the use of groundwater as a drinking water source. The facility received relief from liability from PADEP under Pennsylvania’s Act 2 program for non-residential use; no further monitoring or remediation is required.

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 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.
 - 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):

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5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration³ 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 concentration³ 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):

³ 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 implemented⁴)?

- 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-assessment⁵, 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):

⁴Note, 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.

⁵The 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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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 **Dalloz Safety Incorporated** facility, EPA ID # **PAD002334027**, located at **205 Washington Street, Reading, PA 19603**. 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	<u>(signature)</u>	Date
	<u>(print) Linda Matyskiela</u>	<u>04/27/2011</u>
	<u>(title) Project Manager</u>	

Supervisor	<u>(signature)</u>	Date
	<u>(print) Paul Gotthold, Associate Director</u>	<u>04/27/2011</u>
	<u>(title) Office of PA Remediation</u>	
	<u>(EPA Region or State) EPA Region III</u>	

Locations where References may be found:

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

PADEP
 Southcentral Regional Office
 909 Elmerton Ave
 Harrisburg, PA 17110

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