

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: Delta Rubber Company
Facility Address: 39 Wauregan Road, P.O. Box 300, Danielson, CT 06239-0300
Facility EPA ID #: ~~CTD04623860~~ CTD046238630

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?

 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): Zinc concentrations in filtered groundwater samples exceed CT RSR default Surface Water Protection Criteria in the vicinity of AOC 8 (discharge outfall 003). The maximum concentration of zinc detected in groundwater was 1.1 mg/l in October 1998. Based on quarterly groundwater monitoring, concentrations in this well have since decreased to 0.37 mg/l. The most recent round of groundwater monitoring (April 1999) in this area showed the following concentrations (LEA-23: 0.011 mg/l, LEA-22: 0.30 mg/l, LEA-20: 0.56 mg/l, LEA-19: 0.10 mg/l). These zinc concentrations are below the alternate Surface Water Protection Criteria calculated based on site-specific conditions. The Surface Water Protection Criteria for zinc is developed based on levels designed to protect ecological receptors (i.e., Connecticut Aquatic Life Criteria) in surface water. While further monitoring (quarterly monitoring for a minimum of one year) will be conducted to ensure that zinc concentrations are declining, it does not appear that these concentrations will pose a threat to human health and the environment. Several soil samples in this area were analyzed for zinc. All levels were below the CT RSR GA/GAA Pollutant Mobility Criteria. Therefore, there does not appear to be an ongoing source of zinc in soils in this area. TCE concentrations in three temporary wells in the vicinity of AOC 16 were detected above CT RSR GA/GAA Groundwater Protection Criteria in 1996 (AOC 18-SB 1: 77 μ g/l, AOC 18-SB 2: 41 μ g/l, AOC 18-SB 3: 430 μ g/l). However, multiple rounds of groundwater samples have been collected from 1996 through 1999 in downgradient wells, including wells screened immediately above the bedrock surface. These wells have not detected any VOCs. Samples have been analyzed from several soil borings in this area. Only one sample in soil boring LEA-17 detected TCE at an elevated level (above the CT RSR GA/GAA Pollutant Mobility Criteria, but below Residential Direct Exposure Criteria). Multiple rounds of groundwater monitoring in a well at LEA-17 did not detect VOCs. Based on this information, it does not appear that AOC 16 is an ongoing source of groundwater contamination or that groundwater contamination initially detected in this area has migrated at unsafe levels to downgradient areas.

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): As explained on the previous page, recent groundwater monitoring data from areas downgradient of AOC 16 have shown that elevated levels of TCE detected in three monitoring wells in 1996 have not migrated. In addition, extensive soil sampling in this area has shown that there does not appear to be an ongoing source of groundwater contamination. Therefore, migration of contaminated groundwater in this area has stabilized.

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): As described on page 2, groundwater containing zinc in the vicinity of AOC 8 which discharges to the Quinebaug River is not considered "contaminated" at the point of discharge, as levels are below CT RSR alternate Surface Water Protection Criteria calculated based on site-specific conditions. Quarterly groundwater monitoring will be conducted for a minimum of one year in the vicinity of this area to confirm that zinc levels in groundwater are not increasing.

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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-assessment,⁵ 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.

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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): Quarterly groundwater monitoring for zinc will be continued, in the vicinity of AOC 8, for at least one year. It is also recommended that one year of quarterly monitoring be conducted at LEA-17, LEA-18S, and LEA-18D to confirm that TCE levels are not migrating.

CD Based on information provided by Delta Rubber on November 12, 1999, I have determined that monitoring at wells LEA-17, LEA-18S and LEA-18D is not necessary. S.C. 12/6/99
RWH 12/6/99

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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 **Delta Rubber Company facility**, EPA ID # **CTD04623860**, located at **39 Wauregan Rd., P.O. Box 300, Danielson, CT 06239-0300**. 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) Stephanie Carr Date Sept 28, 1999
(print) Stephanie Carr
(title) RCRA Facility Manager

Supervisor (signature) Matthew R. Hoagland Date 9/28/99
(print) Matthew R. Hoagland
(title) Section Chief
(EPA Region or State) Region I

Locations where References may be found:

- Connecticut Remediation Standard Regulations;
 - Report on Environmental Site Assessment - The Delta Rubber Company, September 1999, prepared by ALTA Environmental Corporation for Delta Rubber Company (available in EPA files); and
 - Final Draft RCRA Facility Assessment, Delta Rubber, May 11, 1992, prepared for U.S. EPA by CDM Federal Programs Corporation (available in EPA files).
 - Letter dated November 12, 1999 from Kelly Meloy, ALTA Environmental Corp. to Stephanie Carr, EPA re: response to EPA letter dated October 5, 1999.
- Contact telephone and e-mail numbers

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