DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA725)
Current Human Exposures Under Control

Facility Name:	Rhodia Inc.
Facility Address:	8615 Manchester St., Houston, TX 77012
Facility EPA ID #:	TXD008099079

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 Control" 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 RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			See rationale below (unspecified contaminants)
Air (indoors)[2]		X		See rational below
Surface Soil (e.g., <2 ft)		X		See rational below
Surface Water		X		See rational below
Sediment		X		See rational below
Subsurf. Soil (e.g., >2 ft)	X			See rational below
Air (outdoors)		X		Air emissions regulated under permit

___ If no (for all media) - skip to #6, and enter "YE" status code after providing or citing appropriate "levels", and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X
___ 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):

Facility Description

The Rhodia Incorporated facility is a large quantity generator (LQG) and commercial treatment, storage, and disposal facility (TSDF) situated on 46-acres of Houston Ship Channel frontage property. Use of the property as an industrial site has been continuous since 1917. Current operations at Rhodia include the regeneration of spent sulfuric acid, manufacture of sulfur dioxide, use of waste-derived fuel, and wastewater treatment. On-site operations also include treatment of wastes received from off-site generators in a boiler unit. The most recent permit renewal notice in TCEQ files was dated December 14, 2000 and lists 29 active waste streams and 20 active waste management units. The 20 active waste management units include both hazardous and non-hazardous units. RCRA

[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) suggests 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.

units include permitted containers storage areas (9), tank storage units (6), and one boiler. It should be noted for clarity that the boiler was classified as an incinerator prior to the passage of the BIF regulations. Generator units include less than 90 day storage areas, and satellite accumulation areas. Non-RCRA units include the wastewater treatment system (three impoundments), three tanks and two other non-hazardous waste impoundments. The facility indicates in the Part B Permit Application Form that hazardous waste management units (HWMUs) are designed with secondary containment systems, which preclude the migration of hazardous constituents into the groundwater from spills, leaks or discharges.

Facility security measures include both a fenced perimeter and 24-hour security guards. Other noteworthy land use features near the site include a public elementary school within one mile of the fenced perimeter as well as multiple commercial, industrial, and residential properties in the general vicinity of the facility.

The site has undergone several ownership changes and name changes. The original site permit was granted by TNRCC in 1987 to an entity by the name of Stauffer Chemical Company, which was later sold to Rhone-Poulenc Basic Chemical Co. The name was changed to Rhodia, Inc. (the current owner/operator of the facility) as documented in a permit modification dated November 11, 1998.

A review of historical activities revealed one remedial investigation involving a former surface impoundment, which overlay a former landfill and an associated mud drying pit. In 1986, TNRCC (then Texas Water Commission) approved closure of a RCRA surface impoundment, under the interim status standards (40 CFR Part 265). At that time (June 6, 1986), TNRCC expressed concern that sludge remaining in the impoundment contained at least some hazardous constituents and informed the facility that EPA had recently clarified their position regarding closure of sites, which may have contamination left in place and were using the less stringent interim status groundwater requirements for closure. TNRCC indicated that additional activities at a later date, including compliance with 40 CFR Part 264 groundwater monitoring requirements, may be required. This is in fact what occurred; the area was reclassified as a SWMU and additional groundwater monitoring was required.

After quarterly groundwater sampling was completed between 1990 and 1991, Rhone Poulenc submitted a Risk Assessment Report on June 27, 1991, as well as additional information on January 4, 1996. On February 21, 1996, TNRCC approved the Risk Assessment Report and stated Rhodia could elect to close the unit under Texas Risk Reduction Standard (RRS) 2. A draft Corrective Measures Implementation (CMI) Work Plan was submitted in January 1997, with a sample deed recordation. The CMI Work Plan was accepted by TNRCC on December 11, 1997. The facility agreed to submit a deed recordation reflecting the use of the site as a hazardous waste disposal site and to assure adequate post-closure management. The TNRCC approved the Closure Certification as equivalent to a CMI Report and approved a No Further Action and Corrective Action Termination.

There are two major aquifers underlying the facility, the Chicot and Evangeline aquifers. The Chicot aquifer ranges in thickness from 400 to 800 feet and the Chicot aquifer is approximately 800 to 1,600 feet thick. In addition, there is a shallow water bearing zone which is 10 to 30 feet deep. It is unclear from the file material which of these water bearing zones were evaluated as part of the 1990-1991 quarterly groundwater monitoring. Municipal drinking water is supplied by wells screened in both the Chicot and deeper Evangeline aquifers; however, the majority of drinking water in the greater Houston area is supplied from surface water from Lake Houston, which according to the files is a substantial distance from the site.

According to the RCRAInfo Comprehensive Corrective Action Report run on December 28, 2005, the facility achieved CA400 on February 21, 1996 and CA550 on December 11, 1997. The facility also achieved a CA725YE on December 11, 1997. However, on that same date the facility was assigned a CA750 No. None of the associated records to document these events were found in the available file materials. However, no additional information was found in the available file materials to change any of these findings.

Rationale

Groundwater: Concentrations above Texas RRS 1 were detected in groundwater in the area of the Acid Pond. Specific contaminants were not identified in the available files. It cannot be determined from available file materials whether the site was subject to post closure care monitoring.

Air (indoors): Closure achieved to meet Texas RRS 2, indicating vapor intrusion not likely a concern. No additional contamination reported at this facility.

Surface soils: Closure achieved and certified at this site. No additional contamination reported at this facility. Operations are equipped with secondary containment to prevent releases to soils.

Surface Water and Sediment: No evidence of contamination of surface water or sediments in available files. Facility operates under TPDES Permit No. 00542.

Subsurface soils: Elevated levels of some constituents remain in place after remedial action. A 0.5579 acre portion of the site is deed recorded as a landfill. Constituents of concern were not identified in available file materials.

Air: The facility's air emissions are regulated under HW - 50095. The facility also has air operating permits and air new source permits.

References

1. State of Texas, Harris County – "Industrial Solid Waste Disposal Site Deed Recordation," recorded October 21, 1985
2. Letter to Ken Kirksey, Stauffer Chemical; from TCEQ; Regarding "Revised RCRA Impoundment Closure"; dated June 6, 1986
3. Letter to K.L. Kirksey, Stauffer Chemical; from Samuel Pole, TCEQ; Regarding Closure Certification; dated October 21, 1986.
4. Letter to K.L. Kirksey, Stauffer Chemical; from Samuel Pole, TCEQ; Compliance Plan CP-50095-001; dated May 11, 1990.
5. Letter to Annette Bisby, Rhone-Poulenc Basic Chemical; from TNRCC; Regarding Risk Assessment Approval; dated February 21, 1996.
6. Letter to John Clegg, TNRCC; from W.I. Dickerson, Rhone Poulenc; Regarding Compliance Plan Renewal; dated February 5, 1997.
7. TNRCC Interoffice Memorandum; From Jill Burris; TTNRCC; Regarding "Summary of Regional File Information"; dated September 29, 1998.
8. Transmittal Letter to Randolf Gress; Rhodia, Inc.; from Billy Spiller; TNRCC; Regarding Transmittal of Class I permit Modification; dated November 25, 1998.
9. Transmittal Letter to Billy Spiller, TNRCC; from W.F. Dickerson, Rhodia, Inc; Regarding Permit No. HW 50095; dated December 3, 1998.
10. TCEQ Investigation Report; Investigation # 281319; dated June 28-29, 2004.
11. Letter to James Spiller, TCEQ; from W. F. Dickerson, Rhodia, Inc.; Regarding Class I Permit Modification Request; dated April 19, 2005.
12. RCRAInfo Comprehensive Corrective Action Report; Run on December 28, 2005.
13. Facility Maps

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	Food[3]
Groundwater	N	N	N	N	N	N	N
~~Air (indoors)~~							
~~Soil (surface, e.g., <2 ft)~~							
~~Surface Water~~							
~~Sediment~~							
Soil (subsurface e.g., >2 ft)	N	N	N	N	N	N	N
~~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.

X — 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):

Rationale
Given that the groundwater and subsurface soils are in the area of a former landfill, which has been deed recorded, digging or exposure to subsurface soils or groundwater is not anticipated. Further, the closure of the Acid Pond met RRS 2 criteria, and records indicate a deed certification was also recorded for the Acid Pond. The facility is equipped with security fencing to prevent access by trespassers.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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

[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.

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 "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 "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):

6. Check the appropriate RCRAInfo status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Rhodia Inc. facility, EPA ID # TXD008099079, located at 8615 Manchester, Houston, TX 77015, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by (signature) _____ Date _____
(print) _____
(title) _____

Researched by (signature) June K Dreith Date April 19, 2006
(print) June Dreith
(title) TechLaw Inc./USEPA Contractor

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:
Texas Commission of Environmental Quality
File Room, Building E
12118 N IH 35
Austin, TX 78753

Filed under SWR # 31019

Contact telephone and e-mail numbers

(name) _____
(phone #) _____
(e-mail) _____

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Recommended Further Actions:

File records indicate that closure of the acid pond and mud flats was certified and a deed recordation filed, although the specific documents were not found in available file materials. A TNRCC approval of a Risk Assessment was found in the files, although the risk assessment was not available for review. According to the RCRAInfo Comprehensive Corrective Action Report, the site achieved CA440 (February 21, 1996), CA550 (December 11, 1997) and CA725YE (December 11, 1997). Although there was no documentation of these events in the file materials, there was no new information in the available file materials to dispute these determinations. Therefore, TechLaw designated this EI determination as a Yes also. However, the following recommendations are suggested.

1. EPA may wish to verify deed certifications required for landfill and closure of the Acid Pond under Texas RRP were recorded properly.

2. Further research to verify groundwater contaminants and concentrations may be warranted.