DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 6/12/2003
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Olin Chemical Company
Facility Address: 960 I-10 West, Westlake, Calcasieu Parish, Louisiana
Facility EPA ID #: LAD 008 080 681

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 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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	___	_X_	___	
Air (indoors)[2]	___	_X_	___	
Surface Soil (e.g., <2 ft	___	_X_	___	
Surface Water	___	_X_	___	
Sediment	___	_X_	___	
Subsurf. Soil (e.g., >2 ft)	___	_X_	___	
Air (outdoors)	___	_X_	___	

___X__ 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.

_____ 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): See Below

A portion of the Olin site was sold to Lyondell in December of 1996. While Olin is responsible for the pre-1996 contamination on the Lyondell site the information provided in this document pertains to the current Olin facility. The facility is closed and is not currently operating. The units are described below:

Interim Status Landfill (ISL) RCRA –LAD008080681 The unit is currently in post-closure monitoring from April 1986 to April 2016. Monitor Wells are sampled quarterly. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated March 03, LDEQ 2002 CME

Settlement Agreement Landfill (SAL) Ground Water Corrective Action –Closed, Monitor wells are sampled quarterly. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated March 03, LDEQ 2002 CME

Remediated Landfill (RL) Ground Water Corrective Action-Closed. Monitor wells are sampled semi-annually. Monitoring period ends July 2021. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated November 26 2002, LDEQ 2002 CME

Waste Water Treatment System (WWTS) Solid Waste, P-0230, Closed, completed 3 years of post-closure monitoring and have been released by LDEQ/SWD. The five monitor wells have not exceeded permit levels. The five wells are included in the Remediated Landfill program. Reference: Ground Water Report dated November 26 2002, LDEQ 2002 CME.

Lime Ditch Solid Waste (P-0228) closed 1996, sampled semi-annually. The monitor wells have not exceeded permit levels. Wells not sampled since July 1999. Reference: Final Ground Water Report dated April 2002, LDEQ 2002 CME.

West Pond Solid Waste (OC-0071) closed. Post Closure period ended in January 1994. Monitor wells are

sampled on a semi-annual basis. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated April 2002, LDEQ 2002 CME.

Ketazene Pond Solid Waste (OC-0073) closed. Post Closure period ended in November 1993. Monitor wells are sampled on a semi-annual basis. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated April 2002, LDEQ 2002 CME.

North and South Ponds Solid Waste (P-0029) closed. Post Closure ended October 1995. Monitor wells are not currently sampled. The monitor wells have not exceeded permit levels. Reference: Ground Water Report dated March 2000, LDEQ 2002 CME.

Other areas at the facility include:1) Low pH Area, 2) MCB Assessment Area, and 3) Aniline Area. All of the units at the Olin facility are currently in detection monitoring. At this point in time there are no known areas of contamination over RECAP levels.

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 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.

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	___	___	___	___			___
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.)

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 RCRIS 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):

_YE__ 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 Olin Chemical Company facility, EPA ID #_LAD0080800681, located at 960 –I-10 West, WestLake ,Calcasieu Parish, LA 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 Janelle Williams Date 6-27-03
Janelle Williams
Geologist II

Supervisor _____ Date _____
Ellen Broussard
Geologist III

Supervisor Lewis Donlon Date 7/21/03
Lewis A. Donlon
Geologist Supervisor

EPA Larry Bunty 6PD-M 4/7/04

Locations where References may be found:

LDEQ, South West Regional office at 1301 Gadwall Street, Lake Charles, LA 70615

LDEQ, Baton Rouge Office at 7290 Bluebonnet, Baton Rouge, LA 708010.
Future office at 602 N. Fifth Street , Baton Rouge, 70802

Contact telephone and e-mail numbers

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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.

ATTACHMENTS
AVAILABLE UPON REQUEST