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: ConocoPhillips Lake Charles Refinery
Facility Address: 2200 Old Spanish Trail, Westlake, LA 70669
Facility EPA ID #: LAD 990683716

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).

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 discussion below & Table 1
Air (indoors)[2]		X		Only few & low volatiles; Few buildings
Surface Soil (e.g., <2 ft)	X			See discussion below & Table 1
Surface Water			X	Insufficient information at this time
Sediment			X	Insufficient information at this time
Subsurface Soil (e.g., >2 ft)	X			See discussion below & Table 1
Air (outdoors)		X		Only few & low volatiles

_____ 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): ConocoPhillips is currently in the process of conducting an RFI and LDEQ Risk Evaluation/Corrective Action Program (RECAP) at the Lake Charles Refinery facility in Westlake, Louisiana. Based on preliminary information (Table 1), SWMUs may be reasonably suspected to be contaminated. In Table 1, analytes detected at SWMUs that currently exceed RECAP screening Standards (SSs) are listed. Management Options (MO-1, MO-2) for the SWMUs regarding the constituents have not been completed. Upon completion of the RECAP, ConocoPhillips will submit a RECAP report to the LDEQ. Indoor air contaminants are not reasonably suspected due to few and low detections of volatiles (few compounds detected, infrequent detection, and low concentrations detected). In addition, there are few enclosed buildings and/or structures near areas of volatile contamination. Outdoor air contaminants are not reasonably suspected due to few and low volatile detections. Also, concrete and/or gravel and fill are common ground cover at sites with volatile contamination. For surface water/sediment, there is insufficient information to define the presence and/or extent of potential impacts at this time. The surface waters in the area are Fabaucher Ditch and Bayou Verdine. Fabaucher ditch is a manmade discharge ditch. Bayou Verdine sediments are being managed under CERCLA, as per a memorandum of understanding between EPA and ConocoPhillips and Sasol. Neither surface water body is accessible to the public within the facility.

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	No	Yes	No	Yes			No
~~Air (indoors)~~							
Soil (surface, e.g., <2 ft)	No	Yes	No	Yes	No	No	No
Surface Water							
Sediment							
Soil (subsurface, e.g., >2 ft)				Yes			No
~~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).

__X__ 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): Worker and construction workers could reasonably be expected to have a complete pathway to contamination in groundwater & surface soil during digging/excavating Impacted subsurface soil could be an exposure risk for construction workers during digging operations. There are no residents, day cares, trespassers, recreational areas to complete a pathway to media. Groundwater is not a drinking water source, no residents or day care at or near facility, trespassing is deterred with facility fencing and guard controlled access and there are no recreational uses for the area Food is not used, consumed or produced from or adjacent-to any above areas of impacted media.

[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)?

X 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): Exposures for worker and construction workers are not significant due to engineering controls, safe work procedures, personal protective equipment, site training, and management practices currently implemented and enforced at the facility for workers and construction work. For groundwater and subsurface soil contamination, workers and construction workers are likely to be exposed during digging/excavation activities where safe work procedures, PPE and operator expertise are required for such activities. In addition, all excavation work must be approved by the Environmental Group at the facility to assure workers are aware of potential contamination in soil/groundwater and that proper health and safety procedures are followed to prevent significant exposure in these operations. For surface soil, worker and construction workers are not likely to be exposed to significant contamination and are not reasonably expected due to low frequency, short duration, and low probability of contact with contaminated surface soil. For instance, ground cover such as concrete, gravel, and fill material provides engineered controls to prevent workers from coming in contact with contaminated surface soil. Also, areas of contaminated surface soil are small.

ConocoPhillips is currently in the process of conducting an RFI and LDEQ RECAP at the facility in Westlake, Louisiana. Based on preliminary information (Table 1), SWMUs may be reasonably suspected to be contaminated. In Table 1, analytes detected at SWMUs that currently exceed RECAP SSs are listed. Management Options (MO-1, MO-2) for the SWMUs regarding the constituents have not been completed. Upon completion of the RECAP, ConocoPhillips will submit a RECAP report to the LDEQ.

[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): _____

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

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):

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 ConocoPhillips Lake Charles Refinery, EPA ID LAD 990683716, located at 2200 Old Spanish Trail, Westlake, Louisiana 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) Brett LeBlanc Date 10/26/05

(print) Brett LeBlanc

(title) Geologist 3

Supervisor (signature) Lewis Donlon Date 10/25/05

(print) Lewis Donlon

(title) Geologist Supervisor

(EPA Region or State) Louisiana

Locations where References may be found:

Table 1, attached to this document, provides preliminary data for the Phase II RFI.
ConocoPhillips will submit a RECAP report to LDEQ.
SECOR International, June 1999, *RCRA Facility Investigation, Phase I Draft Report, Conoco Lake Charles Facility*, Prepared for Conoco Inc., Lake Charles, Louisiana
URS Corporation, March 2004, *Phase II RCRA Facility Investigation Work Plan, ConocoPhillips Lake Charles Refinery*, Prepared for ConocoPhillips Inc., Westlake, Louisiana.

Contact telephone and e-mail numbers

(name) Brett LeBlanc

(telephone no.) (337) 262-1566

(e-mail) brett.leblanc@la.gov

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.