

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: Angelina and Neches River Railroad - Former Century Forest Industries
Facility Address: 2225 Spence Avenue, Lufkin, Texas 75901
Facility EPA ID #: TXD990706517

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?

- 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).

Facility Information

The Century Forest Industries Site is 33.8 acres located approximately six miles east of Lufkin, Texas. The site was leased from Angelina and Neches River Railroad from 1976 to May 1983 and the property operated as a wood treating facility. Site operations included the treatment of wood with a xylene compound prior to treatment with creosote. The plant included a processing area, wood treating and chemical storage tanks, vapor drying tanks, and a fuel oil tank. Other features at the site included groundwater production wells, a wastewater treatment system, plant refuse piles and surface impoundments. Subsequent to ceasing operations in 1983, closure activities at the site have been performed, including the removal of tanks and processing equipment and select soil/sediment remediation. Wood treating equipment and tankage have been removed from the site. Four surface impoundments (Ponds A, B, C and D) were located east of the former process area. Closure activities were implemented at three of the four surface impoundments (Ponds B, C and D). Sediment and soil removal activities were conducted at Pond A; however, Pond A has not been closed. (ERM, 2000a)

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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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	<u> </u>	<u> </u>	<u>Benzene, Naphthalene, Carbazole, Benzo(a)anthracene</u>
Air (indoors) ²	<u> </u>	<u>X</u>	<u> </u>	<u>There are no on-site structures</u>
Surface Soil (e.g., <2 ft)	<u>X</u>	<u> </u>	<u> </u>	<u>Poly Aromatic Hydrocarbons (PAHs)</u>
Surface Water	<u> </u>	<u> </u>	<u>X</u>	<u>Pond on-site unlikely to contain constituents of concern</u>
Sediment	<u> </u>	<u>X</u>	<u> </u>	<u>PAHs not expected in sediment of on-site ponds</u>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	<u> </u>	<u> </u>	<u>PAHs</u>
Air (outdoors)	<u> </u>	<u>X</u>	<u> </u>	<u>Not expected as PAHs have low volatility</u>

 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):

Soil Samples collected in the Process Area and Pond A have concentrations of constituents of concern (COCs) that exceed Tier I direct contact protective concentration levels (PCLs). Site closure will be implemented under Texas Risk Reduction Program (TRRP) Remedy Standard B. An Affected Property Assessment Report (APAR) and Response Action Plan (RAP) will be submitted to the TCEQ. A review of groundwater analytical data indicates that COCs in groundwater appear to be degrading and the plume has not increased in size during the last 10 years. The proposed response action for Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX), and semi-volatile organic compounds (SVOCs) reported in groundwater beneath the affected property is monitored natural attenuation (MNA). (ERM 2000a, 2000b)

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.

References

ERM, 2000a. “Revised Soil Investigation Summary Report, Century Forest Industries, Lufkin, Texas.” Environmental Resources Management, W.O. #574-001, December 14, 2000.

ERM, 2000b. “Revised Ground Water Investigation Summary Report, Century Forest Industries, Lufkin, Texas.” Environmental Resources Management, W.O. #574-001, December 14, 2000.

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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	___	___	___	<u>X</u>	___	___	___
Air (indoors)	___	___	___	___	___	___	___
Soil (surface, e.g., <2 ft)	___	___	___	<u>X</u>	___	___	___
Surface Water	___	___	___	___	___	___	___
Sediment	___	___	___	___	___	___	___
Soil (subsurface e.g., >2 ft)	___	___	___	<u>X</u>	___	___	___
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):

An APAR and RAP will be submitted to the TCEQ to address soil contamination that exceeds Tier I direct contact PCLs. The groundwater plume appears to be degrading and has not increased in size during the last 10 years. MNA is the proposed response action for BTEX and SVOCs reported in groundwater beneath the affected property. (ERM 2000a, 2000b) The site is currently inactive and all structures and processing equipment have been removed. The site is partially fenced, in a rural setting and the only road access is barred by a locked gate.

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

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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):

Complete exposure pathways (contaminated media - receptor combination) were groundwater, surface soil, subsurface soil and construction worker. The site is currently inactive with no structures or processing equipment as they have since been removed. The site is partially fenced, in a rural setting with the only road access barred by a locked gate. The only activity at the site would be from workers involved in groundwater monitoring , remediation and maintenance activities at the site. Exposures at the site are not expected to be significant as the duration of the exposures is expected to be low and proper personal protective equipment should be donned during these activities.

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.

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5 Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

Not Applicable

_____ 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):

Not Applicable

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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 - 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 Angelina and Neches River Railroad - Former Century Forest Industries facility, EPA ID #TXD990706517, located at 2225 Spence Avenue, Lufkin, Texas 75901 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 12/30/2004
(print) Douglas Crist
(title) **Project Manager**

Supervisor (signature) _____ Date _____
(print) Jason Wang
(title) Supervisor
Texas Commission on Environmental Quality

Locations where References may be found:

TCEQ Central Records, Austin, Texas

Contact telephone and e-mail numbers:

Project Manager listed above
(512) 239-2343
corraact@tceq.state.tx.us

Final Note: The purpose of the Human Exposures EI is to qualitatively screen exposures based on current land and groundwater use. A "YE" determination does not constitute a screening tool that ends the corrective action process. The "YE" determination may be changed at any time as new information becomes available.

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

Completed by (signature) *Douglas Crist* Date 12/30/2004
 (print) Douglas Crist
 (title) Project Manager

Supervisor (signature) *Jason Wang* Date 12/30/2004
 (print) Jason Wang
 (title) Supervisor
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*Final report due 1/10/05
 - if it is needed/signed
 returned to DVE*