

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: Neches River Treatment Corporation
Facility Address: 2655 Gulf States Rd, Beaumont, TX 77701
Facility EPA ID #: TXD074204991

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.

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— If no - re-evaluate existing data, or

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— 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, GPRRA). 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).

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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		x		See Rationale Below
Air (indoors) ²		x		“ ”
Surface Soil (e.g., <2 ft)				“ ”
Surface Water		x		“ ”
Sediment		x		“ ”
Subsurf. Soil (e.g., >2 ft)	x			“ ”
Air (outdoors)		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.

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

Lower Neches Valley Authority – North Regional Treatment Plant (LNVA-NRTP) is located at 2665 Gulf States Road in the City of Beaumont, TX. The facility treats and discharges industrial waste water generated by local industrial facilities. The treated waste water is discharged to the Neches River under TPDES Permit No. 0062677. LNVA is the operator and co-owner of the hazardous waste permit with the Neches River Treatment Corporation (NRTC). NRTC, a wholly owned subsidiary of ExxonMobil Oil Corp, is the site owner. Untreated and partially treated waste water is piped from nearby facilities, including ExxonMobil Refinery, Arch Chemical Company, ExxonMobil Chemical Company, P.D. Glycol Company and Arkema.

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.

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The waste water is biologically treated in mechanical aeration and sedimentation basins. The treatment process generates hazardous sludge. The sludge is dewatered and piped to Exxon Mobil Refinery where it is further treated in an aerobic digester. The waste water treatment process, including the sludge processing is not regulated under RCRA due to the waste water exemption. According to the facility's NOR, no hazardous waste is generated at the facility. Small quantities of paint and paint related waste is generated but is managed as a Universal Waste. Lab waste is disposed of in the treatment process. Chemical Oxygen Demand vials are rinsed and disposed as crushed glass. Most of the waste generated at the facility is disposed at BFI municipal landfill in Beaumont.

Facility History

The facility opened for operation in 1976 and currently operates as a conditionally exempt small quantity generator. The facility closed three treatment basins in 1995; the Equalization Basin, the Main Aeration Basin, and the Auxiliary Basin. LNVA submitted a Post Closure Plan for the Equalization Basin to the TCEQ on September 25, 1991. A temporary permit (HW50349) was issued on April 15, 1994. The TCEQ accepted the completed closure of the Equalization Basin as a landfill on May 23, 1996. The Equalization Basin is constructed with a natural clay liner, of unknown permeability, reported to be 20 to 25 feet thick. Wastes materials were solidified and a multi-layer cap was installed at closure that comprises clay, geosynthetic clay, 40 mil HDPE liner, geonet and geotextile layers and an under drainage system. A perimeter fence around the basin was also installed.

The permit for post closure care was renewed on November 16, 2004 and expires in 10 years from the renewal date. The facility's permit requires a detection monitoring program. LNVA performs semi-annual monitoring at eight monitoring wells located on site. The depth to groundwater from the lowest layer of the basin is estimated at 30 to 40 feet. Available file materials indicate the facility continues to conduct detection groundwater monitoring, with no indication of groundwater contamination. According to the TCEQ Project Manager, Mr. E.J. Biskup, they have seen no significant increases in the over 10 years of detection monitoring. There are no groundwater concerns at this time. The facility is proposing to discontinue the detection monitoring although the post-closure care permit requires the monitoring to continue until 2025. A meeting is tentatively scheduled for August 2006 to discuss the facility's proposal with the TCEQ.

The Main Aeration Basin and the Auxiliary Aeration Basin were clean closed but remain in operation as non-hazardous treatment units. The Auxiliary Aeration Basin was offline at the time of the 2005 Compliance Evaluation Investigation (CEI) but may be brought in to use if required.

There was no evidence of release or corrective action activities (other than closure of three basins discussed above) in the available file materials. According to the facility's renewal permit issued in 2004, "At the time of this permit renewal, there are no units with known contamination requiring investigation. Mr. Biskup confirmed that there is no ongoing corrective action or concerns at the facility to his knowledge. The facility also operates under wastewater permit numbers TPDES0062677 and WQ0001727000 as well as new air source permits JE0320T.

Rationale

Groundwater The facility has conducted detection monitoring for over 10 years, with no evidence of contamination.

Air (Indoors) The facility clean closed two surface impoundments and RCRA closed a third impoundment as a landfill in 1995. Closure included the installation of gas collection/pressure relief vents, which should minimize the potential for vapor migration through soils.

Surface Soil (e.g., <2 ft) There is no reported evidence of surface soil contamination at the site. The facility clean closed two surface impoundments and RCRA closed a third impoundment as a landfill in 1995. Closure included the installation of a multilayer cap system to cover the basin.

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Surface Water There is no reported evidence of releases to surface water in available file materials. Discharges are regulated under TPDES permit.

Sediment There is no reported evidence of sediment contamination in available file materials.

Subsurface Soil (e.g., >2 ft) The facility clean closed two surface impoundments and RCRA closed a third impoundment as a landfill in 1995. The landfill was constructed with a natural clay liner, with solidified wastes remaining in place.

Air (Outdoors) There is no history of unregulated releases to the air. The facility has gas collection/pressure relief vents from the closed landfill and operates under new source air permits.

References

1. Untitled Document [assumed to be Closure Report]; Section 2.6 Cap Construction; pages 2-21 through 2-31; Regarding Cap System Information on Equalization Basin; dated October 1995.
2. Correspondence from Robert Stroder; LNVA, to Jeffery A. Saitas; TNRCC, Re: LNVA-North regional treatment plant second 2000 semi-annual ground water monitoring report; dated February 1, 2001.
3. Texas Natural Resource Conservation Commission (TNRCC) Permit Application Part B; dated July 24, 2002.
4. Compliance History; dated June 9, 2004.
5. Correspondence from Edward Biskup; TCEQ, to Jesse Eastep; LNVA, Re: 2004 Annual detection monitoring report; dated June 13, 2004.
6. LNVA Permit Renewal for the North Regional Treatment Plant; Hazardous Waste Permit No. 50349; dated November 16, 2004.
7. Correspondence from LaDonna Castanuela; TCEQ to Robert Stroder; LNVA, Re: Permit No. 50349; dated December 2, 2004.
8. Texas Commission of Environmental Quality (TCEQ) Compliance Evaluation Investigation (CEI) Investigation Report; dated February 28, 2005.
9. TCEQ CEI Investigation Report Exit Interview; dated April 14, 2005.
10. RCRAInfo Comprehensive Permitting Report; run date December 22, 2005.
11. RCRAInfo Comprehensive Corrective Action Report; run date December 28, 2005.
12. Correspondence from Edward Biskup; TCEQ, to Jesse Eastep; Lower Neches Valley Authority (LNVA), Re: Detection monitoring program statistical clarification; dated February 10, 2006.
13. Communication Log; Telephone Conversation between Edward J. (E.J.) Biskup, TCEQ; and Ann Anderson, TechLaw, Inc.; Regarding Groundwater Monitoring and Facility Status; dated July 20, 2006.

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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

“Contaminated” Media	Potential Human Receptors (Under Current Conditions)						
	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)	No	No	No	No	No	No	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.

- 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):

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

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Rationale

Subsurface Soil The Equalization Basin has been closed with stabilized wastes in place. The unit has been covered with multilayer cap, and surrounded by a security fence precluding the likelihood of exposure to any human receptors.

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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):

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?

- 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):

