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: INTERNATIONAL PAPER NAVASOTA FACILITY
Facility Address: HWY. 6 NORTH AT SEBASTIAN RD.
Facility EPA ID #: TXD008077356

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).

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	✓			Creosote constituents + pentachlorophenol
Air (indoors)[2]		✓		
Surface Soil (e.g., <2 ft)		✓		
Surface Water		✓		
Sediment		✓		
Subsurf. Soil (e.g., >2 ft)	✓			Creosote constituents + pentachlorophenol
Air (outdoors)		✓		

____ 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): Note: Site locations are shown on enclosed figure.

Groundwater: The area of affected groundwater is derived from the former surface impoundments used before the wood preserving plant was closed in 1983 for separation of creosote and pentachlorophenol from wastewater (former ponds 1-6 on figure). The surface impoundments were certified closed in 1991, and the post-closure care permit issued 3/15/91 includes Compliance Plan CP-50266 (TNRCC Permit HW-50266-000), which requires corrective action for the affected groundwater. The affected groundwater extends southward and westward from the area of the former ponds. Site contaminants consist of wood preservative constituents derived from creosote, and pentachlorophenol. The principal constituents in the groundwater are the creosote constituents naphthalene, phenol, cresols and 2,4-dimethlyphenol; and pentachlorophenol. In the fourth quarter 1999 groundwater sampling results, the concentration of naphthalene ranges from 0.041 mg/L to greater than 1 mg/L, phenol ranges from 0.012 mg/L to greater than 1 mg/L, total cresols range from 0.013 mg/L to greater than 1 mg/L, and 2,4-dimethylphenol ranges from 0.024 mg/L to greater than 1 mg/L; all of which exceed the groundwater protection standard of 0.010 mg/L for each constituent. The concentration of pentachlorophenol ranges from 0.212 mg/L to greater than 1 mg/L, exceeding the groundwater protection standard of 0.050 mg/L. Dense non-aqueous phase liquid consisting of free-phase creosote is present in monitoring well N-27B, which is just west of former pond 6.
Reference—Semi-Annual CAP Effectiveness Report, Third and Fourth Quarters 1999, International Paper Former Treated Wood Products Facility, Navasota, TX (in preparation for submission in March 2000).

Subsurface Soil: Affected subsurface soil occurs in the locations of the six former surface impoundments. These impoundments were certified closed in 1991.
Reference—Closure Certification Summary, Former Hazardous Waste Management Surface Impoundments and Solid Waste Management Unit, International Paper, Navasota, TX (1991).

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	NO	NO	YES			NO
~~Air (indoors)~~	—	—	—				
~~Soil (surface, e.g., <2 ft)~~	—	—	—	—	—	—	—
~~Surface Water~~	—	—			—	—	—
~~Sediment~~	—	—			—	—	—
Soil (subsurface e.g., >2 ft)				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.

___ 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): Potential exposure pathways could occur for construction workers, who could be exposed to affected groundwater within the facility if intrusive construction activities were to occur. Exposure routes for construction workers could consist of ingestion or dermal contact. The probability of intrusive construction activity at the site is very low due to the closure of the manufacturing facility in 1983.

[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): Potential exposures to construction workers are not reasonably expected to be significant, principally due to the very low probability of intrusive construction activities at the site as the manufacturing facility has been closed since 1983.
Reference — Closure Certification Summary, Former Hazardous Waste Management Surface Impoundments and Solid Waste Management Unit, International Paper, Nacogdoches, TX (1991).

[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 - 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 INTERNATIONAL PAPER, NAVASOTA, TX. facility, EPA ID # TXD008077356, located at HWY 6 N @ SEBASTIAN RD 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 1/28/00
(print) Gary Dry
(title) Project manager

Supervisor (signature) _____ Date 1/28/2000
(print) JASON WANG
(title) Supervisor
(EPA Region or State) Texas

Locations where References may be found:

All project reports have been submitted to the TNRCC Industrial & Hazardous Waste Div. and are maintained at the International Paper Navasota facility, Hwy 6 N at Sebastian Rd., Navasota, TX. 77868.

Contact telephone and e-mail numbers

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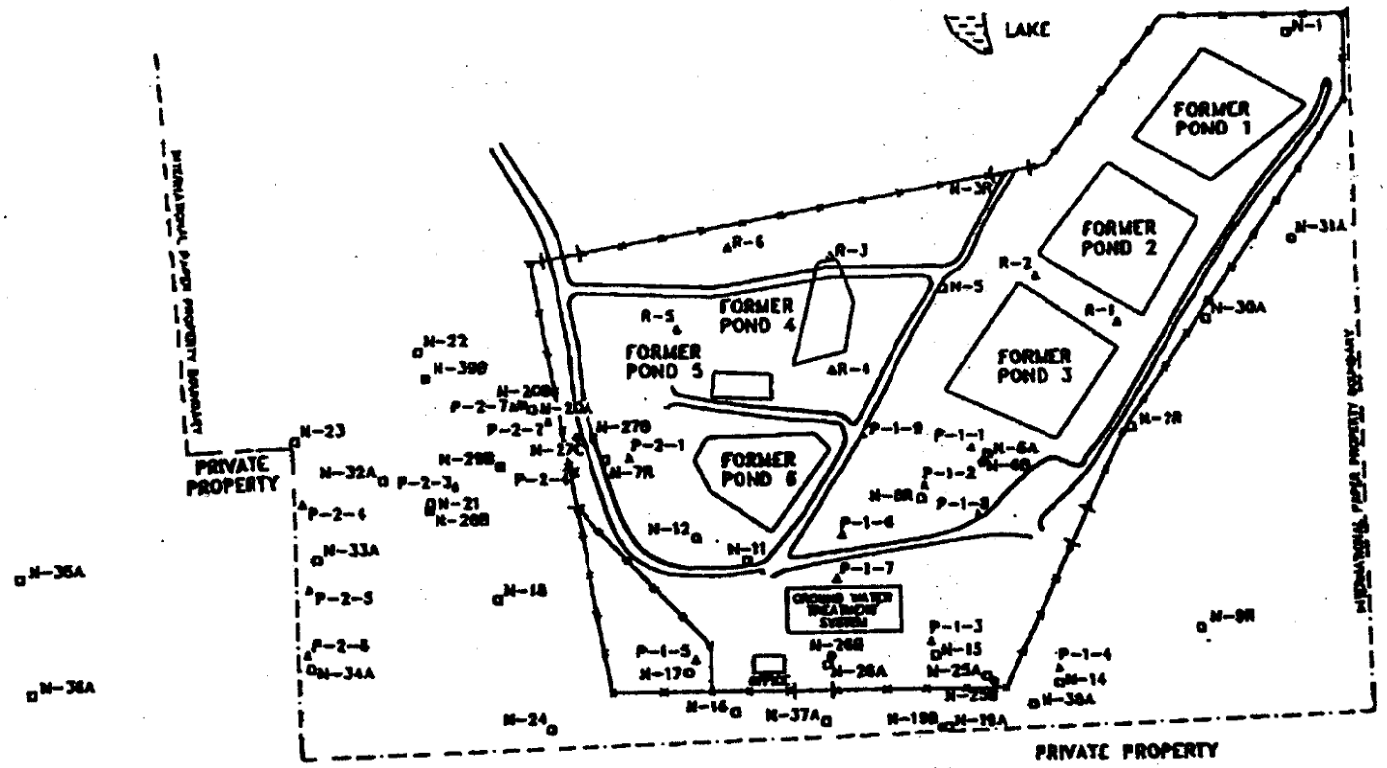
FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.



GRANT ENVIRONMENTAL consulting and engineering DENVER, COLORADO

FIGURE 2.1

SITE FEATURES AND WELL LOCATIONS