

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: Total Petrochemicals USA Inc.
Facility Address: 1818 Battleground Road; La Porte, Texas; 7571-1818
Facility EPA ID #: TXD086981172

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 AIN@ (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 ACurrent Human Exposures Under Control@ EI

A positive ACurrent Human Exposures Under Control@ EI determination (AYE@ status code) indicates that there are no Aunacceptable@ human exposures to Acontamination@ (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 Acontamination@ 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, GPRAs). The ACurrent 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		There is no reported history of groundwater contamination.
Air (indoors) ²		X		There is no reported history of groundwater contamination.
Surface Soil (e.g., <2 ft)		X		There is no documented history of release to surface soils from this facility.
Surface Water		X		There is no documented history of release to surface water from this facility
Sediment		X		There is no documented history of release to sediment from this facility
Subsurf. Soil (e.g., >2 ft)		X		There is no documented history of release to subsurface soils from this facility
Air (outdoors)		X		Emissions Risk Assessment from Part B permit application demonstrates no unacceptable risks from emissions

- 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.

Facility Description, Rationale and Reference(s):

¹ AContamination@ and Acontaminated@ 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 Alevels@ (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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FACILITY DESCRIPTION

The site was originally established in 1963. The La Porte Plant has been owned and operated by the following companies: Alamo Polymers (1963), Diamond Shamrock (1967), ARCO Chemical Company (1977), Cosden Oil and Chemical Company (1984), Fina Oil and Chemical Company (1985), and Atofina Petrochemicals, Inc (2000). In 2004 the name was changed from Atofina Petrochemicals, Inc. to Total Petrochemicals USA, Inc.

Total Petrochemicals is located on an 87-acre tract of land in La Porte, Texas. The facility manufactures polypropylene and comprises three main production areas, referred to as Monument I, Monument II and Monument III. The primary raw material used in the production of polypropylene is propylene liquid. Other raw materials used include: hexane, aluminum alkyl catalyst, ethane and propane. The production process includes reacting the propylene monomer into long-chained polypropylene molecules in the presence of a proprietary chemical catalyst. The production process generates a waste stream, Amorphous Polymer Solution (APS). A hazardous waste combustion system at the plant burns the APS and produces process steam. (Reference 6)

The hazardous waste generator status for the facility is large quantity generator. As of May 2005, the facility operated 14 active waste management units. The active waste management units subject to RCRA permitting requirements include one interim status boiler (Train A) and one interim status incinerator (Train B). Other storage units are exempt from RCRA permit requirements or manage non-hazardous wastes. The facility's permit application is under review and has been assigned a proposed permit number of 50394. The facility's air emissions are regulated under Air Account No. HG-0036S. The facility's stormwater permit number is TXR05M372 and wastewater permit number is TPDES0007421 (Reference 6).

According to a 2001 TNRCC File Review, there was no known groundwater contamination at the facility and the facility had no knowledge of any past disposal of solid wastes at the site (Reference 1). The facility referenced a RCRA Facility Assessment (RFA), prepared by an EPA contractor, as supporting evidence. Based on the RCRAInfo Comprehensive Corrective Action Report, an RFA was completed and a determination that an RFI was not needed was made in 1992. The facility also was assigned a low priority for corrective action in 1992 (Reference 10). The facility has been routinely inspected for compliance by TNRCC/TCEQ staff since 2001 with no significant findings of violations and no reports of unpermitted releases (References 3, 4, and 6).

RATIONALE

Groundwater

In the Texas Natural Resource Conservation Commission Interoffice Memorandum, Page 4 (Reference 1) states that "there is no known groundwater contamination at the facility." The facility's two regulated units produce air emissions and the file materials indicate that emissions do not pose unacceptable risk. Therefore, it is assumed that there is no significant cross-media contamination.

Surface Soil

There is no documented history of release to soils in the available file materials. The facility's two regulated units produce air emissions and the file materials indicate that emissions do not pose unacceptable risk. Therefore, it is assumed that there is no significant cross-media contamination.

Surface Water

There is no documented history of release to surface water in the available file materials. The facility's two regulated units produce air emissions and the file materials indicate that emissions do not pose unacceptable risk. Therefore, it is assumed that there is no significant cross-media contamination.

Sediment

The facility's two regulated units produce air emissions and the file materials indicate that emissions do not pose unacceptable risk. Therefore, it is assumed that there is no significant cross-media contamination.

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Subsurface Soil

The facility's two regulated units produce air emissions, and the file materials indicate that emissions do not pose unacceptable risk. Therefore, it is assumed that there is no significant cross-media contamination.

Air emissions

The facility's air emissions are regulated under Air Account No. HG-0036S. The facility has air operating permits and air new source permits. Section 5.A.1.3 of the Part B Permit application, Revised September 2003, includes a section demonstrating that emissions from the hazardous waste combustion system, for the incinerator (Train B), do not pose an unacceptable risk (Reference 5). The following constituents were identified as being present in the waste stream: benzene, toluene, ethylbenzene, xylene, naphthalene, 2-methylnaphthalene and di-n-butylphthalate. Using the worst case emission rate to calculate the maximum ground level concentration, these numbers are compared to allowable concentrations in the following table. Allowable concentrations were found in appendices IV or V of 40 CFR Part 266 for the Part B Permit Application. For this review, the maximum predicted ground level concentrations were also compared to the Region 6 Human Health Medium-Specific Screening Levels 2006 and found to be acceptable.

Compound	Emission Rate	Maximum Predicted Ground Level Concentration	Allowable Ground Level Concentration
Benzene	0.00003 g/sec	0.000017 $\mu\text{g}/\text{m}^3$	1.2 $\mu\text{g}/\text{m}^3$
Toluene	0.0055 g/sec	0.0031 $\mu\text{g}/\text{m}^3$	300 $\mu\text{g}/\text{m}^3$
Ethylbenzene	0.0015 g/sec	0.00085 $\mu\text{g}/\text{m}^3$	0.1 $\mu\text{g}/\text{m}^3$
Xylene	0.0069 g/sec	0.0039 $\mu\text{g}/\text{m}^3$	80 $\mu\text{g}/\text{m}^3$
Naphthalene	0.00011 g/sec	0.000063 $\mu\text{g}/\text{m}^3$	0.1 $\mu\text{g}/\text{m}^3$
2-methylnaphthalene	0.00017 g/sec	0.000097 $\mu\text{g}/\text{m}^3$	0.1 $\mu\text{g}/\text{m}^3$
Di-n-butylphthalate	0.0003 g/sec	0.000017 $\mu\text{g}/\text{m}^3$	100 $\mu\text{g}/\text{m}^3$

In addition, the risks from non-carcinogenic metals were shown to be an insignificant risk, based on screening limits. Carcinogenic metals had a unit risk well below 1.0, as required by 40 CFR 266.106 (b) (2). The risk was at less than 0.256.

Similar data for the boiler were not present in the available file materials, however, correspondence to Bill Shafford of TNRCC from Darrell E. Bailey of Atofina (Reference 2) includes a summary that states "Past COC tests and other submittals indicate that there are no significant metals, particulate matter or Appendix VIII organics in the gaseous feed system. Hence, we do not include gas streams herein as they are proven insignificant in past data-in-lieu of testing. Also, past tests, submittals and discussions with TNRCC indicate that Train A [boiler] and Train B are essentially identical. Hence, Train A conditions apply to Train B." In addition, correspondence to Darrell Bailey of Total Petrochemicals from Katherine Nelson of TCEQ (Reference 7) indicates that an extension of Recertification of Compliance (RCOC) testing for hazardous waste boiler (Train A) was approved due in part to the following conditions: all previous testing successfully met operational and regulatory requirements and data from a CPT on a nearly identical unit [Train B] confirms compliance with regulations. The correspondence indicates that RCOC testing on Train A will take place in September 2006.

REFERENCES

1. Texas Natural Resource Conservation Commission Interoffice Memorandum, Summary of File Material, dated August 17, 2001.
2. Correspondence to Bill Shafford of TNRCC from Darrell E. Bailey of Atofina, RE: Revised 1999 Recertification of Compliance, Scrubber Inlet Temperature - BIF Unit (I-1A) and Standby Unit (I-1B), dated

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October 3, 2001.

3. TNRCC Investigation Report; CEI and BIF Investigation; Conducted on January 28 & 29, 2002.
4. TCEQ Investigation Report; Conducted on November 1, 2002.
5. BIF Part A, Part B, and Trial Burn Updates; Submitted to TCEQ; from Atofina; dated September 30, 2003.
6. Texas Commission on Environmental Quality Investigation Report; May 2005.
7. Correspondence to Darrell Bailey of Total Petrochemicals from Katherine Nelson of TCEQ, RE: Extension of Recertification of Compliance Test Date, dated July 1, 2005.
8. Correspondence to Mr. Darrin Swartz-Larson; U.S. EPA; from Katherine Nelson, TCEQ; Regarding Initial Draft Permit Total Petrochemicals USA, Inc.; dated September 30, 2005.
9. RCRAInfo Comprehensive Permitting Report; Run on December 22, 2005.
10. RCRAInfo Comprehensive Corrective Action Report; Run on December 28, 2005.

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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						
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 Acontaminated@ as identified in #2 above.
2. Enter Ayes@ or Ano@ for potential Acompleteness@ under each AContaminated@ Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential AContaminated@ Media - Human Receptor combinations (Pathways) do not have check spaces (A__@). 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 AContaminated@ Media - Human Receptor combination) - continue after providing supporting explanation.

—— If unknown (for any AContaminated@ Media - Human Receptor combination) - skip to #6 and enter AIN@ 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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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **Asignificant@**⁴ (i.e., potentially **Aunacceptable@** 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 **Alevels@** (used to identify the **Acontamination@**); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable **Alevels@**) could result in greater than acceptable risks)?

— If no (exposures can not be reasonably expected to be significant (i.e., potentially **Aunacceptable@** for any complete exposure pathway) - skip to #6 and enter **AYE@** status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to **Acontamination@** (identified in #3) are not expected to be **Asignificant@**.

— If yes (exposures could be reasonably expected to be **Asignificant@** (i.e., potentially **Aunacceptable@** for any complete exposure pathway) - continue after providing a description (of each potentially **Aunacceptable@** exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to **Acontamination@** (identified in #3) are not expected to be **Asignificant@**.

— If unknown (for any complete pathway) - skip to #6 and enter **AIN@** status code

Rationale and Reference(s):

⁴ If there is any question on whether the identified exposures are **Asignificant@** (i.e., potentially **Aunacceptable@**) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the Asignificant@ **exposures** (identified in #4) be shown to be within **acceptable** limits?

—— If yes (all Asignificant@ exposures have been shown to be within acceptable limits) - continue and enter AYE@ after summarizing and referencing documentation justifying why all Asignificant@ exposures to Acontamination@ 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 Aunacceptable@)- continue and enter ANO@ status code after providing a description of each potentially Aunacceptable@ exposure.

—— If unknown (for any potentially Aunacceptable@ exposure) - continue and enter AIN@ status code

Rationale and Reference(s):

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1. EPA may wish to verify that an RFA was performed at the site to ensure that groundwater, surface and subsurface soil and surface water has not been impacted from historical activities since a copy of the RFA was not located within file materials.

2. EPA may wish to confirm test burn results from pending the test burn for the incinerator.

