

**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:** Former Trojan Yacht  
**Facility Address:** 167 Greenfield Road, Lancaster, PA 17601  
**Facility EPA ID #:** PAD052922556

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 #8 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).

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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be “contaminated”<sup>1</sup> 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		GW quality was assessed. Except PCE, concentrations of VOCs in groundwater found below the MCLs and/or Act 2 MSCs for Groundwater in a Residential Used-Aquifer. Concentrations of PCE found above the MCL and/or Act 2 MSC for groundwater in a Residential Used-Aquifer in upgradient wells. PCE concentrations found below the MCL and/or Act 2 MSC for groundwater in a Residential Used-Aquifer in point of compliance well. PCE is not used in the facility’s manufacturing process. GW contamination by PCE has been attributed to off-site sources. On November 20, 2007, PADEP approved the Areawide Non-use Aquifer Designation for City of Lancaster, PA
Air (indoors) <sup>2</sup>		x		Potential risk to indoor air quality was assessed. Indoors air quality is not impacted by releases.
Surface Soil (e.g., <2 ft)		x		Contaminated soil remediated to levels below the Act 2 Residential Direct Contact MSC
Surface Water		x		No releases Documented
Sediment		x		No releases Documented
Subsurf. Soil (e.g., >2 ft)		x		Contaminated soil remediated to levels below the Act 2 Residential Direct Contact MSC
Air (outdoors)		x		No Releases Documented

- 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):**

The facility was situated on an approximately 26 acres of land in East Lampeter Township, Lancaster County, PA. In 1952, Shippen Realty Partners purchased the Site which was originally farmland. In 1954, Trojan Yacht leased the property and built the production building in 1955 for wooden pleasure boat production. Trojan Yacht owned the business until 1967 when Whittaker Corporation, located in Los Angeles, California took over. Whittaker owned the operation until approximately 1983 when Bertram-Trojan Incorporated (BTI), a division of Bertrex Corporation based in Miami, Florida, bought the business. In 1988, Bertrex Corporation was purchased by the investment group of G.L. Ohrstrom and Company. The construction of the boats began changing from wood to fiberglass in late 1960’s. By 1980’s, only fiberglass boats were produced. The manufacturing of yachts ceased in 1989.

The fiberglass processes required the use of toluene, MEK peroxide, and acetone. Waste products generated included acetone still bottom, polyester resin, and polyester gel-coat. Styrene is the primary constituent of Polyester resin and polyester gel-coat.

In 1987, contaminated soil by VOCs was identified at the site. The source of contamination was believed to be spills and overfills during routine fillings of ASTs containing acetone and toluene; resin that dripped from yachts and was allowed to harden on the ground; and potential leakage from containers and drums stored in contact with the ground.

Soil remediation was performed in 1987. The post-remediation soil analytical results revealed that VOCs concentrations were below the Act 2 Residential Direct Contact MSC of 10,000 mg/kg. Soils supplemental investigation was performed in 2006. The results of the investigation verify that acetone was the only VOC detected in the soil. Acetone concentrations were as high as 0.201 mg/kg, below the Act 2 Residential Direct Contact standard (June 2008 Act 2 – Final Report, Former Trojan Yacht, East Lampeter Township, Lancaster County, PA).

Groundwater was investigated from 1992 through 2006. Detectable levels of acetone, PCE, 1,1,1-TCA, cis-1,2-DCE, MTBE, styrene, and MEK were identified in one or more of the samples. PCE concentrations exceeded its MCL and Act 2 groundwater MSC of 5 ug/l. The remaining parameters were found at levels less than their respective Act 2 Residential GW MSCs and MCLs. Groundwater attainment samples were collected in November 6, 2006, July 2007 and January 2008. The attainment sampling results were consistent with the characterization results. Only PCE was found at concentrations exceeding its MCL and Act 2 GW MSC. PCE was not used in the facility's manufacturing process. The groundwater investigation at the facility revealed that the contamination of PCE in the groundwater underneath the facility is not caused by the facility's releases, however, by the off-site sources. The regional contamination by PCE exists because of the historic industrial use in the site's vicinity. On November 20, 2007, PADEP approved the Areawide Non-use Aquifer Designation for City of Lancaster, PA (June 2008 Act 2 – Final Report, Former Trojan Yacht, East Lampeter Township, Lancaster County, PA).

Indoors air quality was assessed. Indoors water quality is not negatively impacted by the releases at the facility (June 2008 Act 2 – Final Report, Former Trojan Yacht, East Lampeter Township, Lancaster County, PA).

Footnotes:

<sup>1</sup> "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).

<sup>2</sup> 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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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)

<b><u>“Contaminated” Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
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 “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):

<sup>3</sup> 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”**<sup>4</sup> (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):**

<sup>4</sup> 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):

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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 (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 Former Trojan Yacht facility, EPA ID # 052922556, located at 167 Greenfield Road, Lancaster, PA 17601 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) *Tran Tran*  
(print) Tran Tran  
(title) RPM

Date 3/15/2010

Supervisor (signature) *Paul Gotthold*  
(print) Paul Gotthold  
(title) Associate Director  
(EPA Region or State) USEPA Region 3

Date 3/15/2010

Locations where References may be found:

US EPA Region III  
Land & Chemicals Division  
1650 Arch Street  
Philadelphia, PA 19103

PADEP Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 17110

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