

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:** Dresser Industries, Inc. - Wayne Division  
**Facility Address:** 124 West College Avenue; Salisbury, MD 21804  
**Facility EPA ID #:** MDD 044 147 098

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).

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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	<u>X</u>	___	___	<b>See Below</b>
Air (indoors) <sup>2</sup>	<u>X</u>	___	___	<b>See Below</b>
Surface Soil (e.g., <2 ft)	___	<u>X</u>	___	<b>Analytical results below appropriate screening criteria</b>
Surface Water	___	<u>X</u>	___	<b>No surface water associated w/site</b>
Sediment	___	<u>X</u>	___	<b>No sediments associated w/site</b>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	___	___	<b>See Below</b>
Air (outdoors)	___	<u>X</u>	___	<b>No air emissions associated with site</b>

\_\_\_ 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:** - In January 2002, EPA completed its Environmental Indicators Inspection Report of the Facility and concluded that, to complete the “Current Human Exposures Under Control” EI determination for the Facility, additional information was needed with respect to an area at the Facility where underground storage tanks (USTs) had historically been located and an area at the Facility where soils removed from the former UST area had been remediated through land farming activities. These two areas are referred to hereinafter as Areas Of Concern or AOCs. Dresser completed supplemental site assessments, and, EPA approved the Expanded Site Investigation Report (ESI), 2002 and its Additional Investigation, 2003. The reports from the ESI augment the information previously assembled by EPA.

**Groundwater:** Groundwater sampling was performed within and surrounding the subject AOCs. Benzene, toluene, ethylbenzene, naphthalene, cis and total 1,2-dichloroethene and tetrachloroethene (PCE) were detected in certain of the groundwater samples at concentrations exceeding either the groundwater cleanup standards for Type I and Type II aquifers set forth in a guidance document entitled "Cleanup Standards for Soil and Groundwater - Interim Final Guidance" (August 2001) issued by the Maryland Department of Environment (MDE) or Maximum Contaminant Levels (MCLs) developed by EPA under the Safe Drinking Water Act. The groundwater sampling locations and results are summarized on Table 1, "Groundwater Detects and Exceedances," and Figure 1, "Groundwater Detects and Exceedances Map," both of which are included in the ESI.

**Air (Indoors):** Volatile organic contaminants including toluene, benzene, ethylbenzene, naphthalene, and tetrachloroethene are present in groundwater above generic screening levels listed in EPA’s draft guidance for evaluating vapor intrusion to indoor air pathway (November 2002).

**Surface and Subsurface Soils:** Samples of surface and subsurface soils were collected and analyzed in accordance with the ESI work plan approved by EPA. The soil samples were collected from within and surrounding the subject AOCs. No substances of concern were detected in surface soil samples at concentrations exceeding relevant risk-based standards. Toluene, ethylbenzene, xylenes, naphthalene, acetonitrile and isobutanol were detected in subsurface soil samples collected from three soil borings within the former UST area at depths of between 19 and

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22.5 feet below ground surface (bgs) at concentrations exceeding one or more of (1) the MDE Protection of Groundwater Soil Cleanup Standards as set forth in the guidance document entitled "Cleanup Standards for Soil and Groundwater - Interim Final Guidance" (August 2001), and (2) the EPA Region III Soil Screening Levels (soil-to-groundwater pathway) as revised April 16, 2003. Naphthalene was detected in a single subsurface soil sample from the 205-21.0 foot interval exceeding the MDE Residential Soil Cleanup Standards as set forth in the guidance document entitled Cleanup Standards for Soil and Groundwater - Interim Final Guidance (August 2001).

Naphthalene and ethylbenzene were also detected in a single soil boring within the former UST area at a depth of between three and four feet bgs at concentrations exceeding the MDE Protection of Groundwater Soil Cleanup Standards as set forth in the guidance document entitled "Cleanup Standards for Soil and Groundwater - Interim Final Guidance" (August 2001), and/or the EPA Region III Soil Screening Levels (soil-to-groundwater pathway) as revised April 16, 2003. The soil sampling locations and results are summarized on Table 2, "Soil Detects and Exceedances," and Figure 2, "Soil Detects and Exceedances Map," both of which are included in the ESI.

**Reference(s):**

Environmental Priorities Initiative Preliminary Assessment of Wayne Industries, Inc, Salisbury, MD, 12/89  
Site investigation Report, Dresser Industries, Inc. Soil Vapor Survey and Groundwater Investigation, April 19, 1994  
Well Installation and Monitoring, Dresser Industries, Inc. March 19, 1999  
Environmental Indicators Inspection Report for Dresser Industries, Inc. -Wayne Division, Salisbury, MD,1/15/02  
Expanded Site Investigation Report, Tetra Tech, January 8, 2003  
Expanded Site Investigation Report, Tetra Tech, Additional Investigation Report, November 2003  
Cleanup Standards for Soil and Groundwater - Interim Final Guidance" (August 2001).  
EPA Region III Soil Screening Levels (soil-to-groundwater pathway), revised April 16, 2003.

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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**

<b><u>“Contaminated” Media</u></b>	<b>Potential <u>Human Receptors</u> (Under Current Conditions)</b>							
	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>	
Groundwater	NO	NO	NO	NO*			NO	
Air (indoors)		NO*						
Soil (surface, e.g., <2 ft)								
Surface Water								
Sediment								
Soil (subsurface e.g., >2 ft)					NO*		NO	
Air (outdoors)								

\* See Groundwater, Subsurface Soils and Air (indoors) Notes below  
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:**

**Groundwater:** Based upon information obtained from Dresser, groundwater beneath the facility is not being used for drinking. In addition, Dresser (Tetra Tech) also performed a well survey encompassing both the facility and the surrounding areas. As documented in the ESI Report, no wells (other than monitoring wells) are present at the facility. Therefore, there is no direct exposure to on site groundwater. Trace to low levels of trichloroethene and tetrachloroethene are present in wells proximate to the northern (downgradient) boundary of the site. There are no residential areas or potable-use wells located within a reasonable proximity (greater than 200 feet) of the site. Accordingly, no complete pathways of exposure to the groundwater beneath the facility currently exist.

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**Soil:** The soil sampling performed at the facility in accordance with the ESI work plan approved by EPA did not show any surface soils to be present containing substances of concern at concentrations above levels of regulatory concern. Subsurface soils containing substances of concern at concentrations above relevant criteria are generally located at significant depth (at least 19 feet bgs) where the possibility for potential human exposure is remote. Moreover, only naphthalene at a single location at a depth of 20.5-21.0' was detected at a level exceeding direct contact risk-based standards (either the MDE Residential Soil Cleanup Standards or the Region III RBCs). The facility is currently inactive but was used to assemble gasoline dispensing pumps and storage of its hazardous waste; no agricultural uses occur at the facility.

**Indoor Air Quality:** The site is currently shut down, and the majority of the buildings are unoccupied. A small temporary workforce is present in the second floor of the main building. Groundwater samples from beneath this building revealed concentrations of naphthalene exceeding generic screening concentrations for vapor intrusion to indoor air (November, 2002 EPA draft guidance). Semi-site specific screening using Table 3b of the vapor intrusion guidance (attenuation factor of 0.0001) resulted in no exceedances of target groundwater naphthalene concentrations. The attenuation factor of 1E-04 is justified based on the large volume of the first floor of the main building (ceiling height approaching 20 feet); as well as significant air exchange rate.

Groundwater samples obtained from wells beneath the former UST area, the land farm area, and from wells located south of the land farm area revealed benzene, toluene, ethylbenzene\*, naphthalene, trichloroethene, and tetrachloroethene at concentrations exceeding generic vapor intrusion screening concentrations. Many of these wells are located at distances of 100 feet or greater from the worker-occupied (2<sup>nd</sup> floor) main building. Moreover, comparison of reported groundwater concentrations in these areas to semi-site specific screening values listed in Table 3b of the vapor intrusion guidance (attenuation factor of 0.0001, risk of 1E-05) revealed no exceedances. The vapor intrusion pathway is therefore judged to be incomplete.

\*(Note that the screening values for ethylbenzene in groundwater listed in Table 3b of the vapor intrusion guidance are based on a provisional inhalation unit risk factor that has been withdrawn. A revised screening concentration using current toxicity data was estimated to be 31, 000 ug/l.

**Reference(s):** See Comment 2

<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):**

**Not applicable, see Question 3.**

<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):**

**Not applicable, see Question 3.**

