

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: ITW Waterbury Buckle, Inc.
Facility Address: 952 S. Main St., Waterbury, CT
Facility EPA ID #: CTD001165703

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).

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "**contaminated**" 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>	_____	_____	_____
Air (indoors) ²	_____	<u>x</u>	_____	_____
Surface Soil (e.g., <2 ft)	_____	<u>x</u>	_____	_____
Surface Water	_____	<u>x</u>	_____	_____
Sediment	_____	<u>x</u>	_____	_____
Subsurf. Soil (e.g., >2 ft)	<u>x</u>	_____	_____	_____
Air (outdoors)	_____	<u>x</u>	_____	_____

_____ 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):

Groundwater.

Background. During Stabilization investigation activities conducted in the fall of 1997, vinyl chloride and cis-1,2-dichloroethylene (cis-DCE) were detected in MW-2 at 190 and 49 ppb, respectively. MW-2 is located just west of AOC 15, Container Storage Area #1 between AOC 15 and the Mad River. See Site Investigation Report, ITW Waterbury Buckle Facility, Waterbury, Connecticut, dated November 1997. The presence of vinyl chloride and cis-DCE suggests reductive dehalogenation of some chlorinated precursor such as 111-TCA, TCE or PCE which would most likely be attributable to AOC 15. The detected concentrations are below CTDEP's Surface-Water Protection Criteria (SWC) of 15,750 ppb for vinyl chloride (no SWC is provided for cis-DCE), so the presence of vinyl chloride does not pose a current human health threat based on these standards.

However, at the time this evaluation was first conducted in April of 1999, MW-2 was the only well installed to define the extent of this contamination; because no other wells had been installed, it was determined that this plume could not meet the criteria for CA750, *Migration of Contaminated Groundwater Under Control*. In addition, since the plume could not be considered under control, it was still possible that a human health threat existed from surface water as the facility did not sample surface water during the fall of 1997 work activities (only sediments). Therefore, pending results of groundwater samples from another well located further downgradient and/or surface water sampling activities as set forth in a December 14, 1998 letter to the facility, it was recommended that the facility did not meet the criteria for CA725, *Current Human Exposures Under Control*.

1998

Recent Activities. In a letter dated December 14, ~~1999~~, EPA requested the facility (1) install an additional groundwater monitoring well downgradient of MW-2 and (2) sample surface water in the Mad River for the presence of vinyl chloride. The results of these activities were presented in a letter from the facility dated July 19, 1999. Briefly, analytical results of surface water sampling did not reveal the presence of vinyl

chloride. Similarly, analytical results of the sampling of the groundwater from the new monitoring well, MW-5, did not reveal the presence of either cis-DCE or vinyl chloride. Re-sampling of MW-2 again revealed the presence of vinyl chloride and cis-DCE in concentrations of 46 and 2 ug/l, respectively.

Subsurface Soils. The facility has recommended to consolidate many AOCs located on the basement floor of the facility building into a single area, entitled the Basement Waste Management Area (BWMA). It is possible, perhaps likely, that contamination exists under the building, but for purposes of Stabilization, this contamination is confined and inaccessible to humans. The work conducted in the fall of 1997 was designed to determine the possible existence of plumes which may have originated from under the building, but with the exception of the contamination detected at MW-2, the data does not suggest the migration of contaminants from under the facility building is a problem. If at some time in the future the facility is requested to achieve a final remedy, then the BWMA, as a potential source of contaminants, will need to be addressed.

Footnotes:

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
 Page 3

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)	___	___	___	<u>_n_</u>	___	___	___
Surface Water	___	___			<u>_n_</u>	<u>_n_</u>	___
Sediment	___	___			<u>_n_</u>	<u>_n_</u>	___
Soil (subsurface e.g., >2 ft)	___	___		<u>_y_</u>			___
Air (outdoors)	___	___	___	___	___		___

Instructions for Summary Exposure Pathway Evaluation Table:

"n" or blank =no; y=yes

- Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.
- 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).

x 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): **See discussion above. The main human health exposure pathway is associated with a construction scenario either in or near the Basement Waste Management Area (BWMA) or soils in the vicinity of AOC 15/Container Storage Area No. 1.**

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

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

Page 4

- 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):

The recent work activities as presented above answer the remaining concerns associated with the site and reasonably suggest that significant human health exposures are not to be expected at this time.

In addition, the facility has taken steps to control/mitigate exposures including (a) decommissioning activities (accounting for some seventeen (17) interim measures (IM)), (b) the establishment of institutional controls for controlling exposures to the BWMA and (c) indoor air sampling which confirmed that vinyl chloride is not present within the BWMA. EPA's site visit conducted during Voluntary Corrective Action negotiations some time ago confirmed the general cleanliness and organization of the BWMA. The recent investigation activities and the aforementioned IMs and institutional controls reasonably confirm that human exposures to contamination which may exist at the site are controlled so as not to constitute "significant" human health exposures at this time.

However, it is recommended that the facility be informed of the conditions upon which this determination is based such as land use/institutional controls to ensure construction activities do not take place near the BWMA or AOC 15 and that BWMA/site institutional controls remain effective over the longer term.

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 6

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 **ITW Waterbury Buckle** facility, EPA ID #CTD001165703, located at **952 S. Main St., Waterbury, CT** 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) *Raphael Cody* Date: 4/6/99
(print) Raphael Cody Revised: 7/21/99
(title) RCRA Facility Manager

Supervisor (signature) *Matt Hoagland* Date 8/2/99
(print) Matt Hoagland
(title) Chief, RCRA Corrective Action
(EPA Region or State) Region I

Locations where References may be found:

see facility files _____

STATE Contact telephone and e-mail numbers

(name) _____
(phone #) _____
(e-mail) _____

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.