

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: Sterling Casket Hardware Co., Inc.
Facility Address: 14430 Enterprise Road, Abingdon, VA
Facility EPA ID #: VAD000020115

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**"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	✓	—	—	<u>see attached, item #1</u>
Air (indoors) ²	—	✓	—	<u>see attached, item #2</u>
Surface Soil (<2 ft)	✓	—	—	<u>see attached, item #3</u>
Surface Water	—	✓	—	<u>see attached, item #4</u>
Sediment	—	✓	—	<u>see attached, item #5</u>
Subsurf. Soil (>2 ft)	—	—	✓	<u>see attached, item #6</u>
Air (outdoors)	—	✓	—	<u>see attached, item #7</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.

✓_____ 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):

See attached page

 ("Unknowns" are carried through with "Yes" determinations to ascertain what information is needed or if risks are negligible.)

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.

1. Groundwater – YES

REFERENCE: “Monitoring Well Installation” from the Department to the facility dated June 27, 2001; existing groundwater monitoring data from site monitoring wells.

RATIONALE: Monitoring wells located to detect a release from the surface impoundments closed by capping are also located to adequately evaluate the effect of SWMUs and AOCs on groundwater quality at the facility.

The results of the 22 sampling events conducted using these wells at the facility indicated that recent measured groundwater concentrations in two downgradient wells statistically exceed residential risk-based standards (the MCL for chromium and the ACL for nickel). The total chromium concentration in monitoring well MW-8 has shown an increasing trend for the past several sampling events.

This increase in inorganic concentrations has been attributed to increasing sample turbidity directly related to the current drought conditions affecting groundwater quantity in the shallow wells. This increase cannot be conclusively attributed to plume development or migration at this time. Therefore, the Department and the facility agreed that once the new wells were installed (and they have been), previous data would be appropriately weighted in the evaluation of groundwater contamination at this site. Therefore, although previous data indicated the presence of a potential inorganic contaminant plume, there is no conclusive evidence of contaminant plume development or migration at this time at this facility.

This determination shall be reevaluated following the analysis of samples from the wells installed in September 2002 and annually thereafter.

2. Air (indoors) – NO

REFERENCE: *Annual Groundwater Monitoring Report for 2001*; Sterling Casket Hardware Co., Inc. (Donn Bailey), January 16, 2002.

RATIONALE: Data from last 6 groundwater sampling events (Apr 98, Apr 99, Apr 00, Oct 00, Apr 01, and Oct 01) have found detectable levels of VOCs (1,1,1-trichloroethane and phenols) in the groundwater. However, the highest level of 1,1,1-trichloroethane ever detected (0.027 ppm at Well 3) is 2 orders of magnitude lower than the current RBC tapwater level (3.2 ppm). Also, the only detection of phenols (0.057 ppm at Well 8) is 3 orders of magnitude lower than the RBC tapwater level (22 ppm). Therefore, it can be reasonably assumed that such low levels of VOCs in groundwater would not result in VOCs concentrations in indoor air that are above acceptable risk levels.

3. Surface Soil – YES

REFERENCE: *Draft Soil Sampling Report, Sterling Casket Hardware Site*; September 9, 2002

RATIONALE: EPA III residential RBC levels for Ni and Cu are 1,600 ppm and 3,100 ppm, respectively. There is an abandoned wastewater sump on the northwest side of the manufacturing building that is currently backfilled to surrounding grade. Soil located within the sump were sampled in July 2002 and showed levels of 1,820 ppm Ni and 3,550 ppm Cu.

The EPA III industrial RBC level for As is 3.8 ppm. All surface and sub-surface samples (including those from a background location) exceed this level. The levels of As are fairly consistent throughout the site (1.7-19.8 ppm). Although there is no reason at this time to consider these levels to be anything other than background artifacts, additional studies will be conducted under the Facility Lead Agreement to confirm whether or not these levels of As are naturally occurring.

4. Surface Water – NO

REFERENCE: *Stabilization Initiative Inspection Report for the Sterling Casket Hardware Company*; U.S. EPA, Region III; September 1995; Section II.B.3.

RATIONALE: Drainage swales are located around the facility for run-off/run-on control. There is no surface water in or near the facility.

5. Sediment – NO

REFERENCE: Site visit conducted by the Department on July 15, 2002.

RATIONALE: Drainage swales located around facility remain dry and vegetated, therefore, there is no sediment in or near the facility.

6. Subsurface Soil – IN

REFERENCE: *Draft Soil Sampling Report, Sterling Casket Hardware Site*; September 9, 2002

RATIONALE: No subsurface (>2 ft bgs) sample results exceed EPA III residential RBC levels. However, SWMU No. 7 (Closed Areas 1 and 2/Surface Impoundments #s 1 and 2) did not clean close (wastes solidified in-place and concrete tanks/ditches debris placed as fill). The levels of F007, F008, and D003 constituents remaining in the wastes and soils at SWMU 7 are not known.

7. Air (outdoors) – NO

REFERENCE: *Annual Groundwater Monitoring Report for 2001*; Sterling Casket Hardware Co., Inc. (Donn Bailey), January 16, 2002.

RATIONALE: Data from last 6 groundwater sampling events (Apr 98, Apr 99, Apr 00, Oct 00, Apr 01, and Oct 01) have found detectable levels of VOCs (1,1,1-trichloroethane and phenols) in the groundwater. However, the highest level of 1,1,1-trichloroethane ever detected (0.027 ppm at Well 3) is 2 orders of magnitude lower than the current RBC tapwater level (3.2 ppm). Also, the only detection of phenols (0.057 ppm at Well 8) is 3 orders of

magnitude lower than the RBC tapwater level (22 ppm). Therefore, it can be reasonably assumed that such low levels of VOCs in groundwater would not result in VOCs concentrations in outdoor air that are above acceptable risk levels.

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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

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

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):

Groundwater - see attached page, Item #1

Soil (surface) - see attached page, Item #2

Soil (subsurface) - see attached page, Item #3

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

1. Groundwater

REFERENCE: All available information within the Department files.

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility.

Workers

NO – Water for plant production and worker use is provided by a local public supply system, and the intakes for the system are located more than 3 miles from the facility. Access to groundwater monitoring wells are controlled by lock and key. Therefore, workers cannot be exposed to groundwater from the facility.

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – The closest depth to groundwater is approximately 60-70 feet below ground surface (BGS). As most construction activities never exceed 10-15 feet BGS, it is highly unlikely that any contact with groundwater will occur.

Food

NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

2. Soil (surface)

REFERENCE: All available information within the Department files.

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility.

Workers

NO – The facility has implemented a temporary measure which covers and restricts access to the abandoned wastewater sump and has also installed warning signs to prevent disturbance of the area. There is no potential for particulate exposure. This area will be addressed (most likely, excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – The facility has implemented a temporary measure to restrict access to the abandoned wastewater sump and installed warning signs to prevent disturbance of the unit. This unit will be addressed (most likely, excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Trespassers

NO – The facility has implemented a temporary measure to restrict access to the abandoned wastewater sump and installed warning signs to prevent disturbance of the unit. This unit will be addressed (most likely, excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Recreation

NO – There is no information indicating the presence of recreational facilities or attractions (e.g., nature trails, surface water for swimming/boating, etc.) on the facility.

Food

NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

3. Soil (subsurface)

REFERENCE: All available information within the Department files.

RATIONALE:

Construction

NO –

As stated previously, SWMU No. 7 (Closed Areas 1 and 2/Surface Impoundments #s 1 and 2) did not clean close, and the levels of F007, F008, and D003 constituents remaining in the wastes and soils at SWMU 7 are not known. Two hazardous waste landfill caps have been installed over the contaminated soils and fill materials. A post-closure care order prohibits any disturbance of the caps. Based on current information, no other areas of subsurface soil contamination are present at the site.

Food

NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

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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 (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 Sterling Casket Hardware Company, Inc. facility, EPA ID # VAD000020115, located at Abingdon, VA 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 (original signed 9/27/02)
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(title) Env. Engr. Sr.

Supervisor (original signed 9/27/02)
(print) Debra A. Miller
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(EPA Region or State) VA DEQ

Locations where References may be found:

VA Department of Environmental Quality, Office of Waste Permitting files

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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.