

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### RCRA Corrective Action Environmental Indicator (EI) RCRAInfo Code (CA725) Current Human Exposures Under Control

**Facility Name:** Clean Harbors BDT, LLC (BDT)  
**Facility Address:** Research Parkway, Clarence, NY 14031  
**Facility EPA ID #:** NYD000632372

#### **BACKGROUND**

The BDT facility treated reactive hazardous wastes, pressurized waste, pharmaceuticals and packaged laboratory chemicals. The BDT facility was initially owned and operated by Wilson-Greatbatch, Inc. It was subsequently sold to Laidlaw Environmental Services, then to Safety Kleen, Inc., and finally to Clean Harbors BDT, LLC. Residues from treatment were disposed off-site. All of the waste storage areas included a sealed concrete floor, secondary containment, and a collection system to eliminate release of hazardous material to surrounding areas and to contain any release for prompt cleanup. The operating record indicates that there were no releases of hazardous waste or hazardous waste constituents beyond the secondary containment structures during operation of the facility. However, on August 14, 2002, a fire occurred at the BDT facility. During the course of the fire, the fire consumed large portions of the waste stored at the facility. All remaining waste was removed by March 14, 2003.

As a result of the firefighting efforts, approximately 140,000 gallons of water were applied to the fire. The firefighting water that ran off from the fire accumulated in site swales, depressions, and low-lying structural features such as the loading dock. Approximately 80,000 gallons of the total amount of water were recovered and shipped off-site for disposal. Based upon analytical data, this water was classified as non-hazardous. The remaining 60,000 gallons of water were either released as steam during the fire or infiltrated the soil.

On August 15, 2002, samples of the firefighting water were collected at various locations and the sample results were compared to USEPA and NYSDEC groundwater screening criteria. A Screening-Level Evaluation of the Potential Effect of Firefighting Water on Groundwater Quality Report was completed by ENVIRON which concluded that the firefighting runoff water did not present a short-term or long-term threat to public health or the environment via the groundwater pathway.

An Order on Consent between BDT and the NYSDEC required BDT to submit a RCRA Facility Investigation (RFI) workplan to complete an assessment of the nature and extent of contamination associated with the soil and groundwater. BDT completed the RFI in September 2005. The NYSDEC and NYS Department of Health (NYSDOH) approved of the RFI in December 2005. The NYSDEC and NYSDOH determined that as a result of the soil and groundwater sampling and soil removal activities, no further action was required.

#### **Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EIs) 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 EIs 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.

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**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 EIs 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" EIs 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 Determination 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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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 is not available skip to #6 and enter "IN" (more information needed) status code.

**Rationale**

A RCRA Facility Investigation for Clean Harbors BDT, LLC was completed in September 2005 and approved by the NYSDEC and NYSDOH in December 2005. The BDT hazardous waste facility in Clarence, NY experienced a fire on August 14, 2002 and ceased operations. An Order on Consent between the NYSDEC and BDT required BDT to perform a RCRA Facility Investigation. An RFI Work Plan (July 2004) was developed and was implemented in November 2004. RCRA closure activities were also implemented. Site field work concluded in August 2005. The major components of the field work included: demolition and removal of the structures of the operating portion of the facility in May 2005, soil removal to bedrock at the hydrolysis sump Area of Concern (AOC), and soil removal where ponded firefighting water collected.

Groundwater monitoring wells were installed in the overburden and bedrock to assess the groundwater quality. Soil sampling was performed in areas where firefighting water accumulated to determine if there were any impacts to the soil. Additional soil samples were collected from beneath the concrete slab of the operating portion of the facility. Two temporary groundwater wells were installed beneath the concrete slab to assess the groundwater conditions beneath the operating portion of the facility. Firefighting water was also collected after the fire to determine the water quality. All of the firefighting water that was collected (approximately 80,000 gallons) was disposed off-site as a non-hazardous waste.

Corrective action was required at the hydrolysis sump AOC. An area of approximately 700 square feet was excavated to depths up to 8 feet (top of bedrock). Excavation continued until all visibly stained soil was removed. Soil and groundwater samples were obtained to confirm all contaminated soils were removed that were associated with this AOC.

Several locations from the shallow soil (0-2") sampling program showed an impact from the firefighting water that collected in shallow depressions. In the areas that were impacted by the firefighting water, the upper 3-4 inches of soil were removed and replaced with clean soil. After the initial removal, confirmation sampling was done at depths from 3-6", 6-9", and 9-12" below the original grade. At a few locations, additional soil was excavated at depths below the original top 3-4 inches. Approximately 260 cubic yards of soil were removed from the areas that were impacted by the firefighting water.

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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)?

	YES	NO	?	Rationale/Key Contaminants
Groundwater	X			
Air (indoors) <sup>2</sup>		X		No volatile components were found in soil
Surface Soil (e.g., <2 ft)		X		Approximately 367 yd <sup>3</sup> of contaminated soil was removed and disposed off-site
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)		X		
Air (outdoors)		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.

  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):**

Monitoring wells were installed in the overburden and bedrock to assess the groundwater quality associated with the BDT facility. No volatile organic compounds were detected above the TAGM standards. No semi-volatile compounds were detected above NYSDEC GA standards. Manganese, magnesium, antimony, and selenium slightly exceeded NYSDEC GA standards at several wells. Arsenic was detected above NYSDEC GA standards at two wells, MW-2

<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) suggests 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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(overburden well) and MW-5 (bedrock well). Arsenic did not exceed the TAGM soil standards at any location. The locally elevated arsenic levels may have been due to a release from the hydrolysis sump AOC (impacted soils were removed) or may be from naturally occurring conditions. Due to the Arsenic levels being only slightly elevated, the lack of an exposure pathway, and no definitive connection to facility operations or the fire, no corrective action or long term monitoring was required.

- 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>“Contaminated” Media</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	NO	NO		---	---	
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	NO	NO	---	---	NO	NO	NO
Sediment	NO	NO	---	---	NO	NO	NO
Soil (subsurface e.g., >2 ft)	---	---	---	NO	---	---	NO
Air (outdoors)	NO	NO	NO	NO	NO	---	---

Instructions for Summary Exposure Pathway Evaluation Table:

- 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).

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

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\_\_\_\_\_ 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

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)?

  X   If no (exposures cannot 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

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.

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<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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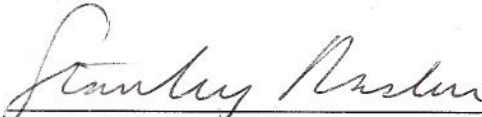
\_\_\_\_\_ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

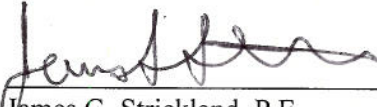
6. Check the appropriate RCRAInfo status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

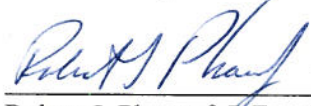
**YE** - Yes, "Current Human Exposures Under Control" have been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Clean Harbors BDT, LLC** facility, EPA ID # **NYD000632372**, located at **Research Parkway, Clarence, New York** 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:  Date: 2/12/10  
Stanley F. Radon, CPG  
Senior Engineering Geologist  
NYSDEC Region 9

Supervisor:  Date: 2/16/10  
James G. Strickland, P.E.  
Regional Hazardous Materials Engineer  
NYSDEC Region 9

Director:  Date: 2/19/10  
Robert J. Phaneuf, P.E. - Acting Director  
Bureau of Hazardous Waste and Radiation Management  
Division of Solid and Hazardous Materials  
NYSDEC Albany

**Locations where references may be found:**

New York State Department of Environmental Conservation  
Region 9 Office  
270 Michigan Avenue  
Buffalo, New York 14203-2915

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**Contact telephone number and e-mail:**

Mr. Stanley Radon  
(716) 851-7220  
[sfradon@gw.dec.state.ny.us](mailto:sfradon@gw.dec.state.ny.us)

**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.**