DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name:	**Beazer East Inc. (formerly Koppers)**
Facility Address:	**1000 Presto-Sygan Road, Bridgeville, PA 15017**
Facility EPA ID #:	**PAD 063 764 898**

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?

  _X_ 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).

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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	x			VOCs, SVOCs, and heavy metal detected in groundwater.
Air (indoors)[2]		x		The facility has indoor controls and is in compliance with OSHA. The groundwater plume is contained onsite and therefore, potential offsite vapor intrusion does not apply.
Surface Soil (e.g., <2 ft)	x			Surface soil samples indicate levels of Semi-Volatiles and VOCs.
Surface Water		x		Additional investigation concluded no significant impact.
Sediment		x		Additional investigation concluded no significant impact.
Subsurf. Soil (e.g., >2 ft)	x			Additional samples indicate levels of concern.
Air (outdoors)		x		Emission controls in place.

____ 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.

[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.

Rationale and Reference(s):

Groundwater:
Groundwater investigations have detected several constituents of concern above EPA Region 3 Risk-Based Concentrations (RBCs). Some of the constituents are listed below with their respective concentrations. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, April 2003 Groundwater Sampling Event)*

	RBCs (ug/L)	Detected Conc. (ug/L)
Methylene Chloride	4.1	100-150
Napthalene	1,500	4,600
Maleic Anhydride	3,700	3,900-24,000
Phthalic Anhydride	73,000	2,000,000
Vanadium	260	320-440
Benzene	5.0	6.3

Surface Water:
The Streamlined Risk Evaluation and additional surface water sampling at Millers Run and Chartiers Creek in 2002 and 2003 conclude that surface water quality is not significantly impacted. The following are levels detected in surface water for the constituents of concern. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02)*

	Constituent Stds. (ug/L)	Detected Conc. (ug/L)
Ethylbenzene	3,100	ND
Methylene chloride	4.7	5
Vanadium	19.1	1.2
Formaldehyde	436	33
Phthalic Acid/Phthalic Anhydride	73,000	2,100

ND: non-detect

Sediment:
In 2002, Beazer East Inc. collected several sediment samples for the constituents of concern along Chartiers Creek and Millers Run. The data indicate that sediment is not impacted. The following are levels detected in sediment for some of the constituents of concern. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02)*

	Sediment Benchmarks (ug/kg)	Detected Conc. (ug/kg)
2- Chloronapthalene	417	ND
2- Methylnapthalene	670	110
4- Methylphenol	670	ND
bis (2-Ethylhexyl) phthalate	750	ND
Carbazole	140	54
De-n-butyl phthalate	11,000	ND
Debenzofuran	32,000	50
Vanadium	91,000 mg/kg	24 mg/kg

Air (indoors):
The facility has several indoor air controls and monitors to ensure that indoor air quality meet OSHA requirements. The groundwater plume is contained within the facility property. Therefore, offsite residential vapor intrusion is not a concern. *(EI Report 2/00)*

Air (outdoors):
The facility has air emission controls in place. Currently there are no records of suspected releases that are above protective risk-based "levels" by the facility. *(EI Report 2/00)*

Surface Soil:
The facility collected approximately 35 surface soil samples from areas of concern throughout the site. Five out of the thirty-five soil samples from dispersed locations exceed EPA Risk Based Concentrations (RBCs) for some of the constituents of concern. The following are the constituents and the corresponding levels.

	RBCs (ug/kg)	Detected Conc. (ug/kg)
Benzo(a)pyrene	390	410 - 6,600
Hexachlorobenzene	3,600	18,000

(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, Additional Soil Sampling 2003)

Subsurface Soil:
Three out of the twenty-four soil samples from dispersed locations exceed EPA RBCs for some of the constituents of concern. The following are levels detected in subsurface soil for the constituents of concern.

	RBCs (ug/kg)	Detected Conc. (ug/kg)
Benzo(a)pyrene	390	2,900
Benzo(b)fluoranthene	7,800	19,000
Hexachlorobenzene	3,600	240,000

(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, Additional Soil Sampling 2003)

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	No	No	No	No			No
~~Air (indoors)~~	___	___	___				
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
~~Surface Water~~	___	___			___	___	___
~~Sediment~~	___	___			___	___	___
Soil (subsurface e.g., >2 ft)				No			No
~~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.

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.

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

Rationale and Reference(s):

Groundwater:
Based on the groundwater and surface water results, the groundwater plume appears to be contained within the facility property line. The closest receptors are two residential wells located approximately two miles upgradient of the facility. Therefore, human exposures to groundwater contaminants from the Beazer East site are unlikely. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, April 2003 Groundwater Sampling Event)*

Surface Soil (< 2 ft.):

Five discreet surface soil samples exceed EPA Risk-Based Concentrations (RBCs). These samples are randomly dispersed in a field of numerous surface soil samples that are within the regulatory standards for industrial use. The five exceedances are located in inactive units that are no longer used. Relative to the entire soil sampling results, these five exceedances are minor and pose minimal human exposures. At this time, EPA determines that direct human exposures to these five discreet locations are insignificant and do not present a health risk concern. The facility will implement additional protective measures that may include regrading, top covering or fencing in these areas to further reduce direct human exposures. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, Additional Soil Sampling 2003)*

Subsurface Soil (> 2 ft.):

Three discreet subsurface soil samples exceed EPA RBCs levels. The locations of these exceedances are covered by surface soil (refer. surface soil section) and therefore, direct human exposures to contaminated subsurface soil is minimal. *(EI Report 2/00, Facility Lead Agreement Site Characterization Report 7/02, Additional Soil Sampling 2003)*

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):

[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.

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):

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):

X 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 **Beazer East Inc. (formerly Koppers)** facility, EPA ID # **PAD 063 764 898**, located at **1000 Presto-Sygan Road, Bridgeville, PA 15017** 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)	/s/	Date 8/26/03
	(print)	Khai M. Dao	
	(title)	RCRA Project Manager	

Supervisor	(signature)	/s/	Date 8/26/03
	(print)	Paul Gotthold	
	(title)	Branch Chief, RCRA Corrective Action, PA Operations	
	(EPA Region or State)	Region 3	

Locations where References may be found:

US EPA
Region III
Waste and Chemcial Mgmt. Division
1650 Arch Street
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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.