DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Koppers Inc.
Facility Address:	50 Koppers Lane, Montgomery, Pennsylvania
Facility EPA ID #:	PAD 056 723 265

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 Controls" 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)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater		X		Three facility monitoring well networks, the S-series, M-series and R-series wells: VOCs and SVOCs.
Air (indoors)[2]		X		Koppers Inc., the current facility owner, operates under a Title V Permit and a State Only Operating Permit.
Surface Soil (e.g., <2 ft)	X			*Soil Sample Summary Report.* Semi-volatile Organic Compounds (SVOCs)
Surface Water		X		The closest surface body of water is a retention pond (Duck Pond) that receives stormwater runoff and cooling water from the co-generation plant.
Sediment		X		The closest surface body of water was a retention pond (Duck Pond) that received stormwater runoff and cooling water from the co-generation plant.
Subsurface Soil (e.g., >2 ft)		X		*Groundwater Quality Assessment Report, Act 2 Final Report Closed Surface Impoundment, and Soil Sample Summary Report.* SVOCs.
Air (outdoors)		X		Koppers operates under a Title V Permit and a State Only Operating Permit.

_____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support 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):

In 2008, EPA was contacted by MACTEC Engineering and Consulting, Inc. regarding the property referred to as "Koppers (River Valley Commerce Park South)," hereinafter referred to as the Parcel. This property is adjacent to the current Koppers, Inc. (Koppers) operational facility. After reviewing the information in EPA's files, EPA determined that Koppers Company, Inc. (now known as Beazer East, Inc. (Beazer) sold the Parcel sometime in the early 1980's. However, the Parcel was included in the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit for the Facility, and, therefore, is subject to

[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.

RCRA Corrective Action. Further research indicated that this Parcel was solely used as agricultural land and never utilized by Koppers Company, Inc. or Koppers as part of the facility operations. Based on this information and site conditions, there is no evidence to reasonably suspect that any media are contaminated above appropriately protective risk-based levels from releases subject to Corrective Action and, therefore, EPA does not anticipate taking any further actions under RCRA at the Parcel.

This Environmental Indicator was prepared to describe current conditions at the 109 acre operating portion of the facility where identified SWMUs, RUs and/or AOCs have been documented.

Groundwater

In November 1981, Koppers Company, Inc., installed a RCRA Interim Status Groundwater Monitoring System in the vicinity of the now closed surface impoundments. Monitoring well R-1 was installed in a presumed upgradient location and three wells (R-2, R-3 and R-4) in presumed down gradient locations.

In October 1982, during a Groundwater Quality Assessment field investigation, four new monitoring wells (M-1, M-2, M-3 and M-4) were installed around the perimeter of the impoundments. Monitoring well M-1 was installed upgradient of the impoundments and wells M-2, M-3 and M-4 were installed downgradient of the impoundments.

The closure of the former surface impoundments was completed by Beazer in 1988-1989. As part of the closure, groundwater was monitored through 2006. For purposes of Clean Closure demonstration to PADEP, additional monitoring wells were installed and quarterly sampling and analysis was completed from 2004-2006. In November 2006, Key Environmental, Inc. submitted an Act 2 Final Report for the Closed Surface Impoundment. This report was demonstrated attainment of the Act 2 State-Wide Health Standard (SWHS) for surface impoundment subgrade soil and groundwater downgradient of the surface impoundment, and therefore, demonstrated clean closure of the impoundment. Clean Closure was approved by PADEP on January 9, 2007.

A former spray irrigation field operated from 1972 to 1988. During a subsurface investigation in November 1981, five groundwater observation wells, known as the S-series wells (S-1, S-2, S-3, S-4 and S-5), were installed within and adjacent to the spray field. On June 10, 1988, on behalf of Beazer, Keystone Environmental Resources, Inc., submitted a Closure Plan to PADEP for the spray irrigation field. Closure consisted of connecting the spray irrigation system to a potable water source and operating the spray system for eight hours in order to flush the distribution lines and spray heads. Groundwater sampling and analysis was conducted from 1988-1989. After an April 30, 2008 meeting at the Facility between EPA, PADEP, Beazer, and Koppers these data were forwarded to EPA by Key Environmental. These sampling data for groundwater indicate that there is no impact above either EPA's or PADEP's cleanup standards in the former sprayfield area.

Surface and Subsurface Soils

In June 1990, Keystone Environmental Resources, Inc. prepared a Closure Documentation Report for the Container Storage Facility. This report contains documentation of the closure activities verifying that the container Storage Facility was closed in accordance with the approved Closure Plan EPA ID# PAD 056723265 dated Revised September 24, 1987.

Approximately 2,300 tons of sludge liner material and subsoils were removed during closure of the surface impoundments. The Act 2 Final Report demonstrated attainment of the Act 2 State-Wide Health Standard (SWHS) for subgrade soil and groundwater, and therefore, demonstrated clean closure of the

impoundment. Clean Closure was approved by PADEP on January 9, 2007.

After one week following the flushing, soil samples were to be collected from 0 to 1.5 feet in depth at four locations within the sprayfield. These samples were analyzed for Appendix VII K001 constituents. Results of these soil samples are not available. Therefore, Beazer performed post-operational soil quality sampling for the former sprayfield area. As described in the 2010 Soil Sample Summary Report, four surface soil samples were collected from the former sprayfield and submitted for analysis of Target Compound List SVOC's. No impact above either EPA's or PADEP's cleanup standards was observed.

Drip Tracks have operated from 1971 to the present. In 1990, 10,000 tons of visibly contaminated soil was removed and disposed off-site by Beazer during the construction of a concrete liner. Although no confirmatory sampling was performed, this action satisfies Corrective Action by eliminating a source and any potential exposure route. Monitoring of the unit was essentially included in the series of wells used for monitoring the surface impoundments due to the groundwater flow direction. No impact to groundwater is suspected from this unit. Furthermore, this unit is covered by PADEP regulations and will have to meet regulatory closure and post-closure requirements at site closure.

There have been two reported releases from an aeration basin as described in the Final EI Report. The exact locations of the releases are not known. To address these releases, soil samples were collected from the 0 to 2 foot and 2 to 4 foot intervals at four locations surrounding the aeration basin. No impact above either EPA's or PADEP's cleanup standards was observed. The results are available in the Soil Sample Summary Report from April 2010.

The Final EI Report also referenced an inspection by PADEP in 1987 that noted surface soils at the unloading area were potentially impacted by creosote drippage. Subsequently, additional paving for rail car and a concrete containment for hazardous waste storage was completed in this area. Potentially impacted soils were removed for off-site disposal during these two construction events. However, there was no indication of confirmatory soil sampling and EPA requested that Beazer further investigate this area which was combined into the Tank Farm Area/Creosote Unloading Area/Hazardous Waste Area. On June 3, 2009, 6 soil borings were collected. Additionally, 5 sample locations were advanced to delineate the vertical and horizontal extent of potentially impacted soils at one location (GP09-4). The next sample location topographically downgradient from GP09-4 showed similar olfactory/staining/elevated PID readings, therefore, Beazer decided not to collect a sample and deem this location duplicative of the GP09-4 analysis. This results is an approximately 1000 square foot area with shallow soils (<2 feet) impacted by Benzo(a)anthracene and Benzo(a)pyrene above PADEP's non-residential Direct Contact cleanup standard. The remaining sample results were all below EPA's and PADEP's residential cleanup standards.

Air (indoors and outdoors), surface water, and sediments

There is no evidence to reasonably suspect that either air media, surface water, or sediments are contaminated above appropriately protective risk-based levels from releases subject to Corrective Action.

No documentation was found indicating that a release, sampling, or remediation has occurred relating to any other SWMU, RU, or AOC. Therefore, there is no evidence to reasonably suspect that any media in these areas is contaminated above appropriately protective risk-based levels from releases subject to Corrective Action.

The following references apply to this and the remaining sections of this indicator:
1. RCRA Facility Assessment (RFA) Phase II Report, A.T. Kearney, Inc., 1986

2. Closure Plan for the Spray Irrigation Field, Keystone Environmental Resources, Inc., June 10, 1988

3. Closure Documentation Report for the Container Storage Facility, Keystone Environmental Resources, Inc., June 1990

4. Groundwater Quality Assessment Report, The Retec Group, Inc., November 13, 2003

5. Environmental Indicator Inspection Report, Tetra Tech FW, Inc., December, 2003

6. Act 2 Final Report for the Closed Surface Impoundment, Key Environmental, Inc., October 2006

7. Soil Sample Summary Report, Key Environmental, Inc., April 30, 2010

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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

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)	No	No	No	Yes	No	No	No
~~Surface Water~~							
~~Sediment~~							
~~Soil (subsurface e.g., >2 ft)~~							
~~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.

Rationale and Reference(s):

The only media at the facility known to be contaminated above EPA's standards is surface soils near the former hazardous waste storage area/creosote unloading area/tank farm area. The contaminated soil covers a roughly 1000 square foot area extending from 0 to 4 feet in depth. On September 16, 2010 Beazer forwarded confirmatory photos, a map of the area, and soil boring logs showing that coarse road base/gravel material covers the entire area of contamination and precludes potential direct contact with the underlying soils in the GP09-4/4A area. This "cap" eliminates inadvertent accidental exposure to the soils, thus making this pathway incomplete under the current conditions except for construction workers. The Soil Sample Summary Report identified direct contact to contaminated surface soils by the site worker as a potentially complete exposure pathway. EPA considers this pathway incomplete due to the cap but still considers the construction workers pathway to be potentially complete.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"** (i.e., potentially[3] " unacceptable" levels) 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 (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):

Beazer performed a streamlined risk assessment to provide an indication of the potential risks associated with the contaminated soils from site workers. The risk assessment concluded that future potential contact with the contaminated soil will not pose unacceptable risks. As discussed in Question 3, it was verified that a gravel layer exists above the contaminated soil effectively eliminating the pathway except for construction workers. If the gravel layer was to be compromised and exposure to the soil was to occur, the risk assessment concludes that exposure would not result in harm to human health. Since the exposure frequency and duration would be less for a construction worker than a site worker, potential exposure by construction workers can not reasonably expected to be significant.

[3] 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 a "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 a "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):

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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):

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 Koppers Inc. facility, EPA ID # PAD 056 723 265, located at 50 Koppers Lane Montgomery, PA under current and reasonably expected conditions. This determination will be re-evaluated if 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)  Date 11/4/10

(print) Kevin Bilash

(title) RCRA Project Manager

Supervisor: (signature)  Date 11-16-10

(print) Paul Gotthold

(title) Associate Director, Office of PA Remediation

(EPA Region or State) Region 3

Locations where References may be found:

All reference documents are appended to the Environmental Indicator Final Report, which can be found at the PADEP North Central Records Office (in Williamsport) or USEPA Region III Records Office (in Philadelphia).

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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.

EPA ID #: PAD 056 723 265
Location: 50 Koppers Lane Montgomery, Pennsylvania

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)