

GRENADA COUNTY - TIE PLANT MS  
KOPPERS INC  
HSPA  
MSD007027543  
2000-----2005

AI 00876



M. Rao



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

FEB 26 2003

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MAR - 3 2003  
U.S. Environmental Protection Agency  
Office of Pollution Control

4WD-RPB

Mr. Michael W. Bollinger  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219

SUBJ: Interim Measures SWMU 11  
Documentation Report  
Dated, September 29, 2000  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has reviewed the Interim Measures Documentation Report for SWMU 11, dated, September 29, 2000 of Koppers/Beazer's, Tie Plant, Mississippi. Enclosed are the comments which are identified during the evaluation of this document. Please send your response to these comments to EPA and MDEQ, within forty-five (45) calendar days after the receipt of this letter.

If you have any question(s), please contact Mr. Harbhajan Singh of my staff at (404) 562-8473.

Sincerely,

Narindar M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

CC: Timothy Basilone, Koppers Industries/Pittsburgh  
Peter Rich, HSI GeoTrans/Sterling  
Jennifer Abrahams, HSI GeoTrans/Rancho Cordova  
Jerry Cain, MDEQ/Jackson

**Koppers Industries/Beazer's East, Tie Plant, Mississippi**  
**EPA I.D. No. MSD 007 027 543**  
**Interim Measures Documentation Report for SWMU 11**  
**Dated, September 29, 2000**

**1. Page 9, Paragraph 3; Page 10, Paragraphs 3 & 4**

The facility stated that the sediments were excavated to remove the visually impacted material or to a maximum of five (5) feet followed by backfilling with an equal amount of clean material. Why had the facility not collected the confirmatory sediment samples after the sediment excavation of the off-site Central Ditch? How had the facility concluded the complete removal of contaminated sediments from the off-site Central Ditch? The facility needs to demonstrate the complete removal of contaminated sediments from the off-site Central Ditch. This can include the collection of at least 2-4 confirmatory sediment samples below a depth of backfilling and analyze for the site-specific constituents. The facility may propose any other option(s) or plan to demonstrate the complete removal of contaminated sediments from the off-site Central Ditch.

**2. Page 21, Paragraph 1; Figure 11; Appendix P**

The DNAPL is being recovered from the five (5) recovery wells and nine (9) under-drain sumps from the Central Ditch. The DNAPL recovery protocol is epitomized in Appendix P. Please quantify in gallons the recovery of DNAPL from the five (5) recovery wells and nine (9) under-drain sumps in years 2000, 2001 and 2002, respectively. How is the recovered DNAPL disposed?

**3. Appendix Q, Inspection Checklist**

The facility should complete the sediment disposal area cap and Central Ditch Inspection Checklist of Appendix Q once in a year, including specific comments, observations and maintenance activities.

*M. Lao*



3035 Prospect Park Drive  
Suite 40  
Rancho Cordova, CA 95670-6070

www.geotransinc.com

916-853-1800 FAX 916-853-1860

April 17, 2003

P:\PROJECTS\BEAZER\GRENADA\432\tran\_3\_03\_ltr.doc

RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

RECEIVED  
APR 21 2003  
U.S. Environmental Quality  
Management Council

Attn: Mr. Narinda M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

Subject: Results of Soil Characterization  
Vicinity of the Former "Creosote Hole"  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

On behalf of Beazer East, Inc., this letter presents the technical memorandum documenting the results of soil characterization at the Koppers Industries, Inc. facility in Grenada, Mississippi. The field work and submittal of this memorandum are in accordance with the June 5, 2002 *Workplan to Characterize Soil in the Vicinity of the Former "Creosote Hole", Koppers Industries/Beazer East, Inc., Tie Plant, Mississippi*, approved by the United States Environmental Protection Agency on January 10, 2003.

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864.

Sincerely,

GEOTRANS, INC.

Jennifer A. Abrahams, R.G.  
Project Manager

cc: Doug McCurry, EPA  
Jerry Cain, MDEQ  
Mike Bollinger, Beazer

Tim Basilone, KII  
Tom Henderson, KII  
Paul Anderson, AMEC



3035 Prospect Park Drive, Suite 40, Rancho Cordova, CA 95670 ■ 916 853-1800 ■ 916 853-1860 (FAX)

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## MEMORANDUM

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This technical memorandum is submitted on behalf of Beazer East, Inc. to document the results of soil characterization at the Koppers Industries, Inc. facility in Grenada, Mississippi (Site). This field work was performed in accordance with GeoTrans' June 5, 2002 *Workplan to Characterize Soil in the Vicinity of the Former "Creosote Hole", Koppers Industries/Beazer East, Inc., Tie Plant, Mississippi* (Workplan), which was approved by the United States Environmental Protection Agency (EPA) on January 10, 2003. The workplan was prepared in response to a request from the EPA.

### **OBJECTIVE**

The purpose of the March 2003 soil sampling at the Site was to further characterize the soils at the former "creosote hole" and to confirm results of previous field investigations conducted in the Central Process Area.

### **FIELD ACTIVITIES**

The field investigations were performed in accordance with sampling procedures and quality assurance objectives specified in the January 8, 1997 *RCRA Facility Investigation, Work Plan Addendum, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi*. They were also performed in accordance with a revised Health and Safety Plan issued to encompass the sampling activities described in this memorandum.

Two soil borings, FCH1 and FCH2, were drilled and sampled on March 11, 2003 to characterize the soil impacts in the vicinity of the former "creosote hole" location, as shown on Figure 1.

Two soil samples were collected for analysis from each boring. One sample was collected near the surface in native soil from one to two feet below ground surface (bgs) and the other from just above the water table, from 20 to 21 feet bgs. The samples were collected using a hollow stem auger rig by driving a split spoon sampler ahead of the bit. The samples were placed in glass jars, labeled, packed in chilled coolers, and shipped to Columbia Analytical Services of Kelso, Washington with chain-of-

Mr. Narinda M. Kumar  
U.S. Environmental Protection Agency  
April 11, 2003  
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custody documentation. The samples were analyzed for pentachlorophenol and polynuclear aromatic hydrocarbons (PAHs) by EPA method 8270 SIM and for benzene, ethylbenzene, toluene, and xylenes (BTEX) by EPA method 8021B.

The soil lithology was described from the drill cuttings, including visual evidence of creosote impacts. Strong odors and sheen on the soil particles were observed at each soil boring beginning at approximately 10 feet bgs and extending to the total depth of the boring (22 and 23 feet bgs). The soil boring logs are included as Attachment 1. Immediately after the soil samples were collected the borings were backfilled with cement-bentonite grout pumped through a tremie pipe installed to the bottom of the boring.

The drill cuttings and decontamination water were drummed and labeled. These site investigation materials will be disposed of appropriately in accordance with state and federal regulations.

## ***RESULTS AND CONCLUSIONS***

Table 1 presents the results of the pentachlorophenol and BTEX analyses and Table 2 presents the results of the PAH analysis. Pentachlorophenol was detected in three of the four soil samples, at concentrations ranging from 24 to 310 mg/Kg. Benzene was detected in the samples from FCH1 at concentrations below 1 mg/Kg; benzene was not detected in samples from FCH2. Concentrations of total xylenes ranged from below the reporting limit to 30 mg/Kg.

PAHs were detected in all four soil samples. The total PAH concentrations ranged from 3,850 to 21,967 mg/Kg, and the total potentially carcinogenic PAHs ranged from 196 to 1,375 mg/Kg. Laboratory data sheets are presented in Attachment 2.

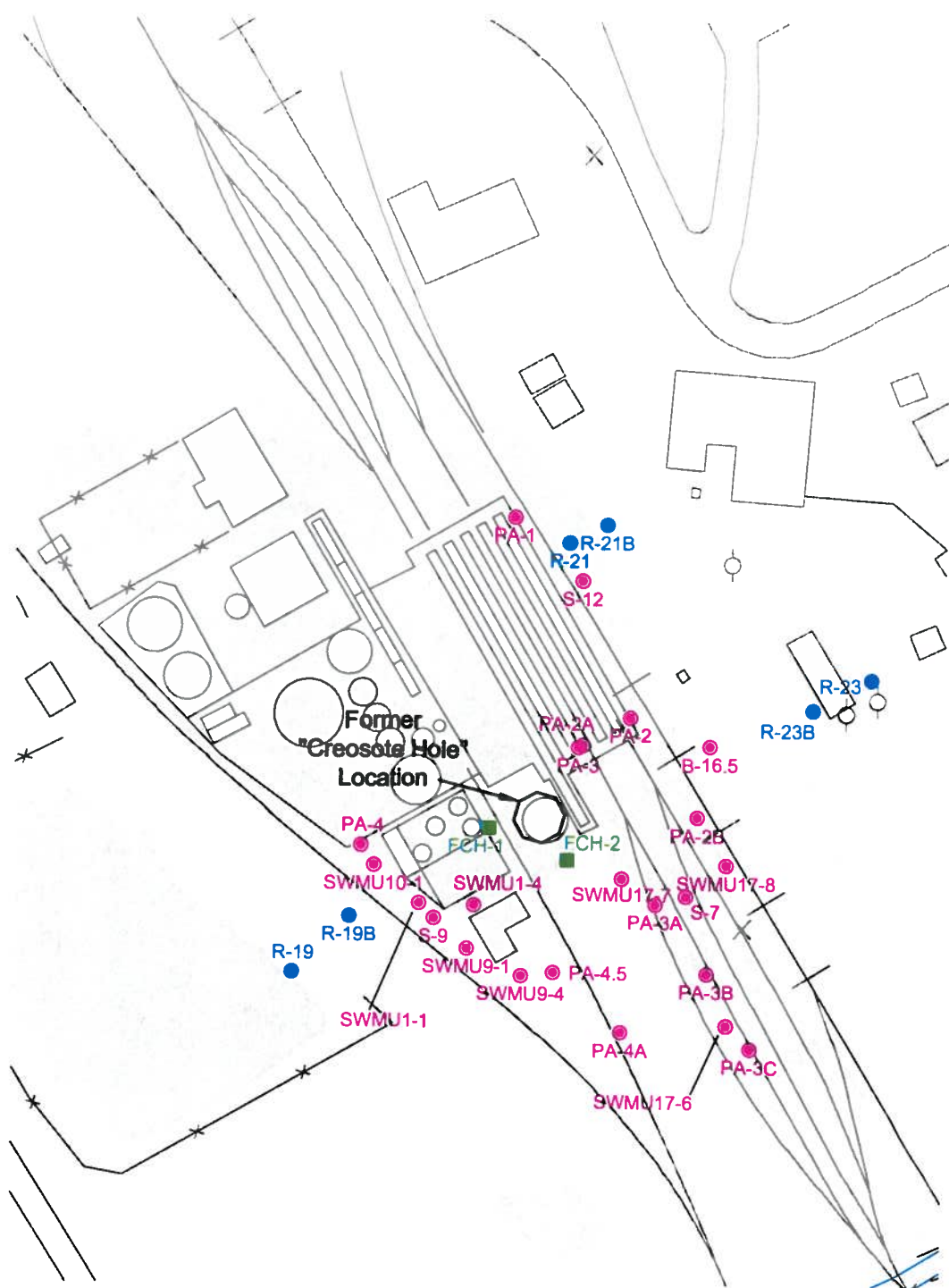
The former "creosote hole" is located within the Central Process Area, defined to be comprised of the main wood treating facilities. Pentachlorophenol, benzene, xylenes, and PAHs were detected in soil samples collected from the Central Process Area in 1991 and 1997, as discussed in the *Revised Final Phase II RCRA Facility Investigation Report* dated November 13, 1998. Pentachlorophenol was detected in the previous sampling at concentrations of up to 260 mg/Kg; benzene was detected at

Mr. Narinda M. Kumar  
U.S. Environmental Protection Agency  
April 11, 2003  
Page 3

concentrations of up to 3.7 mg/Kg; and PAHs were detected at concentrations of up to 8,813 mg/Kg. In addition, non-aqueous phase liquids and dense non-aqueous phase liquids were noted to extend from the surface to the saturated zone in many of the borings in the Central Process Area.

The analytical results of soil samples collected in 2003 at the former "creosote hole" contained concentrations of pentachlorophenol, BTEX, and PAHs that are comparable to concentrations detected in sampling conducted in 1991 and 1997. The results of the March 2003 investigation at the former "creosote hole" confirm the results of previous soil sampling conducted in the Central Process Area.





### Explanation

- Existing Monitor Well Locations
- Existing Boring Locations
- SWMU Area
- "Creosote Hole" Boring Locations

TITLE:

**Soil Borings Near  
Former "Creosote Hole" Location**

LOCATION:

Koppers Industries, Inc., Grenada, MS



**GeoTrans, Inc.**

CHECKED:	JAA
DRAFTED:	GHP
DATE:	11-09-01

FIGURE:

**1**



**Table 1**  
 Creosote Hole Soil Sampling Results  
 March 2003  
 Koppers Industries, Inc., Grenada, MS

Sample Location	Pentachlorophenol (mg/kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	m,p-Xylenes (mg/Kg)	o-Xylenes (mg/Kg)
FCH1-1-2	70	0.98	3.8	11	15	8.8
FCH1-20-21	24	0.66	4.4	19	15	15
FCH2-1-2	310	<0.57	<1.2	<1.2	<1.2	<1.2
FCH2-20-21	<19	<0.53	<1.1	1.4	2.7	2.1

**Table 2**  
Creosote Hole Soil Sampling Results  
March 2003  
Koppers Industries, Inc., Grenada, MS

Parameter	Location Date Units	FCH1-1-2 3/11/03 (mg/kg)	FCH1-20-21 3/11/03 (mg/kg)	FCH2-1-2 3/11/03 (mg/kg)	FCH2-20-21 3/11/03 (mg/kg)
PAHs					
Acenaphthene		2,500	770	580	300
Acenaphthylene		46	28	21	15
Anthracene		3,200	270	1,400	160
Benz(a)anthracene		410	120	270	59
Benzo(a)pyrene		150	45	120	25
Benzo(b)fluoranthene		170	43	160	27
Benzo(g,h,i)perylene		29	13	39	5
Benzo(k)fluoranthene		190	63	160	22
Chrysene		410	130	310	54
Dibenz(a,h)anthracene		7	4	9	2
Fluoranthene		2,300	750	1,300	300
Fluorene		2,200	610	600	300
Indeno(1,2,3-cd)pyrene		38	16	46	7
Naphthalene		570	1,500	580	1,000
Phenanthrene		4,700	1,300	1,600	800
Pyrene		2,200	560	1,100	240
Dibenzofuran		1,600	490	370	220
2-Methylnaphthalene		1,300	850	350	330
Total PAHs		21,967	7,530	8,985	3,850
Total pcPAHs <sup>(1)</sup>		1,375	421	1,075	196

<sup>(1)</sup> Total pcPAHs = Total potentially carcinogenic PAHs

***ATTACHMENT 1***

***Soil Boring Logs  
March 2003***



# GeoTrans, Inc.

BORING NUMBER FCH1

Page 1 of 1

PROJECT Beazer\Grenada

PROJECT NUMBER P432 (2201.037.01)

LOCATION Tie Plant, MS

LOGGED BY Tim Rogers

SITE LOCATION  
EASTING=  
GSENORTHING=  
DATUM

PID (ppm)	BLOW COUNT	% REC	SAMPLE DEPTH	DEPTH (ft)	GRAPHIC LOG	DESCRIPTION
				0		Concrete.
50	---	100		1		Clayey Silt: Olive gray (5Y 4/1) to very light gray (N8); interbedded, medium sand; dark stained soil with strong odor; moist. Perched water table present.
				2		
				3		
				4		
				5		
				6		
				7		Dry.
				8		
				9		
				10		
				11		Fine to medium sand with sheen; strong odors; moist.
				12		
				13		
				14		
				15		
				16		
				17		
				18		
331	---	100		19		Silty Sand: Grayish orange (10YR 7/4); well sorted sand; strong odor; moist to wet. Visible staining in sample.
				20		
				21		
				22		

HSI GeoTrans AUGER3 4/10/03

DRILLING CONTRACTOR **Anderson Engineering**  
HOLE DIAMETER **6"**  
DRILLING METHOD **HS Auger**  
DRILLING EQUIPMENT **SIMCO 2800**  
DRILLING STARTED **3/11/03** ENDED **3/11/03**

TOTAL DEPTH OF BORING (ft): **22.00**  
REMARKS: **Soil boring. Backfilled to ground surface with cement-bentonite grout.**



# GeoTrans, Inc.

BORING NUMBER **FCH2**Page **1** of **1**PROJECT **Beazer/Grenada**PROJECT NUMBER **P432 (2201.037.01)**LOCATION **Tie Plant, MS**LOGGED BY **Tim Rogers**SITE LOCATION  
EASTING=  
GSENORTHING=  
DATUM

PID (ppm)	BLOW COUNT	% REC	SAMPLE DEPTH	DEPTH (ft)	GRAPHIC LOG	DESCRIPTION
				0		Concrete.
12	---	100	X	1		<b>Clayey Silt:</b> Olive gray (5Y 4/1) to very light gray (N8); sheen and dark gray stained soil present; strong odor; moist. Perched water from 2-10 feet in depth.
				2		
				3		
				4		
				5		
				6		
				7		
				8		
				9		
				10		
19				11		<b>Silty Sand:</b> Light gray (N7) to very pale orange (10YR 8/2); fine to medium, well sorted sand; strong odor and sheen; moist to wet. Interbedded, stained lenses of sand present at 10 feet in depth.
				12		
				13		
				14		
				15		
				16		
				17		
				18		
30				19		
				20		
				21		
	---	100	X	22		
				23		

DRILLING CONTRACTOR **Anderson Engineering**  
HOLE DIAMETER **6"**  
DRILLING METHOD **HS Auger**  
DRILLING EQUIPMENT **SIMCO 2800**  
DRILLING STARTED **3/11/03** ENDED **3/11/03**

TOTAL DEPTH OF BORING (ft): **23.00**REMARKS: **Soil boring. Backfilled to ground surface with cement-bentonite grout.**

***ATTACHMENT 2***

***Laboratory Analytical Data Reports  
March 2003***

April 9, 2003

Service Request No: K2301888

Jennifer Abrahams  
GeoTrans, Inc.  
3035 Prospect Park Drive  
Suite 40  
Rancho Cordova, CA 95670

**RE: Koppers**

Dear Jennifer:

Enclosed are the results of the sample(s) submitted to our laboratory on March 13, 2003. For your reference, these analyses have been assigned our service request number K2301888.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

**Columbia Analytical Services, Inc.**



Mingta Lin  
Project Chemist

ML/cb

Page 1 of 29



### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

## COLUMBIA ANALYTICAL SERVICES, INC.

Client: Beazer East, Inc.  
Project: Koppers  
Sample Matrix: Soil

Service Request No.: KI2301888  
Date Received: 3/13/03

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory Control Sample (LCS).

#### Sample Receipt

Four soil samples were received for analysis at Columbia Analytical Services on 3/13/03. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

#### BTEX by EPA Method 8021

##### **Sample Confirmation Notes:**

The confirmation comparison criterion of 40% difference for o-Xylene was exceeded in samples FCH2-20-21 and FCH1-20-21. The higher of the two values is reported because no evidence of matrix interference was observed.

##### **Elevated Method Reporting Limits:**

The reporting limits are elevated for BTEX in all samples. The samples were diluted prior to analysis because of suspected large amounts of high boiling range hydrocarbon compounds. The chromatogram confirmed the presence of non-target hydrocarbon background components. To preserve instrument integrity, samples were not analyzed more concentrated.

##### **Surrogate Exceptions:**

The control criteria for the following surrogate in all samples are not applicable: 4-Bromofluorobenzene. The analysis of the samples required a dilution, which resulted in a surrogate concentration below the lowest point in the calibration curve. No further corrective action was appropriate.

#### Polynuclear Aromatic Hydrocarbons by EPA Method 8270C - SIM

##### **Surrogate Exceptions:**

The control criteria for the surrogates in all samples are not applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration at or below the Method Reporting Limit (MRL). The chromatogram indicated the presence of target/non-target background components that masked the surrogate, which prevented adequate resolution for quantitation. No corrective action was appropriate.

##### **Matrix Spike Recovery Exceptions:**

The control criteria for matrix spike recoveries of all analytes for sample FCH1-20-21 are not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by \_\_\_\_\_

*mtl*

Date

4/7/03

00005



An Employee-Owned Company

# CHAIN OF CUSTODY

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

SR#: 156501883

PROJECT NAME: KOPPER

PROJECT NUMBER: 2201.037.01

PROJECT MANAGER: Jennifer Abrahams

COMPANY/ADDRESS: 3035 Prospect Park Drive SE

PHONE: (360) 853-1806 FAX #

SAMPLE'S SIGNATURE: Tim Rogers

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX
FECH2-1-2	3/11/03	9:19	1	Soil
FECH2-20-21	3/11/03	9:58	2	Soil
FECH1-1-2	3/11/03	11:17	3	Soil
FECH1-20-21	3/11/03	11:45	4	Soil

NUMBER OF CONTAINERS	
Semivolatile Organics by GC/MS	625 <input type="checkbox"/> 8270 <input checked="" type="checkbox"/> 8270LL <input type="checkbox"/>
Volatile Organics	624 <input type="checkbox"/> 8260 <input type="checkbox"/> 8021 <input checked="" type="checkbox"/> BTEX <input type="checkbox"/>
Hydrocarbons (*see below)	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Oil <input type="checkbox"/>
Fuel Fingerprint (FIQ)	<input type="checkbox"/> NW-HCID Screen
Oil & Grease/TRPH	1664 HEM <input type="checkbox"/> 1664 SGT <input type="checkbox"/>
PCB's	Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/>
Pesticides/Herbicides	608 <input type="checkbox"/> 8081A <input type="checkbox"/> 8141A <input type="checkbox"/> 8151A <input type="checkbox"/>
Chlorophenolics	Tri <input type="checkbox"/> Tetra <input type="checkbox"/> PCP <input type="checkbox"/>
PAHS	8310 <input type="checkbox"/> SIM <input type="checkbox"/>
Metals, Total or Dissolved	(See list below)
Cyanide	Hex-Chrom <input type="checkbox"/>
pH, Cond., Cl, SO <sub>4</sub> , PO <sub>4</sub> , F, NO <sub>2</sub> , NO <sub>3</sub> , BOD, TSS, TDS (Circle)	
NH <sub>3</sub> -N, COD, Total-P, TKN, TOC, DOC (circle) NO <sub>2</sub> +NO <sub>3</sub>	
TOX 9020	AOX 1650 <input type="checkbox"/> 506 <input type="checkbox"/>

REMARKS
No PAES.
No PAES.
No PAES.
No PAES.

## REPORT REQUIREMENTS

- I. Routine Report: Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. Data Validation Report (includes all raw data)
- IV. CLP Deliverable Report
- V. EDD

## INVOICE INFORMATION

P.O. # \_\_\_\_\_

Bill To: \_\_\_\_\_

## TURNAROUND REQUIREMENTS

- 24 hr. \_\_\_\_\_ 48 hr. \_\_\_\_\_
- 5 Day \_\_\_\_\_
- Standard (10-15 working days)
- Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

\*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: \_\_\_\_\_ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

## RELINQUISHED BY:

Signature: Tim Rogers Date/Time: 3/11/03 17:20  
Printed Name: Tim Rogers Firm: C&S

## RECEIVED BY:

Signature: [Signature] Date/Time: 3/13/03 10:00  
Printed Name: [Name] Firm: C&S

## RELINQUISHED BY:

Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Printed Name: \_\_\_\_\_ Firm: \_\_\_\_\_

## RECEIVED BY:

Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Printed Name: \_\_\_\_\_ Firm: \_\_\_\_\_

**Total Solids**

## QA/QC Report

Client: GeoTrans, Inc.  
Project: Koppers/2201.037.01  
Sample Matrix: Soil

Service Request: K2301888  
Date Collected: 03/11/2003  
Date Received: 03/13/2003  
Date Analyzed: 03/17/2003

Duplicate Sample Summary  
Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: WET

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
FCH2-1-2	K2301888-001	88.0	83.2	85.6	6	

00011

## Analytical Results

**Client:** GeoTrans, Inc.  
**Project:** Koppers/2201.037.01  
**Sample Matrix:** Soil

**Service Request:** K2301888  
**Date Collected:** 03/11/2003  
**Date Received:** 03/13/2003

## BTEX

**Sample Name:** FCH2-1-2  
**Lab Code:** K2301888-001  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8021B

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Benzene	ND	U	0.57	1	03/19/03	03/20/03	KWG0303805	
Toluene	ND	U	1.2	1	03/19/03	03/20/03	KWG0303805	
Ethylbenzene	ND	U	1.2	1	03/19/03	03/20/03	KWG0303805	
m,p-Xylenes	ND	U	1.2	1	03/19/03	03/20/03	KWG0303805	
o-Xylene	ND	U	1.2	1	03/19/03	03/20/03	KWG0303805	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Bromofluorobenzene	102	37-130	03/20/03	Acceptable

Comments:

## LUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Koppers/2201.037.01  
Sample Matrix: Soil

Service Request: K2301888  
Date Collected: 03/11/2003  
Date Received: 03/13/2003

## BTEX

Sample Name: FCH1-1-2  
Lab Code: K2301888-003  
Extraction Method: EPA 5035/5030B  
Analysis Method: 8021B

Units: mg/Kg  
Basis: Dry  
Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Benzene	0.98		0.68	1	03/19/03	03/20/03	KWG0303805	
Toluene	3.8		1.4	1	03/19/03	03/20/03	KWG0303805	
Ethylbenzene	11		1.4	1	03/19/03	03/20/03	KWG0303805	
m,p-Xylenes	15		1.4	1	03/19/03	03/20/03	KWG0303805	
o-Xylene	8.8		1.4	1	03/19/03	03/20/03	KWG0303805	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Bromofluorobenzene	70	37-130	03/20/03	Acceptable

Comments:



## LUMBIA ANALYTICAL SERVICES, INC.

## Analytical Results

Client: GeoTrans, Inc.  
Project: Koppers/2201.037.01  
Sample Matrix: Soil

Service Request: K2301888  
Date Collected: NA  
Date Received: NA

## BTEX

Sample Name: Method Blank  
Lab Code: KWG0303805-4  
Extraction Method: EPA 5035/5030B  
Analysis Method: 8021B

Units: mg/Kg  
Basis: Dry  
Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Benzene	ND	U	0.050	1	03/19/03	03/19/03	KWG0303805	
Toluene	ND	U	0.10	1	03/19/03	03/19/03	KWG0303805	
Ethylbenzene	ND	U	0.10	1	03/19/03	03/19/03	KWG0303805	
m,p-Xylenes	ND	U	0.10	1	03/19/03	03/19/03	KWG0303805	
o-Xylene	ND	U	0.10	1	03/19/03	03/19/03	KWG0303805	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Bromofluorobenzene	108	37-130	03/19/03	Acceptable

Comments:

00017

**Client:** GeoTrans, Inc.  
**Project:** Koppers/2201.037.01  
**Sample Matrix:** Soil

**Service Request:** K2301888  
**Date Extracted:** 03/19/2003  
**Date Analyzed:** 03/19/2003

**Matrix Spike/Duplicate Matrix Spike Summary**  
**BTEX**

**Sample Name:** Batch QC  
**Lab Code:** K2301923-001  
**Extraction Method:** EPA 5035/5030B  
**Analysis Method:** 8021B

**Units:** mg/Kg  
**Basis:** Dry  
**Level:** Med  
**Extraction Lot:** KWG0303805

Analyte Name	Sample Result	Batch QCMS KWG0303805-1 Matrix Spike			Batch QCDMS KWG0303805-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Benzene	ND	2.98	2.86	104	2.94	2.85	103	46-121	1	40
Toluene	ND	3.03	2.86	106	2.98	2.85	105	43-128	2	40
Ethylbenzene	ND	3.03	2.86	106	2.98	2.85	105	43-134	2	40
m,p-Xylenes	ND	5.94	5.72	104	5.84	5.71	102	42-134	2	40
o-Xylene	ND	2.96	2.86	104	2.91	2.85	102	38-130	2	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00019

**Polynuclear Aromatic Hydrocarbons  
Method 8270**

Analytical Results

Client: GeoTrans, Inc.  
Project: Koppers/2201.037.01  
Sample Matrix: Soil

Service Request: K2301888  
Date Collected: 03/11/2003  
Date Received: 03/13/2003

Polynuclear Aromatic Hydrocarbons

Sample Name: FCH2-20-21  
Lab Code: K2301888-002  
Extraction Method: EPA 3541  
Analysis Method: 8270C SIM

Units: ug/Kg  
Basis: Dry  
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1000000	D	47000	10000	03/20/03	03/28/03	KWG0303669	
2-Methylnaphthalene	330000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Acenaphthylene	15000	D	470	100	03/20/03	03/28/03	KWG0303669	
Acenaphthene	300000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Dibenzofuran	220000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Fluorene	300000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Pentachlorophenol	ND	U	19000	100	03/20/03	03/28/03	KWG0303669	
Phenanthrene	800000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Anthracene	160000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Fluoranthene	300000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Pyrene	240000	D	47000	10000	03/20/03	03/28/03	KWG0303669	
Benz(a)anthracene	59000	D	470	100	03/20/03	03/28/03	KWG0303669	
Chrysene	54000	D	470	100	03/20/03	03/28/03	KWG0303669	
Benzo(b)fluoranthene	27000	D	470	100	03/20/03	03/28/03	KWG0303669	
Benzo(k)fluoranthene	22000	D	470	100	03/20/03	03/28/03	KWG0303669	
Benzo(a)pyrene	25000	D	470	100	03/20/03	03/28/03	KWG0303669	
Indeno(1,2,3-cd)pyrene	7400	D	470	100	03/20/03	03/28/03	KWG0303669	
Dibenz(a,h)anthracene	1800	D	470	100	03/20/03	03/28/03	KWG0303669	
Benzo(g,h,i)perylene	5200	D	470	100	03/20/03	03/28/03	KWG0303669	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Biphenyl-d10	109	39-99	03/28/03	Outside Control Limits
Fluorene-d10	102	43-98	03/28/03	Outside Control Limits
2,4,6-Tribromophenol	64	20-140	03/28/03	Acceptable
Fluoranthene-d10	168	52-108	03/28/03	Outside Control Limits
Terphenyl-d14	360	61-122	03/28/03	Outside Control Limits

Comments: \_\_\_\_\_

**Client:** GeoTrans, Inc.  
**Project:** Koppers/2201.037.01  
**Sample Matrix:** Soil

**Service Request:** K2301888  
**Date Collected:** 03/11/2003  
**Date Received:** 03/13/2003

**Polynuclear Aromatic Hydrocarbons**

**Sample Name:** FCH1-20-21  
**Lab Code:** K2301888-004  
**Extraction Method:** EPA 3541  
**Analysis Method:** 8270C SIM

**Units:** ug/Kg  
**Basis:** Dry  
**Level:** Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1500000	D	47000	10000	03/20/03	03/28/03	KWG0303669	
2-Methylnaphthalene	850000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Acenaphthylene	28000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Acenaphthene	770000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Dibenzofuran	490000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Fluorene	610000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Pentachlorophenol	24000	D	19000	100	03/20/03	03/28/03	KWG0303669	
Phenanthrene	1300000	D	47000	10000	03/20/03	03/28/03	KWG0303669	
Anthracene	270000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Fluoranthene	750000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Pyrene	560000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Benz(a)anthracene	120000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Chrysene	130000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Benzo(b)fluoranthene	43000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Benzo(k)fluoranthene	63000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Benzo(a)pyrene	45000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Indeno(1,2,3-cd)pyrene	16000	D	4700	1000	03/20/03	03/28/03	KWG0303669	
Dibenz(a,h)anthracene	3700	D	470	100	03/20/03	03/28/03	KWG0303669	
Benzo(g,h,i)perylene	13000	D	4700	1000	03/20/03	03/28/03	KWG0303669	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Biphenyl-d10	96	39-99	03/28/03	Acceptable
Fluorene-d10	103	43-98	03/28/03	Outside Control Limits
2,4,6-Tribromophenol	72	20-140	03/28/03	Acceptable
Fluoranthene-d10	115	52-108	03/28/03	Outside Control Limits
Terphenyl-d14	517	61-122	03/28/03	Outside Control Limits

**Comments:** \_\_\_\_\_

**00025**

Client: GeoTrans, Inc.  
Project: Koppers/2201.037.01  
Sample Matrix: Soil

Service Request: K2301888

**Surrogate Recovery Summary**  
**Polynuclear Aromatic Hydrocarbons**

Extraction Method: EPA 3541  
Analysis Method: 8270C SIM

Units: PERCENT  
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>	<u>Sur5</u>
FCH2-1-2	K2301888-001	864 D *	136 D *	82 D #	162 D *	1193 D *
FCH2-20-21	K2301888-002	109 D *	102 D *	64 D #	168 D *	360 D *
FCH1-1-2	K2301888-003	577 D *	287 D *	47 D #	3185 D *	1350 D *
FCH1-20-21	K2301888-004	96 D	103 D *	72 D #	115 D *	517 D *
Method Blank	KWG0303669-5	75	74	47	83	71
FCH1-20-21MS	KWG0303669-1	110 D *	133 D *	70 D #	116 D *	459 D *
FCH1-20-21DMS	KWG0303669-2	91 D	90 D	70 D #	115 D *	470 D *
Lab Control Sample	KWG0303669-3	65	69	61	78	87
Duplicate Lab Control Sample	KWG0303669-4	66	71	61	79	90

**Surrogate Recovery Control Limits (%)**

Sur1 = Biphenyl-d10	39-99	Sur5 = Terphenyl-d14	61-122
Sur2 = Fluorene-d10	43-98		
Sur3 = 2,4,6-Tribromophenol	20-140		
Sur4 = Fluoranthene-d10	52-108		

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

**Client:** GeoTrans, Inc.  
**Project:** Koppers/2201.037.01  
**Sample Matrix:** Soil

**Service Request:** K2301888  
**Date Extracted:** 03/20/2003  
**Date Analyzed:** 03/28/2003

**Lab Control Spike/Duplicate Lab Control Spike Summary**  
**Polynuclear Aromatic Hydrocarbons**

**Extraction Method:** EPA 3541  
**Analysis Method:** 8270C SIM

**Units:** ug/Kg  
**Basis:** Dry  
**Level:** Low  
**Extraction Lot:** KWG0303669

Analyte Name	Lab Control Sample KWG0303669-3 Lab Control Spike			Duplicate Lab Control Sample KWG0303669-4 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	204	250	81	217	250	87	33-98	6	40
2-Methylnaphthalene	186	250	75	198	250	79	36-103	6	40
Acenaphthylene	215	250	86	228	250	91	41-102	6	40
Acenaphthene	212	250	85	225	250	90	41-97	6	40
Dibenzofuran	202	250	81	211	250	84	38-102	4	40
Fluorene	223	250	89	235	250	94	43-101	5	40
Pentachlorophenol	221	250	89	236	250	94	48-114	6	40
Phenanthrene	219	250	87	225	250	90	45-101	3	40
Anthracene	232	250	93	240	250	96	46-109	4	40
Fluoranthene	231	250	92	247	250	99	49-112	7	40
Pyrene	235	250	94	258	250	103	50-112	9	40
Benz(a)anthracene	213	250	85	240	250	96	52-114	12	40
Chrysene	226	250	91	251	250	100	54-109	10	40
Benzo(b)fluoranthene	231	250	92	265	250	106	54-115	14	40
Benzo(k)fluoranthene	228	250	91	256	250	102	54-115	11	40
Benzo(a)pyrene	241	250	97	270	250	108	54-120	11	40
Indeno(1,2,3-cd)pyrene	181	250	73	201	250	80	49-121	10	40
Dibenz(a,h)anthracene	166	250	66	183	250	73	48-114	10	40
Benzo(g,h,i)perylene	175	250	70	194	250	78	45-113	11	40

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



April 17, 2003

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

Subject: Response to EPA's February 26, 2003 Letter  
Regarding Interim Measures Documentation Report for SWMU 11  
Dated, September 29, 2000  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

On behalf of Beazer East, Inc. (Beazer), this letter provides a response to the United States Environmental Protection Agency's (EPA's) comment letter dated February 26, 2003, and received by Beazer March 3, 2003. The letter prepared by EPA provided comments regarding the September 29, 2000 *Interim Measures Documentation Report for SWMU 11, Koppers Industries, Inc. Grenada Facility, Grenada, Mississippi*. The EPA's comments are provided below; each EPA comment is followed by Beazer's response.

**Comment 1. Page 9, Paragraph 3; Page 10, Paragraphs 3 & 4**

The facility stated that the sediments were excavated to remove the visually impacted material or to a maximum of five (5) feet followed by backfilling with an equal amount of clean material. Why had the facility not collected the confirmatory sediment samples after the sediment excavation of the off-site Central Ditch? How had the facility concluded the complete removal of contaminated sediments from the off-site Central Ditch? The facility needs to demonstrate the complete removal of contaminated sediments from the off-site Central Ditch. This can include the collection of at least 2-4 confirmatory sediment samples below a depth of backfilling and analyze for the site-specific constituents. The facility may propose any other option(s) or plan to demonstrate the complete removal of contaminated sediments from the off-site Central Ditch.

Mr. Narindar Kumar  
U.S. Environmental Protection Agency  
April 17, 2003  
Page 2

**Response 1.** EPA and Beazer discussed and resolved the issue of collecting confirmation sediment samples prior to the EPA's approval of the scope of work in March 1999. The scope of work implemented for the removal of impacted sediments in the Central Ditch consisted of the following: 1) the *Interim Measure Work Plan, SWMU 11, Koppers Industries/Beazer East Facility Tie Plant, Mississippi*, dated January 1999 (IM Work Plan); 2) EPA comments on the Work Plan, dated February 26, 1999; and 3) Beazer's response to EPA comments on the Work Plan, dated March 10, 1999.

The IM Work Plan identified that the off-site sediment removal activities were intended to eliminate future potential exposures to wood treating residuals in the Central Ditch. The IM Work Plan stated that the removal depth of impacted sediments from the Central Ditch bottom from the eastern property line to Transect 22 would be to a depth to remove visually impacted material or to a maximum depth of five feet. The excavated area would be backfilled with an equal amount of clean material. From Transect 22 to the confluence of the Central Ditch with Batupan Bogue, the IM Work Plan described excavation of impacted sediments to an estimated depth of one foot without any backfill placement.

As presented in the *Interim Measure SWMU 11 Documentation Report, Koppers Industries/Beazer East Facility Tie Plant, Mississippi*, dated September 29, 2000, site conditions encountered required additional excavation both upgradient and downgradient of Transect 22. Upgradient of Transect 22, site conditions required extending the excavation beyond the current width of the Central Ditch. The conditions downgradient of Transect 22 were found to be the same as those upgradient of Transect 22. Therefore, the performance criteria for the Central Ditch downgradient of Transect 22 were modified to be identical to that of the upgradient portion of the ditch. Thus, downgradient of Transect 22 sediment was excavated to the depth required to remove visually impacted material or to a maximum depth of five feet, and sediment excavation was extended beyond the current width of the Central Ditch. In addition, clean backfill was placed to restore the ditch to approximate pre-excavation contours, again consistent with the approach used for the upgradient portion of the ditch. The off-site excavation depth and subsequent backfill with clean material averaged four to five feet, as shown in cross-sections presented on Plate 1 of the IM Documentation Report, as visually impacted material generally did not exceed that depth.

The EPA's February 26, 1999 comments on the IM Work Plan, stated that, in the creek sections "which will undergo the deep excavation along with replacement of clean fill ..., although some residual contamination will remain above the Region 4 sediment screening levels, the residual contamination will be under approximately three to five feet of clean fill. Therefore, with the placement of clean fill, exposure to the residual contaminated present above EPA's Region 4 sediment screening levels can be considered for the most part interrupted." The entire extent of the Central Ditch from the eastern property line to the confluence with the Batupan Bogue

Mr. Narindar Kumar  
U.S. Environmental Protection Agency  
April 17, 2003  
Page 3

underwent deep excavation followed by backfilling with an equal amount of clean fill. Therefore, the objective of the sediment removal to eliminate future potential exposure was met, and no confirmatory sampling was contemplated by the approved work scope or deemed necessary by EPA in its approval.

**Comment 2. Page 21, Paragraph 1; Figure 11; Appendix P**

The DNAPL is being recovered from the five (5) recovery wells and nine (9) under-drain sumps from the Central Ditch. The DNAPL recovery protocol is epitomized in Appendix P. Please quantify in gallons the recovery of DNAPL from the five (5) recovery wells and nine (9) under drain sumps in years 2000, 2001, and 2002, respectively. How is the recovered DNAPL disposed?

**Response 2.** The volumes of DNAPL recovered from underdrain sumps and recovery wells are summarized in Tables 1 and 2, respectively. The DNAPL is transported off-site every 90 days for incineration. The DNAPL is transported to LWD Inc., Calvert City, Kentucky (EPA ID # KYD088438817) or American Environmental Services, Morgantown West Virginia (EPA ID # WVD981107600).

**Comment 3. Appendix Q, Inspection Checklist**

The facility should complete the sediment disposal area cap and Central Ditch Inspection Checklist of Appendix Q once in a year, including specific comments, observations and maintenance activities.

**Response 3.** The first site inspection of the sediment disposal area cap and Central Ditch was performed on November 28, 2000. Evidence of erosion of the cap was noted during the inspection and in subsequent inspections by Beazer in May 2001. Beazer prepared an *Erosion Repair Work Plan* in June 2001; however, the repair work was delayed due to drought conditions in the area. The disposal cap was inspected in January 2002 and erosion to the cap was repaired in June 2002. The work performed in June 2002 included reseeded the entire cap following the repairs, inspecting the cap, and documenting the repair work. The annual disposal cap and Central Ditch inspection will be scheduled in the spring of 2003.

Mr. Narindar Kumar  
U.S. Environmental Protection Agency  
April 17, 2003  
Page 4

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864.

Sincerely,

GEOTRANS, INC.



Jennifer Abrahams, R.G.  
Project Manager

cc: Doug McCurry, EPA  
Jerry Cain, MDEQ  
Mike Bollinger, Beazer

Tim Basilone, KII  
Tom Henderson, KII

**TABLE 1**  
**DNAPL Recovery from Central Ditch Underdrain Sumps**  
**KII Grenada Facility**  
**Grenada, MS**

<b>Sump</b>	<b>Year</b>	<b>Approximate Total Gallons Pumped By Year</b>
0	1999	0
	2000	0
	2001	0
	2002	0
1	1999	0
	2000	0
	2001	0
	2002	0
2	1999	0
	2000	0
	2001	0
	2002	0
3	1999	30
	2000	0
	2001	0
	2002	0
4	1999	120
	2000	67
	2001	10
	2002	0
5	1999	250
	2000	196.5
	2001	35
	2002	0
6	1999	545
	2000	470
	2001	0
	2002	0
7	1999	0
	2000	130
	2001	702
	2002	1150
8	1999	0
	2000	0
	2001	0
	2002	0

**TABLE 2**  
**DNAPL Recovery from Central Ditch Recovery Wells**  
**KII Grenada Facility**  
**Grenada, MS**

Well	Year	Approximate Total Gallons Pumped by Year
R-16	2000	0
	2001	0
	2002	0
R-23	2000	0
	2001	0
	2002	0
R96-3	2000	0
	2001	0
	2002	0
R96-14	2000	0
	2001	0
	2002	0
RW-2	2000	0
	2001	0
	2002	0
RW-3	2000	0
	2001	0
	2002	0
RW-5	2000	0
	2001	155
	2002	78
RW-6	2000	0
	2001	0
	2002	0
RW-9	2000	0
	2001	0
	2002	0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

Haz Waste ~~FS~~ file  
AI: 876  
Shanks  
Grenada County  
HSWA File

4WD-RPB

DEC 1 2005

Mr. Michael W. Bollinger  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219

SUBJ: Response to Comments on Sediment Toxicity  
Testing Work Plan and Addendum to Complete  
RFI Risk Assessment, dated, July 22, 2005  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has completed the Response to Comments on the Sediment Toxicity Testing Work Plan and Addendum to Complete RFI Risk Assessment, dated, July 22, 2005. It appears that Beazer has not incorporated the outcome of the July 7, 2005 meeting in the preparation of the response. Enclosed you will find comments on the Response to Comments on the Sediment Toxicity Testing Work Plan. Please send a response to each comment to EPA and Mississippi Department of Environmental Quality (MDEQ) within 30 days after the receipt of this letter.

If you have any question(s) or desire to have a meeting, please contact Mr. Harbhajan Singh of my staff at (404) 562-8473.

Sincerely,

Jon D. Johnston, Chief  
RCRA Programs Branch  
Waste Management Division

Enclosure: Comments on Response to Comments on  
Sediment Toxicity Testing Work Plan

CC: Patrick D. Stark, Koppers/Pittsburgh  
Jennifer Abrahams, HSI GeoTrans/Rancho Cordova  
Allison Gargani, AMEC/Westford  
Jerry Cain, MDEQ/Jackson



**Koppers/Beazer's East, Tie Plant, Mississippi**  
**Comments on the Response to Comments on the Sediment Toxicity Testing**  
**Work Plan and Addendum to Complete RFI Risk Assessment, dated July 22, 2005**  
**EPA I.D. No. MSD 007 027 543**

**I. General Comments**

Beazer's has written their response in the manner without mention of the agreements made with EPA at the July 7 meeting. The facility is asking to accept their data regardless of how it turns out. The facility should design the test appropriately to address EPA's concern.

The facility and EPA are apparently in agreement regarding the responses to Comments 1, 2, and 3. Comment 7 was in agreement in the past, but the current response to Comment 7 has picked up some of the disagreement associated with Comment 4.

**II. Specific Comments**

**Comments 1, 2 and 3:** The responses are adequate.

**Comment 4:** To complete the work plan, EPA requests Beazer to furnish the calculations of the number of replicates needed to achieve the design criteria of a Type I error of 0.05 and a Type II error of 0.8. The typical variance in toxicity test results can be obtained from the laboratory. Once this information is included, EPA can accept the work plan. EPA will accept the data that is generated by the work plan; however, if for some unforeseen reason the power is less than the design criteria, EPA may qualify the affected data as less certain.

*During the meeting on July 7, 2005, the issue of defining statistical Type I and II errors (a priori) was discussed. A Type I error rate of  $\alpha=0.05$  was agreed by both parties. The Type II error rate of  $\beta=0.80$  was suggested by EPA. Beazer responded with a quasi-commitment to "target" the Type II error rate of  $\beta=0.80$ . Beazer was concerned that EPA would consider the results of a sediment toxicity test to be unacceptable if the power of the statistical test was later determined to be  $\beta<0.80$ . If the outcome of the toxicity tests does not meet the statistical power criterion ( $\beta=0.80$ ) then the test would not be rejected, but would assign the data a lower relative weight in the weight of evidence analysis for the site.*

**Comment 5:** EPA is not asking Beazer to predict the future but to design the test for statistical considerations regarding Type I and Type II error, as is standard practice. An assumed minimum detectable difference, is a design criterion that goes hand-in-hand with the Type I and Type II error rates in the equation used to calculate the number of replicates required. EPA is asking that this calculation be completed and furnished in the work plan. Both EPA and Beazer would be served by an experimental design that took into account both party's needs for data quality. While EPA is concerned that toxicity might be missed, it is equally possible that the poor data might identify phantom toxicity resulting in unnecessary cleanup. A work plan that includes an experimental design to meet EPA and Beazer's specifications for data quality will ensure that the data will add value in support of decision making.

*The outcome of the July 7 meeting regarding Comment 5 showed that a minimum detectable difference (MDD) can and should be assigned a priori according to EPA. Beazer responded with a quasi-commitment to "target" the MDD at  $\approx 20\%$  from the control response, but did not want to commit that EPA would reject the sediment toxicity test if the actual derived MDD was greater than 20% from the control response due to unexplained variances that might occur.*

**Comment 6:** EPA understands that Beazer prefers to rely on statistical significance relative to the control as the criterion used to define toxic sediments. If the site sample is statistically significantly affected relative to the reference station, this will be interpreted as an affected sample regardless of the degree of effect. EPA is in agreement with this approach.

**Comment 7:** Beazer thinks that five replicates are sufficient. However, Beazer has not provided the calculations to support such concept. When EPA refers to quality data, we are referring to data of documented quality, namely that data quality objectives process has been applied and documented in the work plan. The equation to which we refer constitutes the required documentation. The details are found in USEPA 2000. By these comments, EPA is notifying Beazer that, regardless of which protocol they follow, if the test comes out with power below 0.8, EPA will consider it to be an uncertain result. Adding more replicates is a way to increase the power of the test to detect a difference, thereby avoiding this problem. Beazer might want to check to see what power they achieved in the past with the test using five replicates.

EPA recommends eight replicates, unless a site-specific power calculation can justify another number no less than five. Here is the outcome of this comment regarding the July 7 meeting:

*The issue of experimental treatment (sample) replication for the sediment toxicity test was also discussed. It was assumed by EPA that the number of replicates would be eight in number ( $n=8$ ) according to Beazer's citation of EPA Methods 100.1 and 100.2 for sediment toxicity testing using *Hyalella azteca* and *Chironomus tentans*. Beazer's ecological risk assessment representative (AMEC International) was uncertain as to the exact number of replicates that would be used, but assumed five ( $n=5$ ). Beazer accepted EPA recommendation of eight ( $n=8$ ) replicates for each experimental treatment.*

## References

Mearns AJ, Swartz RC, Cummins JM, Dinnel PA, Plesha P, Chapman, PM. 1986. Interlaboratory comparison of a sediment toxicity test using the marine amphipod, *Rhepoxynius abronius*. *Mar Environ Res* 19:13-37.

USEPA 2000. *Guidance for the Data Quality Objectives Process* EPA QA/G-4, U.S. Environmental Protection Agency, Office of Environmental Information, Washington DC. EPA/600/R-96/055. August 2000.

#876

RECEIVED  
MAR 11 2005  
epa of Environmental Quality  
Office of Pollution Control

# BEAZER EAST, INC.

C/O Three Rivers Management, Inc.  
Suite 3000  
One Oxford Centre  
Pittsburgh, PA 15219

March 3, 2005

## VIA FIRST CLASS U.S. MAIL

Environmental Permits Division, Chief  
Mississippi Office of Pollution Control  
P.O. Box 10385  
Jackson, MS 39289-0385

Regional Administrator  
USEPA – Region 4  
61 Forsyth Street, SW  
Atlanta, GA 30303-8960

*Koppers  
Haz Waste  
Grenada Co.*

RE: Post-Closure Care Permit No. MSD007027543 and HSWA Permit No.  
007027543  
Tie Plant, Mississippi (the Grenada Facility)

Dear Sirs:

Beazer East, Inc. (the "Operator") hereby provides notice to the Mississippi Department of Environmental Quality (the "Department") and the United States Environmental Protection Agency ("USEPA") that new information has been discovered potentially relating to the suspected release of hazardous waste or hazardous constituents at the Grenada Facility. Specifically, a representative of the Operator was recently provided with preliminary test results summarizing sampling activities purportedly conducted by a third-party at locations allegedly near the Grenada Facility. These preliminary test results were produced by plaintiffs' representative during the discovery phase of an ongoing lawsuit and purport to establish levels of polycyclic aromatic hydrocarbons and dioxins at unspecified locations which may or may not be located adjacent to, and may or may not be attributable to, the Grenada Facility. The Operator has not evaluated or verified the accuracy of the preliminary test results and possesses no independent knowledge of the sampling activities or the laboratory methods used to evaluate the samples. Furthermore, while the Operator maintains that the discovery of this additional information does not trigger any notification or other obligations under any of the provisions set forth in Post-Closure Care Permit No. MSD007027543 issued by the Department or HSWA Permit No. 007027543 issued by the USEPA, the Operator has elected to provide this notification.

March 3, 2005

Page 2 of 2

I certify under penalty of law that this notification was prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Should you have any questions concerning this matter, please contact Mike Bollinger of this office at 412/208-8864.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Robert Markwell", with a stylized flourish at the end.

Robert Markwell  
Vice President

Cc: M. Bollinger  
J. Blundon



www.geotransinc.com

3035 Prospect Park Drive  
Suite 40  
Rancho Cordova, CA 95670-6070

916-853-1800 FAX 916-853-1860

May 25, 2003

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

**Attn:** Mr. Narinda M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

**Subject:** Complete Phase II RCRA Facility Investigation Report  
Koppers Industries, Inc.  
Grenada Facility  
Grenada, Mississippi

HSWA

Dear Mr. Kumar:

On behalf of Beazer East, Inc. (Beazer), attached are two copies of Volumes I through III of the *Complete Phase II RCRA Facility Investigation Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi*. This report has been revised to incorporate the data obtained from implementation of the *Work Plan to Complete Phase II RCRA Facility Investigation, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi* (HSI GeoTrans, May 1999). On March 27, 2000, the EPA "approve(d) the work plan to complete Phase II RFI for the identification and scope of the remaining groundwater data needs and surface soil data needs and additional surface soil investigation to refine the understanding of site constituents in the Old South Drip Pad/Track Area." (EPA, March 2000).

In addition, although nothing in the March 27, 2000 EPA approval letter requested or required additional sediment sampling in the Northern Stream, Beazer proactively elected to collect additional sediment analytical data from the Northern Stream to refine the understanding of the lateral extent of the potentially elevated PAH concentrations to guide future risk management decisions.

The incorporation of the data collected in 2000 into the Complete Phase II RFI completes the characterization of the Grenada Facility and provides ample data to support the Corrective Measures Study for the site.

Mr. Narinda M. Kumar  
U.S. Environmental Protection Agency  
May 25, 2003  
Page 2

Beazer has reviewed the Environmental Indicators for the Koppers Industries, Inc. Grenada Site in light of the Complete Phase II RFI, and requests a re-evaluation of the Environmental Indicators for the Site. The human health risk assessment evaluated potential risk to receptors from potential exposure to constituents in soil, surface water, sediment, and groundwater at the site. The hazard indices associated with all potential exposure to off-site and on-site media and exposure areas (with the exception of hypothetical future use of off-site groundwater as drinking water at certain locations) are less than 1, indicating that no adverse noncarcinogenic health effects are expected to occur. Hazard indices associated with the hypothetical future use of off-site groundwater as drinking water are less than 1 at three off-site monitoring well locations and exceed 1 at one off-site and three boundary area monitoring well locations.

Estimated potential carcinogenic risks associated with all potential exposure to off-site and on-site media and exposure areas (with the exception of hypothetical future use of off-site groundwater as drinking water) are within or below the EPA's target risk range ( $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ ). Potential risks associated with the hypothetical future use of off-site groundwater as drinking water are within or below the EPA's target risk range at one boundary monitoring well and at four off-site monitoring wells and exceed EPA's target risk range at two boundary monitoring well locations. It should be noted that no current exposure to off-site groundwater exists, and no potential future exposure to off-site groundwater is expected to occur because the site and surrounding are supplied with municipal drinking water.

The ecological evaluation concluded that potential risks to terrestrial receptors on-site are unlikely because the active wood treating operations preclude the existence of important ecological habitat in operational portions of the site. The ecological evaluation of concentrations of polynuclear aromatic hydrocarbons in sediment in the Northern Stream concluded that potential effects to benthic macroinvertebrates, but not other wildlife using the Northern Stream, may occur in a limited portion of the on-site area of the Northern Stream, but are not expected to occur downstream of the site,

The combination of implementing the Interim Measures with the results of the risk assessment for the site provides the information necessary to revise both the site Environmental Indicators CA 725 and CA 750 to YE. Beazer will update the Environmental Indicators Project Schedule and provide the update to the EPA under separate cover.

Beazer believes that it is appropriate to schedule a meeting to discuss the Complete Phase II RFI submittal, the status of the Environmental Indicators, and the Corrective Measures for this site. We will contact you to coordinate scheduling this meeting.

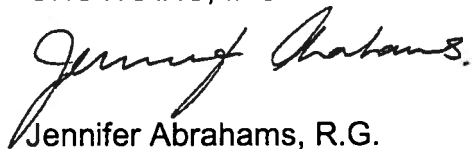


Mr. Narinda M. Kumar  
U.S. Environmental Protection Agency  
May 25, 2003  
Page 3

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864.

Sincerely,

GEOTRANS, INC.



Jennifer Abrahams, R.G.  
Project Manager

cc: ☒ Doug McCurry, EPA (cover letter only)    Tim Basilone, KII  
     ☒ Jerry Cain, MDEQ                                    Tom Henderson, KII  
     Mike Bollinger, Beazer                                Paul Anderson, AMEC (Vol 1 on CD)  
     Mark King, Groundwater Insight (Vol 1 on CD)



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916-853-1800 FAX 916-853-1860

February 27, 2003

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
South Programs Section

RECEIVED  
MAR - 5 2003  
EPA U.S. Environmental Quality  
Agency of Pollution Control

**Subject: Schedule to Implement the Work Plan to  
Characterize Soil in the Vicinity of the Former "Creosote Hole"  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543**

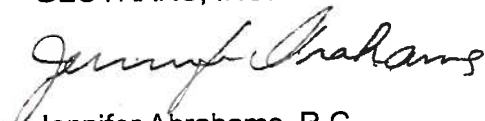
Dear Mr. Kumar:

On behalf of Beazer East, Inc. (Beazer), this letter provides the schedule to implement the scope of work presented in the *Work Plan to Characterize Soil in the Vicinity of the Former "Creosote Hole"*, dated June 5, 2002. EPA approved the work plan in a letter dated January 10, 2003. Beazer has had to coordinate the implementation of this work with both the Koppers Industries, Inc. Grenada Facility Plant Manager and the drilling subcontractor. The field work is scheduled to be performed on March 11, 2003. The laboratory analytical results will be received by April 3, 2003. The analytical results will be reviewed for quality assurance and quality control and will be entered into the site database. A summary of the field activities and laboratory results for the former "creosote hole" investigations will be prepared and submitted to the EPA by April 18, 2003.

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864.

Sincerely,

GEOTRANS, INC.

  
Jennifer Abrahams, R.G.  
Project Manager

cc: Doug McCurry, EPA  
Jerry Cain, MDEQ  
Mike Bollinger, Beazer

Tim Basilone, KII  
Tom Henderson, KII

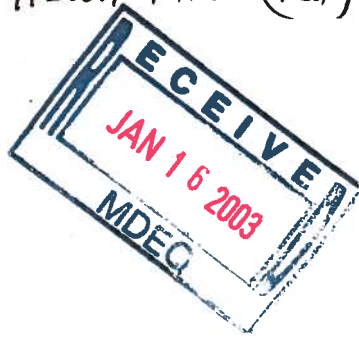


T. Cook



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

grenada Co.  
HSWA File (red)



JANUARY 10, 2003

4WD-RPB

Mr. Michael W. Bollinger  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219

SUBJ: Work Plan to Characterize Soil in the Vicinity  
of the Former "Creosote Hole"  
Dated, June 5, 2002  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has reviewed the Work Plan to Characterize Soil in the Vicinity of the Former "Creosote Hole" dated, June 5, 2002 of Koppers/Beazer's, Tie Plant, Mississippi. Based on review, EPA hereby approves this work plan. Please implement the work plan immediately and submit the results within forty-five (45) calendar days after the receipt of this letter.

If you have any question(s), please contact Mr. Harbhajan Singh of my staff at (404) 562-8473.

Sincerely,

Narindar M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

CC: Timothy Basilone, Koppers Industries/Pittsburgh  
Jennifer Abrahams, HSI GeoTrans/Rancho Cordova  
Jerry Cain, MDEQ/Jackson



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September 9, 2002

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
South Programs Section

Subject: Response to EPA's July 16, 2002 Letter  
Regarding Revised Final Phase II RFI Report, dated  
November 13, 1998  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543



Dear Mr. Kumar:

On behalf of Beazer East, Inc. (Beazer), this letter provides a response to the United States Environmental Protection Agency's (EPA's) letter dated July 16, 2002, and received by Beazer on July 22, 2002, regarding the Koppers Industries, Inc. Grenada Facility in Grenada, Mississippi (site). EPA's letter stated that certain inadequacies still exist in Beazer's November 13, 1998 *Revised Final Phase II RCRA Facility Investigation Report* (Revised RFI Report).

EPA initially provided comments, dated May 20, 1999, on the Revised RFI Report. In response, Beazer submitted the *Work Plan to Complete Phase II RCRA Facility Investigation* (Work Plan) on August 16, 1999. The EPA approved the Work Plan "to complete Phase II RFI for the identification and scope of the remaining groundwater data needs and surface soil data needs and additional surface soil investigation to refine the understanding of site constituents in the Old South Drip Pad/Track Area" on March 27, 2000. Beazer implemented the Work Plan during the summer of 2000 and has prepared a draft *Complete Phase II RCRA Facility Investigation Report* for the site. As the EPA is aware, Beazer and Koppers Industries, Inc. (KII) are still resolving issues concerning the approach for performing the site Risk Assessment. Once these issues are resolved, the *Complete Phase II RCRA Facility Investigation Report* will be submitted to the EPA. Beazer anticipates that the *Complete Phase II RCRA Facility Investigation Report* will be submitted in the near future.

Mr. Narindar Kumar  
U.S. Environmental Protection Agency  
September 9, 2002  
Page 2

**Comment 1. Executive Summary, ES-1:**

Site wood treating operations have involved pentachlorophenol and creosote based preservatives since 1904. Inorganic preservatives, specifically copper, chromium, and arsenic, have never been used at the site. Site investigations have focused on the characterization of pentachlorophenol and creosote based preservatives in soil and groundwater since 1988 and EPA has consistently concurred with these site investigations.

**Comment 2. Drip Track Area, Page 4-18:**

Groundwater impacts exist in the Drip Track Area, as identified in the Revised RFI Report. Visual detection of DNAPL above residual saturation was observed in only five soil borings in the Drip Track Area, as indicated on Figure 4-5 of the Revised RFI Report. Free product has never been recovered from the Drip Track Area.

Field activities were conducted in 2000, in accordance with the Work Plan, to supplement the characterization of the groundwater data presented in the Revised RFI Report. These activities further characterized the extent of groundwater impacts in the Drip Track Area. The 2000 field activities specific to the Drip Track Area included sampling existing wells R-5, R-5B, R-20, R-20B, R-21, R-21B, R-25, and R-25B. In addition, vertical profile grab groundwater samples were collected from location LSZ-7. The vertical profile grab groundwater samples at LSZ-7 included one sample from the Upper Sand Zone and samples collected at 20-foot intervals in the Lower Sand Zone until the Lower Confining Zone was encountered at 217 feet below ground surface. The results of the additional investigation will be presented in the *Complete Phase II RCRA Facility Investigation Report*. As mentioned previously, this report is anticipated to be submitted to the EPA in the near future, once risk assessment issues are resolved with KII.

Figures and tables that will be included in the *Complete Phase II RCRA Facility Investigation Report* are attached to present the results of the 2000 field activities. Figures 4-13 through 4-18 and 4-20 through 4-25 present the characterization of the groundwater impacts in the Upper and Lower Sand Zones, and the analytical results are presented in Tables 3-14 and 3-14.

Further, Beazer's approach within the subject document is inconsistent with their Interim Measures Pre-Design Investigation Report and Conceptual Design (Hydrossearch, December 1996), wherein Beazer specifically included a corrective action objective to afford protection to an on-site worker from exposure to surface and subsurface soil. Also, the prior version of the subject document (Dames & Moore, March 1994) included evaluation of on-site worker exposure and was the subject of the regulators' comment requiring Beazer to evaluate (in addition to surface soil) on-site worker exposure to subsurface soil in the absence of land use restrictions. No changes occurred at the plant since submittal of these documents that justify Beazer eliminating Koppers Industries' on-site worker exposure to surface and subsurface soil as a viable pathway.

With regard to Beazer not considering Koppers Industries' employees within their risk assessment, Koppers Industries does not agree that its current workers are protected through FIFRA/OSHA requirements from uncontrolled hazardous waste at the plant, and further Koppers Industries believes that the risk posed by exposure to constituents of concern at the property must be evaluated under both industrial and commercial scenarios, as has been stated previously. The rationale for assessing risks to Koppers Industries' employees at our properties is based on complete and reasonable exposure pathways.

As supporting information, the following should be considered as Koppers Industries' position:

1. Asset Purchase Agreement (APA) – Section 7.02(c) of the APA between Koppers Industries and Beazer states that Koppers Industries may use its asset for *“the operation of the Business (including expansion of the Business) ...to the extent reasonably related to the Business”*.

Inherent to performing a risk assessment is the need to evaluate actual or potential risks to current and future receptors, under current or future land use scenarios. Industrial use applies to the current use of the property. Future use reasonably related to the business can also include commercial activities. Considering other configurations of existing buildings and covers is also inherently included in this position.

2. Rebuttable Presumption Against Reregistration (RPAR) Settlement Agreement (U.S. EPA) - In general, RPAR addresses personal protective equipment and procedures to protect wood treating workers from exposure to treating solutions specifically during the application or application process (e.g., handling freshly treated wood, manually opening cylinder doors, entering pressure treatment cylinders, moving trams out of cylinders, mixing chemicals, etc.).

KII's treating solution(s)/work-specific personal protective equipment and procedures are not designed to, nor do they necessarily protect an on-site worker from exposures to general, site-wide, uncontrolled contamination.

concentrated source areas in proximity to shallow groundwater may include groundwater as a concern for exposure and/or as a transport mechanism to surface water/sediment (i.e., shallow groundwater has and does discharge to the central ditch). For all of these reasons, a more comprehensive assessment of dioxins should be performed to preclude current and future exposure to Koppers Industries' workers or trespassers/off-site receptors.

#### Creosote Hole

Beginning in the 1920's and through the 1950's, a site feature labeled as "Creosote Hole" is depicted approximately 20 feet to the south of the treating cylinders (by review of historic Sanborn Maps). As you may know, historically, these types of pits were used for settling solids from process waters. I am not aware of any closure or cleanup conducted at this pit through review of the historic documents. Please note that the creosote hole may be the source of DNAPL that is currently leaking into the Central Ditch, upgradient of the current location of Beazer's Interim Measures system. This issue should be addressed from both a potential soil and sediment cleanup perspective.

#### Plant/Private Wells

By review of the Phase II RFI Report, Beazer apparently did not evaluate off-site or on-site groundwater use other than through a literature search of records. However, Beazer stated that "the potentiometric surface in the deeper aquifers may have been lowered by withdrawal from wells in the vicinity of the Site during recent years." Apparently and paradoxically, based solely on the literature search, Beazer had assumed that "no exposure to groundwater on the Site or downgradient of the Site currently exists", because municipal water is provided. In deference to addressing imminent threats to human health, especially when the extent of DNAPL and dissolved phase contaminants is not fully understood, a door-to-door survey should be performed, which would include an evaluation of the plant's use of groundwater. Beazer does not address the plant's current use of their production well for sanitary use. Additionally, from experience in this type of "rural" setting, historic and/or current wells/springs may be present and could be in use. Beazer should assess the condition of Koppers Industries' well and off-site groundwater use, protective of Koppers Industries' workers and any potential off-site groundwater users. It should be noted that the regulators required an evaluation of off-site risk posed by groundwater use, under Beazer's then understanding of conditions, and it was found to provide an unacceptable risk, but not to be actively remedied by Beazer due to the reported non-use scenario. Both current and future exposures could be realized should a more thorough assessment of the presence/use of wells and any impacts by DNAPL or dissolved phase constituents thereon not be conducted. This specifically relates to the ability to use the monitored natural attenuation approach in Beazer's cleanup plans.

I request that you address Koppers Industries concerns that are expressed herein with regard to the planned completion of your RFI work and future corrective actions.



- A. Electron acceptors and inorganic metabolic by-products in groundwater – these are directly involved in dpCOI biodegradation, if it is occurring. The following behavior would be consistent with biodegradation:

Parameter	Expected Behavior if NA Process Are Destructively Transforming dpCOIs
Dissolved Oxygen (DO)	Highest concentrations in the absence of dpCOIs, depleted in the presence of dpCOIs and low or nondetectable in the dpCOI source area.
Nitrate	Qualitatively similar to dissolved oxygen
Manganese	Lowest concentrations in background, highest in the source area; gradual decrease downgradient of source area.
Iron	Qualitatively similar to manganese
Sulfate	Qualitatively similar to dissolved oxygen
Methane	Qualitatively similar to manganese

- B. General groundwater geochemistry parameters – these have potential to contribute useful information to the NA Evaluation:

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
Oxidation / Reduction Potential (ORP)	Highest readings in background, lowest in the source area, and gradual increase downgradient of the source area.
Carbon dioxide	Lowest concentration in background, highest in the source area, gradual decrease downgradient of the source area.
PH	Highest reading in background, lowest in the source area, and gradual increase downgradient of the source area; strong trends not expected.
Alkalinity	Lowest concentrations in background, highest in the source area, gradual decrease downgradient of the source area; strong trends not expected.
Ammonia	Lowest concentrations in background, highest in the source area, and gradual decrease downgradient of the source area.
Ortho-phosphate	Highest concentration in background, lowest in the source area, and gradual increase downgradient of the source area.
Conductivity	No expectation; general background information
Chloride	No expectation; general background information and may also be useful for calculation of dpCOI degradation rates.

T. Cook



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

Koppers / Beazer  
Grenada Co.  
HSWA File

4WD-RPB

DEC 04 2000

Mr. Michael W. Bollinger  
Environmental Manager  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219

SUBJ: Management of Cuttings Generated  
During Field Work to Complete Phase II  
RCRA Facility Investigation (RFI)  
Dated, August 10, 2000  
Koppers Industries/Beazer East, Inc.  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has reviewed the August 10, 2000 letter to manage cuttings generated during field work to complete the Phase II RCRA Facility Investigation (RFI) for Koppers Industries/Beazer East, located in Tie Plant, Mississippi. EPA noted that the off-site drill cuttings will be contained in one 20 cubic yard roll-off bin per boring. The composite five soil samples per bin will be analyzed for pentachlorophenol (PCP) and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270 and benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021. EPA concurs that if the analytical results for the samples will be at or below the detection limits, the facility can place the cuttings on the land surface at each boring location. Please keep in mind if the soil cuttings analytical results indicate constituent concentrations higher than the detection limit, the cuttings will be transported to an appropriate off-site facility for disposal. Based on its review, EPA hereby approves the drill cutting characterization and management plan to complete the Phase II RFI. Please submit the results and conclusions of this drill cutting characterization and management plan, within ninety (90) calendar days after the receipt of this letter.

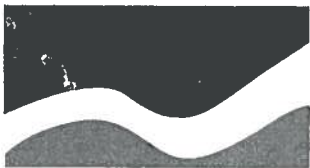
If you have any question(s) regarding this letter, please contact Mr. Harbhajan Singh of my staff at (404) 562-8473.

Sincerely,

Narindar M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

CC: Robert Markwell, Beazer East  
Jennifer Abrahams, HSI GeoTrans  
Timothy Basilone, Koppers Industries  
Jerry Cain, MDEQ

T. Cook



**HSI**  
**GEOTRANS**  
A TETRA TECH COMPANY

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35 Prospect Park Drive  
Suite 40  
Rancho Cordova, California  
95670  
916-853-1800 FAX 916-853-1860

August 10, 2000

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
South Programs Section

Subject: Management of Cuttings Generated  
During Field Work to Complete  
Phase II RFI  
Koppers Industries/Beazer East  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

RECEIVED  
AUG 14 2000  
U.S. Environmental Quality  
Office of Pollution Control

Dear Mr. Kumar:

This letter is submitted on behalf of Beazer East, Inc. to present a sampling program to characterize cuttings generated during the implementation of the August 16, 1999 Work Plan to Complete Phase II RCRA Facility Investigation (Work Plan) at the Koppers Industries, Inc. Grenada Facility (Site). The cuttings characterization will be used for management of the cuttings. Mr. Robert Markwell of Beazer East, Inc. discussed this characterization and management approach conceptually with Mr. Harbhajan Singh, of your staff. Mr. Singh requested a letter documenting the management plan.

The Work Plan objectives include refining the lateral and vertical extent of dissolved-phase constituents of interest (dpCOI) in both the Upper and Lower Sand Zones, east of the Site. The implementation of the Work Plan includes drilling a minimum of five vertical profile borings east of the Site to delineate the extent of detectable dpCOI. The boring locations are anticipated to be near the lateral and vertical extent of dpCOI. Therefore, the cuttings generated during the off-site drilling program are anticipated to have very low or non-detectable concentrations of constituents of interest.

The off-site drill cuttings are contained in one 20 cubic yard roll-off bin per boring. The recommended characterization includes collecting five soil samples per bin, compositing the samples, and submitting the composite sample for laboratory analysis of:

- pentachlorophenol and polynuclear aromatic hydrocarbons (PAHs) by EPA method 8270. The detection limits for these constituents are 4 milligrams per kilogram (mg/Kg) for pentachlorophenol, and, 0.6 mg/Kg for each PAH analyte; and



Mr. Narinda M. Kumar  
U.S. Environmental Protection Agency  
August 10, 2000  
Page 2

- benzene, toluene, ethylbenzene, and xylenes by EPA method 8021. The detection limits for these constituents are 0.1 mg/Kg for benzene, and 0.2 mg/Kg each for toluene, ethylbenzene, and xylenes.

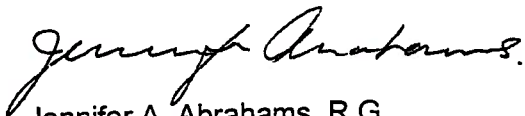
If the analytical results for the cuttings are at or below the detection limits, Beazer proposes to place the cuttings on the land surface at each off-site boring location. The cuttings will be spread with a backhoe to distribute the soil and approximate the original topographic relief. If the soil cutting analytical results indicate significant COI concentrations (i.e., the concentrations are more than two times the detection limit), the cuttings will be transported to an appropriate facility for disposal.

The off-site drilling program began on July 31, 2000, and is anticipated to conclude by August 31, 2000. Beazer requests your timely review of this drill cutting characterization and management plan so appropriate measures can be followed to manage the cuttings.

If you have any questions concerning this drill cutting characterization and management plan, please contact Mike Bollinger at (412) 208-8864 or Rob Markwell at (412) 208-8812.

Sincerely,

**HSI GEOTRANS**



Jennifer A. Abrahams, R.G.  
Project Manager

cc: Harbhajan Singh, EPA  
Jerry Cain, MSDEQ  
Rob Markwell, Beazer  
Mike Bollinger, Beazer  
Bob Fisher, Beazer

**HSI GEOTRANS**



**HSI  
GEOTRANS**

A TETRA TECH COMPANY

*Grenada Co.*  
*HSWA File*  
3035 Prospect Park Drive  
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916-853-1800 FAX 916-853-1860

August 25, 2000

P:\PROJECTS\BEAZER\GRENADA\PA432\EPA\_E\memo\_tran.wpd

RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303



Attn: Mr. Narinda M. Kumar, Chief  
RCRA Programs Branch  
Waste Management Division

Subject: Updated Environmental Indicator Project Schedule  
*Koppers Industries/Beazer East*  
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

On behalf of Beazer East, Inc., attached is an updated Environmental Indicator Project Schedule (EI Project Schedule) for the Koppers Industries/Beazer East Facility in Grenada, Mississippi (Site). The text of the EI Project Schedule has been updated to incorporate interim measures performed at the Site, from April 1999 through April 2000. The time schedule in the EI Project Schedule, provided in the EPA's March 9, 2000 letter, has been incorporated in the updated EI Project Schedule without changes.

Two different copies of the EI Project Schedule are attached:

- The original EI Project Schedule with the revisions added in "strike-out" mode; and
- The updated EI Project Schedule.

In addition, a disk with electronic files of the updated EI Project Schedule is included in the package transmitted to Mr. Harbhajan Singh. The disk contains the EI Project Schedule in both MSWord and Word Perfect software formats.

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864 or Rob Markwell at (412) 208-8812.

Sincerely,

HSI GEOTRANS

Jennifer A. Abrahams, R.G.  
Project Manager

cc: ☒ Mr. Harbhajan Singh, EPA  
☒ Mr. Jerry Cain, MS DEQ  
Mr. Tim Basilone, KII

Mr. Rob Markwell, Beazer  
Mr. Mike Bollinger, Beazer

## Project Schedule for Meeting Environmental Indicators

### I. Basic Information

Name and I.D. No.	Location (City or Town)	Date of Latest EI Memo	CA 725	CA 750
Koppers Industries/Beazer East MSD 007 027 543	Tie Plant, Mississippi	March 28, 1996	No	No

### II. Brief Facility Background

The Koppers Industries/Beazer East site consists of 171 acres located one mile south of Grenada, Mississippi. The Site is approximately 1.2 miles long and 0.3 miles wide. Two surface water bodies, referred to as the Northern Stream and Central Ditch, flow northeast across the Site towards the Batupan Bogue.

The facility manufactures treated wood products such as railroad ties, poles, and lumber using various conditioning and treating processes. The wood treatment operations involving creosote and pentachlorophenol (PCP) based preservatives, have been conducted at the Site since 1904. The main Constituents-of-Concern (COCs) at the Site are pentachlorophenol, benzene, and polynucleated aromatic hydrocarbons (PAHs).

The RFA identified thirteen (13) SWMUs in 1987. The Site ranked as a high priority facility under the NCAPs in 1992. The HSWA Permit was reissued in September 1998, which identified a total of seventeen (17) SWMUs at the facility. At present, fourteen (14) SWMUs are subject to the RFI and the RFI activities are in progress. ~~The former Wastewater Treatment System (SWMU 11) is undergoing Interim Measures (IM).~~

The Interim Measure for SWMU 11 (IM), approved by EPA Region 4 and permitted by the US Army Corps of Engineers, was implemented at the site from April 1999 through April 2000. The scope of the implemented IM included:

- constructing a sediment disposal area north of the Central Ditch in SWMU 11;
- excavating impacted sediments from approximately 450 lineal feet on the on-site Central Ditch. The impacted sediments were placed in the sediment disposal area;
- reconstructing the on-site Central Ditch to include installation of a dense non-aqueous phase liquid (DNAPL) recovery system consisting of six under-drain sumps;
- backfilling the Central Ditch with clean fill;
- excavating impacted sediments from approximately 4,300 lineal feet of the off-site Central Ditch, extending to the confluence of the Batupan Bogue.

- The impacted sediments were placed in the sediment disposal area;
- adding two grade control structures to the Central Ditch immediately downgradient of the site property line to protect the reconstructed on-site ditch and limit scouring of the downstream ditch;
- backfilling the off-site Central Ditch with clean fill to restore the ditch to the original profile;
- installing a sheet pile cutoff wall in the north bank of the on-site Central Ditch in SWMU 11. The cutoff wall is designed to prevent DNAPL migration to the Central Ditch;
- installing five DNAPL recovery wells immediately upgradient of the cutoff wall; and
- constructing a cap to cover and isolate the impacted sediments in the sediment disposal area.

A total of 29,200 cubic yards of impacted materials were placed in the sediment disposal area. This volume includes 3073 tons of kiln dust added to the excavated sediments for absorbcency to stabilize the sediments

### **III. Brief Outline of Issues Leading to an EI of NO or IN**

#### **A. CA 725**

Soils at the facility are contaminated at concentrations above relevant action levels. Soils are contaminated over most of the Central Process Area; and Drip Track Area, and Former Wastewater Treatment System. The soil contamination was also detected at the Old South Drip Pad/Track Area. Plausible human exposures to this contamination include on-site workers and off-site downwind residences by air.

Releases from SWMUs have also historically contributed contamination to the surface water and sediments in three areas. This includes: the Central Ditch, Northern Stream, and Process Cooling Reservoir. ~~Trespassers are the potential human receptors due to off site sediment contamination in the Central Ditch.~~ The impacted surface water and sediments in the Central Ditch have been remediated through the implementation of the IM. There are no potential receptors to off-site sediment contamination.

#### **B. CA 750**

Releases from the SWMUs have contaminated groundwater at the facility above relevant action levels. ~~According to the 1996 EI, groundwater is uncontrolled because on-site contamination is seeping into the Central Ditch which leads off-site.~~ The implementation of the IM has mitigated the continuation of on-site COCs seeping into the Central Ditch. Therefore, the impacted groundwater is controlled because the on-going seepage of DNAPL into the Central Ditch has been prevented.

### **IV. Discussion of What is Needed to Get to Yes, with Schedule (a.k.a EI Interim Milestone)**

#### **A. CA 725**

An Interim Measures Work Plan for the Central Ditch and Former Wastewater Treatment System was approved in 1998 and 1999, respectively. The ~~Work Plans~~ implementation of the IM included ~~an~~ excavation of impacted sediments and installation of a geocomposite clay liner on the Former Wastewater Treatment System and Central Ditch. This ~~will~~ has eliminated worker exposure to the contaminated soils in these areas and ~~eventually~~ exposure to the off-site downwind residences to air. ~~This will also prevent~~ The implementation of the IM has also prevented contaminated groundwater from seeping into the off-site area of the Central Ditch. ~~From the property line to Transect 22 Sampling of the off site Central Ditch,~~ Impacted sediments will be were excavated and the areas excavated will be were backfilled. ~~From Transect 22 from the property line to the Batupan Bogue all visually impacted material will be removed.~~ This ~~will~~ has eliminated trespasser exposure to the off-site sediment contamination in the Central Ditch. ~~The stabilization construction for the Former Wastewater Treatment System and Central Ditch and submittal of the Interim Measures (IM) Report are is~~ scheduled in September 2000. The facility needs approval of the implementation of the IM.

Based on the above discussion, it is projected that CA 725 will reach YE for Koppers in Fiscal Year 2001. ~~However, a re-evaluation for EIs by using the recent (2/5/99) HQs Guidance is planned in the 4<sup>th</sup> quarter of Fiscal Year 2000.~~

#### CA 750

Interim Measures Work Plan for the Central Ditch was approved in 1998, ~~which.~~ The implementation of the IM included excavating sediment, installing a sheet pile along the north side of the Ditch, installing grade control structure, etc. The stabilization construction for the Central Ditch was completed in April 2000, and ~~Submittal of the Interim Measures (IM) Report are is scheduled in 2000 for September 2000.~~ The implementation of the IM has mitigated This will mitigate migration of COCs in groundwater from on-site source areas to downgradient off-site areas. In addition, there is a possibility that the groundwater plume will tend to stabilize. The facility needs approval of the implementation of the IM.

Based on the above discussion, it is projected that CA 750 will reach YE for Koppers in Fiscal Year 2001. ~~However, a re-evaluation for EIs by using the recent (2/5/99) HQs Guidance is planned in the 4<sup>th</sup> quarter of Fiscal Year 2000.~~

<b>Koppers Industries/Beazer East</b> <b>MSD 007 027 543</b>				
<b>Activity(ies)</b>	<b>Activity CA RCRIS Event Code</b>	<b>Scheduled Date (QTR &amp;FY)</b>	<b>EI Code (725/750)</b>	<b>Remarks (Include unit and description of actions)</b>
Stabilization Construction Complete	CA 650	3/30/00	725 and 750	Excavation of sediments and installation of a geocomposite clay liner on the Former Wastewater Treatment System and Central Ditch
Interim Measures Report Received	CA 640	9/30/00	725 and 750	Report on completion of sediments excavation and installation of a geocomposite clay liner
Interim Measures Report Approved	CA 646	9/30/01	725 and 750	Report on completion of sediments excavation and installation of a geocomposite clay liner
Current Human Exposures Under Control Determination	CA 725	9/30/01	725	Revised EI Memo High Confidence
Migration of Contaminated Groundwater Under Control	CA 750	9/30/01	750	Revised EI Memo High Confidence
A re-evaluation for EIs by using the recent (2/5/99) EPA HQs Guidance is planned in the 4 <sup>th</sup> quarter of Fiscal Year 2000 and the schedule will be modified according to the findings of this re-evaluation.				



## V. Level of Confidence in Meeting EIs, and Major Issues

The meeting of EIs depends primarily on the approval of the implementation of the interim measures of the Wastewater Treatment Plant (SWMU 11) and Central Ditch. ~~At present, the facility is actively involved in the implementation of these measures and it is predicted that it can meet EIs in Fiscal year 2001.~~ The IM has been implemented and the submittal of the IM Documentation Report is scheduled for September 2000. Therefore, it is highly predicted that the facility can meet EIs in Fiscal Year 2001.

## Project Schedule for Meeting Environmental Indicators

### I. Basic Information

Name and I.D. No.	Location (City or Town)	Date of Latest EI Memo	CA 725	CA 750
Koppers Industries/Beazer East MSD 007 027 543	Tie Plant, Mississippi	March 28, 1996	No	No

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The facility manufactures treated wood products such as railroad ties, poles, and lumber using various conditioning and treating processes. The wood treatment operations involving creosote and pentachlorophenol (PCP) based preservatives, have been conducted at the Site since 1904. The main Constituents-of-Concern (COCs) at the Site are pentachlorophenol, benzene, and polynucleated aromatic hydrocarbons (PAHs).

The RFA identified thirteen (13) SWMUs in 1987. The Site ranked as a high priority facility under the NCAPs in 1992. The HSWA Permit was reissued in September 1998, which identified a total of seventeen (17) SWMUs at the facility. At present, fourteen (14) SWMUs are subject to the RFI and the RFI activities are in progress.

The Interim Measure for SWMU 11 (IM), approved by EPA Region 4 and permitted by the US Army Corps of Engineers, was implemented at the site from April 1999 through April 2000. The scope of the implemented IM included:

- constructing a sediment disposal area north of the Central Ditch in SWMU 11;
- excavating impacted sediments from approximately 450 lineal feet on the on-site Central Ditch. The impacted sediments were placed in the sediment disposal area;
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- backfilling the Central Ditch with clean fill;
- excavating impacted sediments from approximately 4,300 lineal feet of the off-site Central Ditch, extending to the confluence of the Batupan Bogue. The impacted sediments were placed in the sediment disposal area;



- adding two grade control structures to the Central Ditch immediately downgradient of the site property line to protect the reconstructed on-site ditch and limit scouring of the downstream ditch;
- backfilling the off-site Central Ditch with clean fill to restore the ditch to the original profile;
- installing a sheet pile cutoff wall in the north bank of the on-site Central Ditch in SWMU 11. The cutoff wall is designed to prevent DNAPL migration to the Central Ditch;
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#### **A. CA 725**

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Releases from SWMUs have also historically contributed contamination to the surface water and sediments in three areas. This includes: the Central Ditch, Northern Stream, and Process Cooling Reservoir. The impacted surface water and sediments in the Central Ditch have been remediated through the implementation of the IM. There are no potential receptors to off-site sediment contamination.

#### **B. CA 750**

Releases from the SWMUs have contaminated groundwater at the facility above relevant action levels. The implementation of the IM has mitigated the continuation of on-site COCs seeping into the Central Ditch. Therefore, the impacted groundwater is controlled because the on-going seepage of DNAPL into the Central Ditch has been prevented.

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off-site area of the Central Ditch. Impacted sediments were excavated and the areas excavated were backfilled from the property line to the Batupan Bogue. This has eliminated trespasser exposure to the off-site sediment contamination in the Central Ditch. The submittal of the Interim Measures (IM) Report is scheduled in September 2000. The facility needs approval of the implementation of the IM.

Based on the above discussion, it is projected that CA 725 will reach YE for Koppers in Fiscal Year 2001. **CA 750**

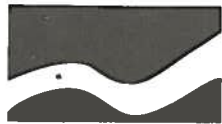
Interim Measures Work Plan for the Central Ditch was approved in 1998. The implementation of the IM included excavating sediment, installing a sheet pile along the north side of the Ditch, installing grade control structure, etc. The stabilization construction for the Central Ditch was completed in April 2000. Submittal of the Interim Measures (IM) Report is scheduled for September 2000. The implementation of the IM has mitigated migration of COCs in groundwater from on-site source areas to downgradient off-site areas. In addition, there is a possibility that the groundwater plume will tend to stabilize. The facility needs approval of the implementation of the IM.

Based on the above discussion, it is projected that CA 750 will reach YE for Koppers in Fiscal Year 2001.

Koppers Industries/Beazer East MSD 007 027 543				
Activity(ies)	Activity CA RCRIS Event Code	Scheduled Date (QTR &FY)	EI Code (725/750)	Remarks (Include unit and description of actions)
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A re-evaluation for EIs by using the recent (2/5/99) EPA HQs Guidance is planned in the 4 <sup>th</sup> quarter of Fiscal Year 2000 and the schedule will be modified according to the findings of this re-evaluation.				

**V. Level of Confidence in Meeting EIs, and Major Issues**

The meeting of EIs depends primarily on the approval of the implementation of the interim measures of the Wastewater Treatment Plant (SWMU 11) and Central Ditch. The IM has been implemented and the submittal of the IM Documentation Report is scheduled for September 2000. Therefore, it is highly predicted that the facility can meet EIs in Fiscal Year 2001.



HSI  
GEOTRANS  
A TETRA TECH COMPANY

LETTER OF TRANSMITTAL

Grenada  
County.  
HazWaste File  
Koppers Inc

3035 Prospect Park Drive, Suite 40, Rancho Cordova, CA 95670 ■ (916) 853-1800 ■ (916) 853-1860 (FAX)

TO: Mr. Jerry Cain DATE: June 1, 2000  
Mississippi Dept. Env. Quality RE: Response to EPA's Mar. 27, 2000  
2380 Highway West 80 Comments  
Jackson, MS 39204 JOB NO.: P185

We are sending you the following:

No. Of Copies	Description
1	Response to EPA's March 27, 2000 Comments on the Aug. 16, 1999
	Response to Comments on the Work Plan to Complete Phase II
	RCRA Facility Investigation, Koppers Industries, Inc.
	Grenada Facility, Grenada, MS

These are Transmitted as checked below:

- |   |  |
|---|--|
| <input type="checkbox"/> For approval           | <input type="checkbox"/> Approved as submitted               |
| <input type="checkbox"/> For your use           | <input type="checkbox"/> Approved as noted                   |
| <input type="checkbox"/> As requested           | <input type="checkbox"/> Returned for corrections            |
| <input type="checkbox"/> For review and comment | <input checked="" type="checkbox"/> Other <u>Replacement</u> |

REMARKS: This document replaces document sent on May 31, 2000.

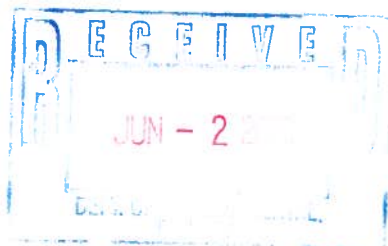
Transmitted by:

- ☐ First Class Mail  
☒ Federal Express  
☐ Courier  
☐ Registered Mail  
☐ UPS  
☐ Other \_\_\_\_\_

Signed:

Lori Milward  
Lori Milward

cc: \_\_\_\_\_





# HSI GEOTRANS

A TETRA TECH COMPANY

3035 Prospect Park Drive  
Suite 40  
Rancho Cordova, California  
95670

916-853-1800 FAX 916-853-1860

June 1, 2000

P:\PROJECTS\BEAZER\GRENADA\185\EPAMAR00\COMM\_RESP\_TRAN.DOC

JUN 2000  
Received

RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
South Programs Section

Subject: Response to EPA's March 27, 2000 Comments on the August 16, 1999  
Response to Comments on the Work Plan to Complete  
Phase II RCRA Facility Investigation  
Koppers Industries, Incorporated  
Grenada Facility, Grenada, Mississippi

Dear Mr. Kumar:

On behalf of Beazer East, Inc., attached are two copies of the Response to the EPA's March 27, 2000 comments on the August 16, 1999 Response to Comments on the Final Phase II RCRA Facility Investigation Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi. The response approach to address the ecological risk assessment at the Central Ditch and Northern Stream was conceptually discussed with Mr. Harbhajan Singh and Mr. Lynn Wellman of your staff, on May 5, 2000. As a result of this discussion, a work plan to further characterize sediments in the Northern Stream is attached to this response.

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864 or Rob Markwell at (412) 208-8812.

Sincerely,

HSI GEOTRANS

Jennifer A. Abrahams, R.G.  
Project Manager

cc: Mr. Jerry Cain, MS DEQ  
Mr. Tom Henderson, KII  
Mr. Tim Basilone, KII  
Mr. Mike Bollinger, Beazer

Mr. Rob Markwell, Beazer  
Dr. Mark King, Groundwater Insight  
Ms. Allison Nightingale, Ogden  
Mr. Bob Cohen, HSI GeoTrans

**Responses to Comments on the Work Plan to Complete the  
Phase II RCRA Facility Investigation,  
KII, Grenada Facility, Grenada, Mississippi**

**General Comment 1. On-Site Residential Exposure.** Beazer will work with Koppers Industries, Inc. (KII), the current owner of the facility, as well as the local government, if necessary, to develop the right combination of controls to ensure long-term protection of human health and the environment.

**General Comment 2. Screening-Level Ecological Risk Assessment.** As discussed on the May 5, 2000 conference call between Beazer, its representatives and EPA, Beazer will conduct additional analytical sampling of Northern Stream sediments to further characterize the extent of elevated PAH concentrations. Available data suggest that at least one, and possibly two, Northern Stream sediment sampling locations on the Facility have PAH concentrations that are substantially higher than the other seven Northern Stream sampling locations. In addition, the PAH concentrations at these two locations are higher than most screening level benchmarks. This suggests that a screening level risk assessment would conclude that a potential ecological risk may exist at one or both of these locations. The goal of the additional sampling (described in Attachment 1) is to better characterize the lateral extent of the elevated PAH concentrations and to determine whether the transition from elevated to low PAH concentrations is abrupt or gradual. This information will be used to determine what additional action will be needed in the Northern Stream. If the area with elevated PAH concentration is larger than currently assumed, additional characterization may be required (for example, whole sediment toxicity tests) to determine whether a potential ecological risk exists in the Northern Stream. If sediments with elevated PAH concentrations are limited in extent, then a focussed remedial action could be undertaken (for example, removal of a limited area of sediments) to eliminate the potential for an ecological risk.

**Specific Comment 1. Distinguish Between Destructive and Non-Destructive/ Transport Processes.** The Short Term MNA Evaluation will distinguish between destructive and non-destructive transport processes in two general ways:

1. The methods described by EPA (Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents, 1998), or comparable methods, will be applied to estimate transformation rates. These simple calculations are based on: 1) comparison of dissolved-phase constituents of interest (dpCOIs) with recalcitrant solutes (if any are present) and 2) comparison of dpCOI concentrations between monitor wells that are located approximately along the path of groundwater flow. Application of these methods is intended to allow separation of non-destructive transport processes (advection, dispersion and sorption) from destructive processes (biodegradation).
2. The *tendency* for destructive processes to occur will be identified on the basis of redox-related monitoring parameters and microbial parameters. A summary of the indicators of natural attenuation that will be examined in the Short Term MNA Evaluation follows:



- A. Electron acceptors and inorganic metabolic by-products in groundwater – these are directly involved in dpCOI biodegradation, if it is occurring. The following behavior would be consistent with biodegradation:

Parameter	Expected Behavior if NA Process Are Destructively Transforming dpCOIs
Dissolved Oxygen (DO)	Highest concentrations in the absence of dpCOIs, depleted in the presence of dpCOIs and low or nondetectable in the dpCOI source area.
Nitrate	Qualitatively similar to dissolved oxygen
Manganese	Lowest concentrations in background, highest in the source area; gradual decrease downgradient of source area.
Iron	Qualitatively similar to manganese
Sulfate	Qualitatively similar to dissolved oxygen
Methane	Qualitatively similar to manganese

- B. General groundwater geochemistry parameters – these have potential to contribute useful information to the NA Evaluation:

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
Oxidation / Reduction Potential (ORP)	Highest readings in background, lowest in the source area, and gradual increase downgradient of the source area.
Carbon dioxide	Lowest concentration in background, highest in the source area, gradual decrease downgradient of the source area.
PH	Highest reading in background, lowest in the source area, and gradual increase downgradient of the source area; strong trends not expected.
Alkalinity	Lowest concentrations in background, highest in the source area, gradual decrease downgradient of the source area; strong trends not expected.
Ammonia	Lowest concentrations in background, highest in the source area, and gradual decrease downgradient of the source area.
Ortho-phosphate	Highest concentration in background, lowest in the source area, and gradual increase downgradient of the source area.
Conductivity	No expectation; general background information
Chloride	No expectation; general background information and may also be useful for calculation of dpCOI degradation rates.



- C. Surrogate parameter – this parameter provides a method to test indirectly for the presence of dpCOIs and for organic by-products that may be produced through biodegradation.

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
Total Organic Carbon (TOC)	Lowest concentration in background, highest in the source area, and gradual decrease downgradient of the source area; potentially useful as a "surrogate" indicator for the presence of dpCOIs.

- D. Microbial parameters – Phospholipid Fatty Acids (PLFAs) are a potentially useful indicator of microbial activity associated with dpCOI biodegradation, and will be evaluated as follows:

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
PLFA – Biomass content	Lowest concentrations in background, highest within the plume
PLFA – Community diversity	Differences between plume and background
PLFA – Principal components analysis	Separation expected between background and plume samples
PLFA – Growth phase	Samples from within the plume are expected to show that microbes are growing more rapidly than those in background samples.
PLFA – Membrane permeability	Samples from within the plume are expected to show that microbial membranes are less permeable than those in background samples, due to adaptation to plume conditions.

The Short Term MNA Evaluation will also consider a broad spectrum dpCOIs that have been identified as potential concerns associated with the site, including: polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol, and benzene, toluene, ethylbenzene and xylene (BTEX) constituents. It is expected, on the basis of existing site data, that several individual constituents will be detected more widely, due to solubility considerations and predominance in source material. The MNA evaluation will focus on these constituents, to ensure that it provides a "worst case" approach. However, data for all PAH, PCP and BTEX constituents will be reviewed, and considered in the evaluation.

The Short Term MNA results will contribute to the design of the Long Term MNA Monitoring Plan in the following ways:

- Parameters that are identified to show conclusive MNA interpretations (either supportive or non-supportive) will be highlighted for inclusion in the program;
- Parameters that are inconclusive will be considered for exclusion from the program;
- Parameters that are identified as useful for providing indirect evidence of dpCOI presence will be highlighted for inclusion in the program;
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  - along the plume center line
  - at or near the plume front
  - at or near the front of a characteristic plume redox zone
  - representative of the plume source area or
  - representative of background conditions.

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Figure 3-2 in the Work Plan presents the NA borings sampled in 1997. These were grab sample locations and will not be part of the MNA evaluation.

The Short Term MNA sample locations are described in Table 4-2 of the Work Plan, and graphically presented in Figures 4-1 and 4-2 of the Work Plan. These sample locations include 24 existing wells and 14 new grab water samples. The MNA Evaluation has been designed to take advantage of additional plume delineation work that will be conducted to complete the

Phase II RFI, as well as use existing sampling locations. Key features supporting the number and location of monitoring points to be used in the MNA Evaluation include:

- The distribution of dpCOI has been identified as being potentially bifurcated; consequently, monitoring locations have been located to characterize MNA for both potential lobes.
- For each potential lobe, a conventional approach (e.g., USEPA, 1998) has been applied whereby MNA data would be collected at the following locations: background; dpCOI source zone; along the center line of dpCOI distributions; and at or near the downgradient extent of dpCOI distributions. This conventional "center line" approach to MNA Evaluation is applied because plume center line concentrations will generally provide an indication of the worst case migration scenario. However, this worst case assumption will be further evaluated with additional characterization of dpCOI distributions, as noted below.
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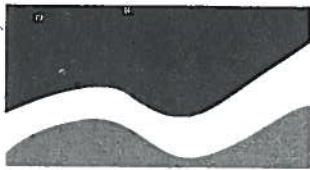
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**Specific Comment 27. Response to EPA Comment #34.** Surface water benchmarks. Please refer to the responses to General Comment 2 and Specific Comment 24.

***ATTACHMENT***



**HSI  
GEOTRANS**

A TETRA TECH COMPANY

3035 Prospect Park Drive  
Suite 40  
Rancho Cordova, California  
95670

916-853-1800 FAX 916-853-1860

June 1, 2000

RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attention: Mr. Harbhajan Singh

Subject: Workplan to Further Characterize Sediments  
in the Northern Stream  
Koppers Industries, Inc.  
Grenada Facility  
Grenada, Mississippi

Dear Mr. Singh:

This workplan is submitted on behalf of Beazer East, Inc. to further characterize PAH concentrations in sediments in the Northern Stream at the Koppers Industries, Inc. (KII) facility in Grenada, Mississippi. The results of this proposed work will be used to determine whether additional biological investigations of Northern Stream sediments will be required to determine whether an unacceptable ecological risk is present.

### **SCOPE OF WORK**

The field investigations will be performed in accordance with sampling procedures and quality assurance objectives specified in the January 8, 1997 *RCRA Facility Investigation, Work Plan Addendum, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi*. The Health and Safety Plan presented in the August 16, 1999 *Work Plan to Complete Phase II RCRA Facility Investigation, KII Grenada Facility, Grenada, Mississippi* (Work Plan to Complete RFI) will be followed during the sampling procedures described in this workplan. The scope of work is described below.

- 1) Collect sediments from six locations across the Northern Stream, as shown on Figure 1. All locations are on-Site.
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Mr. Harbhajan Singh  
U.S. Environmental Protection Agency  
June 1, 2000  
Page 2

The pattern of the five sublocations will consist of the following: two sublocations along the northern stream bank, one sublocation in the center of the stream, and two sublocations along the southern stream bank;

- 3) The five sediment samples from the sublocations will be composited in the field and submitted to a certified laboratory for PAH, total organic carbon (TOC) and grain size analyses
- 4) Describe lithology of sediment samples, including visual evidence of NAPL.

A summary of field activities and laboratory results for the Northern Stream investigations will be included in the update to the *Revised Final Phase II RCRA Facility Investigation Report, KII Grenada Facility, Grenada, Mississippi* (HSI GeoTrans, November 1998). The update will also include the results of the work implemented in accordance with the Work Plan to Complete RFI.

#### **SCHEDULE**

Beazer plans to schedule this work coincident with the implementation of the approved Work Plan to Complete RFI, assuming the EPA concurs with this workplan. This schedule will allow a single mobilization to the site to collect samples to complete the RFI.

If you have any questions regarding this workplan, please call Mike Bollinger at (412) 208-8864, or Rob Markwell at (412) 208-8812.

Sincerely,

#### **HSI GEOTRANS**

*Lori Milward*  
*for*

Jennifer A. Abrahams, R.G.  
Project Manager

*Jeff Besch*

Jeffrey C. Besch, P.E.  
Sacramento Operations Manager

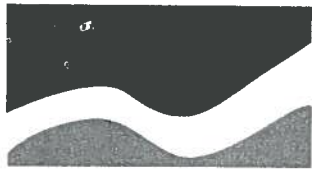
#### **Attachments**

cc: Jerry Cain, MS DEQ  
Mike Bollinger, Beazer  
Rob Markwell, Beazer

Bob Cohen, HSI GeoTrans  
Paul Anderson, Ogden  
Mark King, Groundwater Insight

**HSI GEOTRANS**





**HSI  
GEOTRANS**

A TETRA TECH COMPANY

3035 Prospect Park Drive  
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Rancho Cordova, California  
95670

916-853-1800 FAX 916-853-1860

May 31, 2000

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RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

Attn: Mr. Narinda M. Kumar, Chief  
South Programs Section

Subject: Response to EPA's March 27, 2000 Comments on the August 16, 1999  
Response to Comments on the Work Plan to Complete  
Phase II RCRA Facility Investigation  
Koppers Industries, Incorporated  
Grenada Facility, Grenada, Mississippi

Dear Mr. Kumar:

On behalf of Beazer East, Inc., attached are two copies of the Response to the EPA's March 27, 2000 comments on the August 16, 1999 Response to Comments on the Final Phase II RCRA Facility Investigation Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi. The response approach to address the ecological risk assessment at the Central Ditch and Northern Stream was conceptually discussed with Mr. Harbhajan Singh and Mr. Lynn Wellman of your staff, on May 5, 2000. As a result of this discussion, a work plan to further characterize sediments in the Northern Stream is attached to this response.

If you have any questions regarding this transmittal, please contact Mike Bollinger at (412) 208-8864 or Rob Markwell at (412) 208-8812.

Sincerely,

HSI GEOTRANS

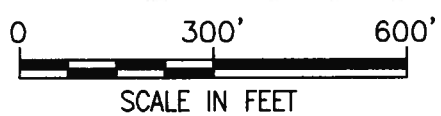
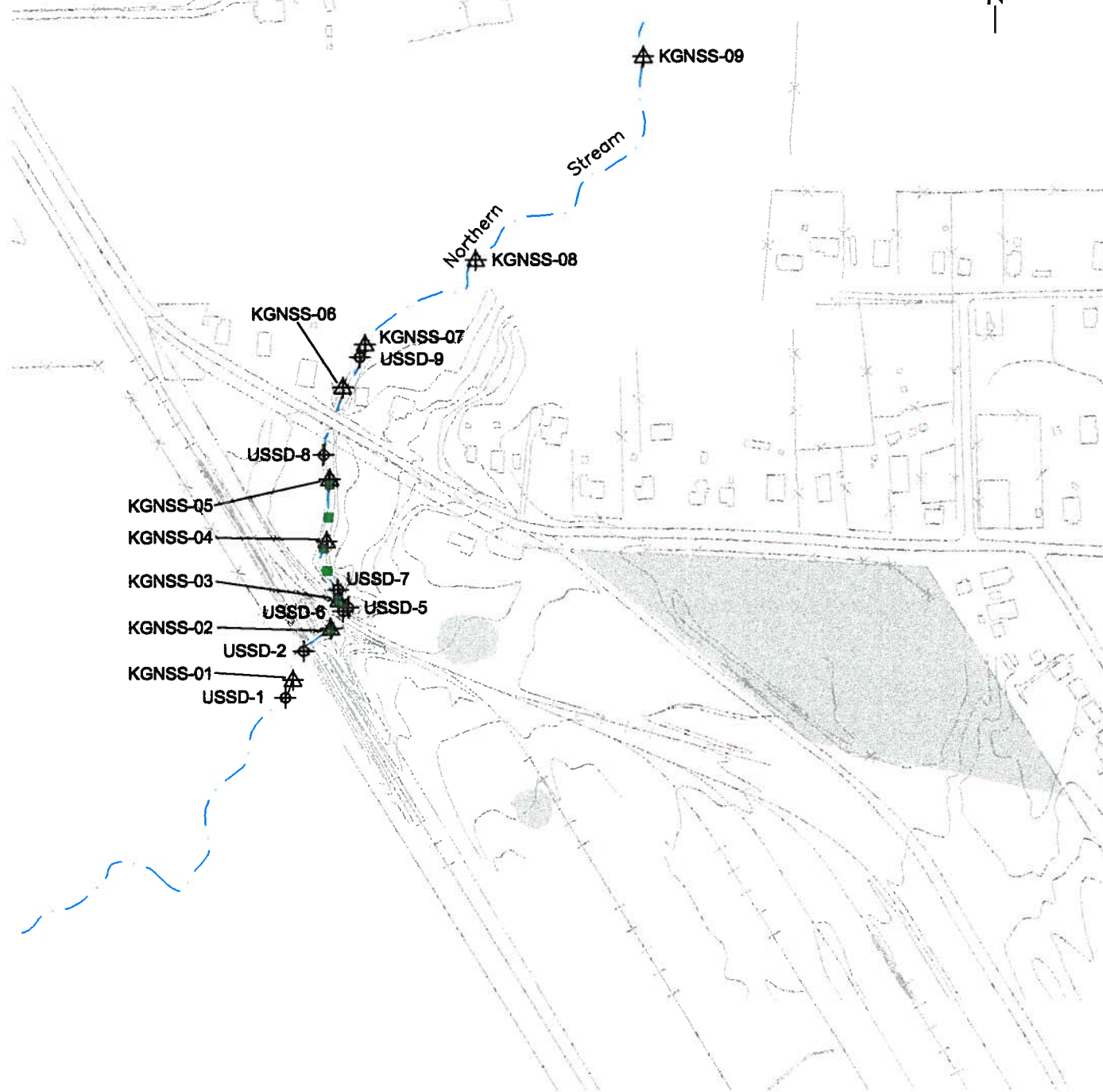
*Lori Milward for*

Jennifer A. Abrahams, R.G.  
Project Manager



cc: Mr. Jerry Cain, MS DEQ  
Mr. Tom Henderson, KII  
Mr. Tim Basilone, KII  
Mr. Mike Bollinger, Beazer

Mr. Rob Markwell, Beazer  
Dr. Mark King, Groundwater Insight  
Ms. Allison Nightingale, Ogden  
Mr. Bob Cohen, HSI GeoTrans



**EXPLANATION**

- ◆ PREVIOUS SEDIMENT SAMPLING LOCATIONS
- △ DECEMBER 1998 SEDIMENT SAMPLING LOCATIONS
- PROPOSED SEDIMENT SAMPLING LOCATIONS

**TITLE:** Proposed Sediment Sampling Locations at Northern Stream

**LOCATION:** Koppers Industries, Inc., Grenada, MS



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**FIGURE:**  
**1**

**Responses to Comments on the Work Plan to Complete the  
Phase II RCRA Facility Investigation,  
KII, Grenada Facility, Grenada, Mississippi**

**General Comment 1. On-Site Residential Exposure.** Beazer will work with Koppers Industries, Inc. (KII), the current owner of the facility, as well as the local government, if necessary, to develop the right combination of controls to ensure long-term protection of human health and the environment.

**General Comment 2. Screening-Level Ecological Risk Assessment.** As discussed on the May 5, 2000 conference call between Beazer, its representatives and EPA, Beazer will conduct additional analytical sampling of Northern Stream sediments to further characterize the extent of elevated PAH concentrations. Available data suggest that at least one, and possibly two, Northern Stream sediment sampling locations on the Facility have PAH concentrations that are substantially higher than the other seven Northern Stream sampling locations. In addition, the PAH concentrations at these two locations are higher than most screening level benchmarks. This suggests that a screening level risk assessment would conclude that a potential ecological risk may exist at one or both of these locations. The goal of the additional sampling (described in Attachment 1) is to better characterize the lateral extent of the elevated PAH concentrations and to determine whether the transition from elevated to low PAH concentrations is abrupt or gradual. This information will be used to determine what additional action will be needed in the Northern Stream. If the area with elevated PAH concentration is larger than currently assumed, additional characterization may be required (for example, whole sediment toxicity tests) to determine whether a potential ecological risk exists in the Northern Stream. If sediments with elevated PAH concentrations are limited in extent, then a focussed remedial action could be undertaken (for example, removal of a limited area of sediments) to eliminate the potential for an ecological risk.

**Specific Comment 1. Distinguish Between Destructive and Non-Destructive/ Transport Processes.** The Short Term MNA Evaluation will distinguish between destructive and non-destructive transport processes in two general ways:

1. The methods described by EPA (Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents, 1998), or comparable methods, will be applied to estimate transformation rates. These simple calculations are based on: 1) comparison of dissolved-phase constituents of interest (dpCOIs) with recalcitrant solutes (if any are present) and 2) comparison of dpCOI concentrations between monitor wells that are located approximately along the path of groundwater flow. Application of these methods is intended to allow separation of non-destructive transport processes (advection, dispersion and sorption) from destructive processes (biodegradation).
2. The *tendency* for destructive processes to occur will be identified on the basis of redox-related monitoring parameters and microbial parameters. A summary of the indicators of natural attenuation that will be examined in the Short Term MNA Evaluation follows:

- C. Surrogate parameter – this parameter provides a method to test indirectly for the presence of dpCOIs and for organic by-products that may be produced through biodegradation.

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
Total Organic Carbon (TOC)	Lowest concentration in background, highest in the source area, and gradual decrease downgradient of the source area; potentially useful as a "surrogate" indicator for the presence of dpCOIs.

- D. Microbial parameters – Phospholipid Fatty Acids (PLFAs) are a potentially useful indicator of microbial activity associated with dpCOI biodegradation, and will be evaluated as follows:

Parameter	Expected Behavior if NA Process are Destructively Transforming dpCOIs
PLFA – Biomass content	Lowest concentrations in background, highest within the plume
PLFA – Community diversity	Differences between plume and background
PLFA – Principal components analysis	Separation expected between background and plume samples
PLFA – Growth phase	Samples from within the plume are expected to show that microbes are growing more rapidly than those in background samples.
PLFA – Membrane permeability	Samples from within the plume are expected to show that microbial membranes are less permeable than those in background samples, due to adaptation to plume conditions.

The Short Term MNA Evaluation will also consider a broad spectrum dpCOIs that have been identified as potential concerns associated with the site, including: polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol, and benzene, toluene, ethylbenzene and xylene (BTEX) constituents. It is expected, on the basis of existing site data, that several individual constituents will be detected more widely, due to solubility considerations and predominance in source material. The MNA evaluation will focus on these constituents, to ensure that it provides a "worst case" approach. However, data for all PAH, PCP and BTEX constituents will be reviewed, and considered in the evaluation.

The Short Term MNA results will contribute to the design of the Long Term MNA Monitoring Plan in the following ways:

- Parameters that are identified to show conclusive MNA interpretations (either supportive or non-supportive) will be highlighted for inclusion in the program;
- Parameters that are inconclusive will be considered for exclusion from the program;
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Figure 3-2 in the Work Plan presents the NA borings sampled in 1997. These were grab sample locations and will not be part of the MNA evaluation.

The Short Term MNA sample locations are described in Table 4-2 of the Work Plan, and graphically presented in Figures 4-1 and 4-2 of the Work Plan. These sample locations include 24 existing wells and 14 new grab water samples. The MNA Evaluation has been designed to take advantage of additional plume delineation work that will be conducted to complete the



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***ATTACHMENT***



**HSI**  
**GEOTRANS**

A TETRA TECH COMPANY

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Suite 40  
Rancho Cordova, California  
95670

916-853-1800 FAX 916-853-1860

May 31, 2000

RCRA Programs Branch  
Waste Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street SW  
Atlanta, Georgia 30303

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Mr. Harbhajan Singh  
U.S. Environmental Protection Agency  
May 31, 2000  
Page 2

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Sincerely,

#### **HSI GEOTRANS**



Jennifer A. Abrahams, R.G.  
Project Manager



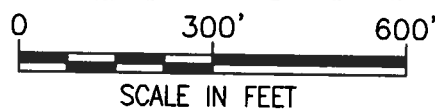
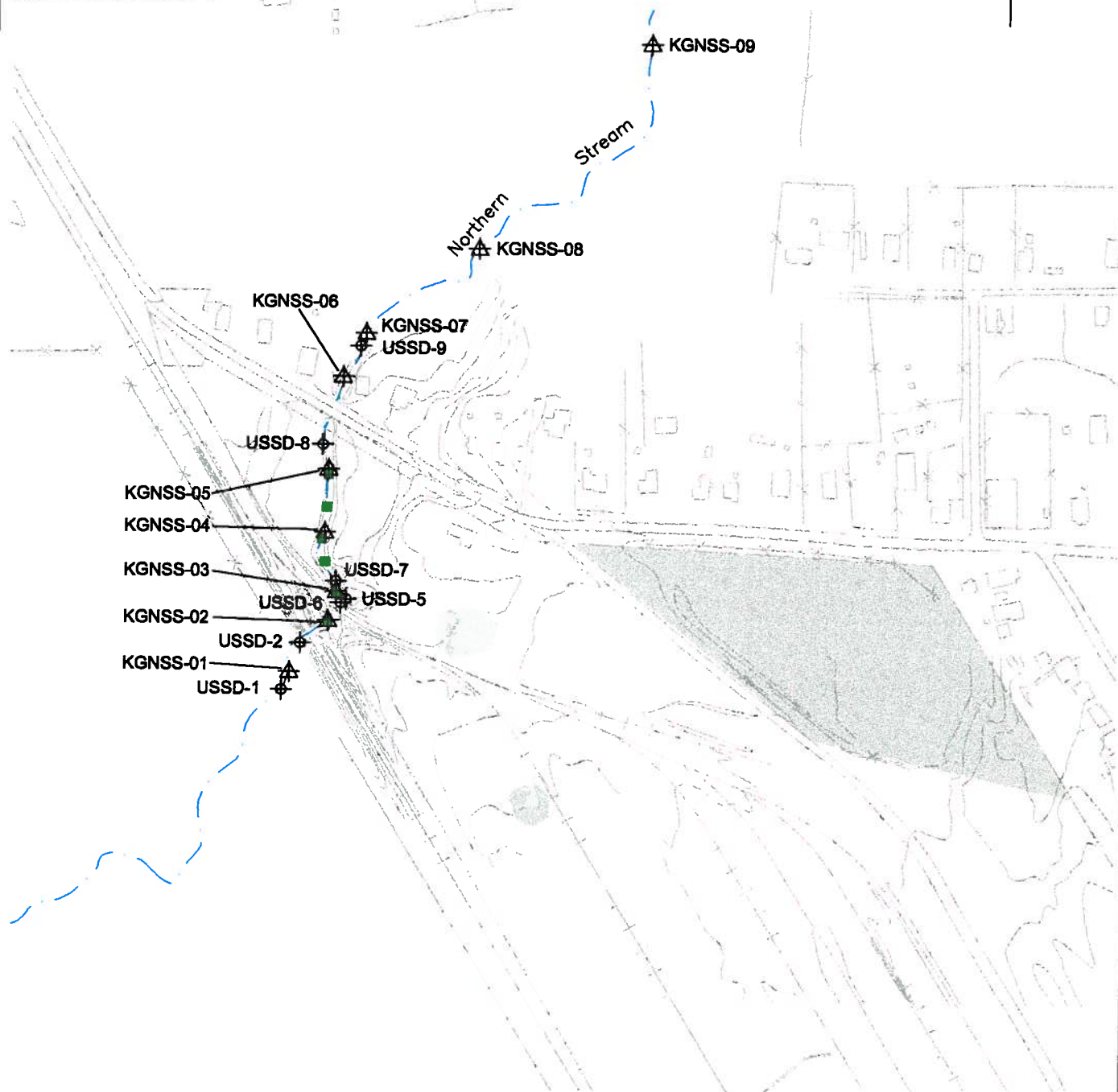
Jeffrey C. Bensch, P.E.  
Sacramento Operations Manager

#### **Attachments**

cc: Jerry Cain, MS DEQ  
Mike Bollinger, Beazer  
Rob Markwell, Beazer

Bob Cohen, HSI GeoTrans  
Paul Anderson, Ogden  
Mark King, Groundwater Insight

**HSI GEOTRANS**



**EXPLANATION**

- ◆ PREVIOUS SEDIMENT SAMPLING LOCATIONS
- ▲ DECEMBER 1998 SEDIMENT SAMPLING LOCATIONS
- PROPOSED SEDIMENT SAMPLING LOCATIONS

TITLE:

**Proposed Sediment Sampling Locations at  
Northern Stream**

LOCATION:

**Koppers Industries, Inc., Grenada, MS**



**HSI  
GEOTRANS**  
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FIGURE:

**1**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

0000 1277 2000

MAR 27 2000

APR 2000  
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4WD-RPB

Mr. Michael W. Bollinger  
Environmental Manager  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219

Grenada County  
Haz Waste - HSWA f  
MR

SUBJ: (1) Approval of Work Plan to  
Complete Phase II RFI  
(2) NOTI on Response to Comments  
on the Work Plan to Complete  
Phase II RCRA Facility Investigation  
Dated August 16, 1999  
Koppers Industries/Beazer East  
Tie Plant, Mississippi  
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has reviewed the August 16, 1999, Work Plan to Complete the Phase II RCRA Facility Investigation for Koppers Industries/Beazer East, located in Tie Plant, Mississippi. Based on its review, EPA hereby approves the work plan to complete Phase II RFI for the identification and scope of the remaining groundwater data needs and surface soil data needs and additional surface soil investigation to refine the understanding of site constituents in the Old South Drip Pad/Track Area.

The review also led to the generation of certain comments, mostly on the response to comments. The comments can be divided into two categories:

1. Narrow revisions to the human health risk assessment at the site, and
2. Approach to address the ecological risk assessment at the Central Ditch and Northern Stream.

A response to these comments must be submitted to EPA and Mississippi Department of Environmental Quality (MDEQ) no later than sixty (60) calendar days after the receipt of this letter. Please mail two (2) copies of your response to EPA and one (1) copy to MDEQ at the following addresses:

Narindar M. Kumar, Chief  
 RCRA Programs Branch  
 Waste Management Division  
 U.S. EPA/Region 4  
 61 Forsyth Street, Southwest  
 Atlanta, Georgia 30303

Jerry Cain, Chief  
 Environmental Permit Division  
 Mississippi Department of  
 Environmental Quality  
 Office of Pollution Control  
 P.O. Box 10385  
 Jackson, MS 39289-0385

Please note that the comments enclosed with this letter and any other comments generated in subsequent reviews must be satisfactorily addressed before the RCRA Facility Investigation (RFI) Report can be considered final. Until the RFI Report is approved, Koppers/Beazer has not fulfilled Specific Condition II.E.3.a of the HSWA portion of the RCRA permit. Failure to comply with any permit condition may result in an enforcement action initiated by EPA pursuant to Section 3008 of RCRA, 42 U.S.C. 6928, under which EPA may seek the imposition of penalties of up to \$27,500 per day of continued noncompliance.

If you have any question(s) regarding the enclosed comments, please contact Mr. Harbhajan Singh of my staff at (404) 562-8473.

Sincerely,



Narindar M. Kumar, Chief  
 RCRA Programs Branch  
 Waste Management Division

Enclosure: NOTI on the Work Plan  
 to Complete the Phase II  
 RCRA Facility Investigation

CC: Jerry Cain, MDEQ (with enclosure)  
 Robert Markwell, Beazer East (with enclosure)  
 Jennifer Abrahams, HSI GeoTrans (with enclosure)  
 R.D. Collins, Vice-President, Koppers Industries  
 (with enclosure)  
 Thomas DuPlessis, Koppers Industries (with enclosure)



NOTICE OF TECHNIAL INADEQUACY (NOTI) ON THE  
WORK PLAN TO COMPLETE THE PHASE II  
RCRA FACILITY INVESTIGATION,  
DATED AUGUST 16, 1999

I. GENERAL COMMENTS

1. Beazer has agreed to include an analysis of off-site residential exposures, however, the revised risk assessment should include reasons for eliminating the future on-site residential scenario. Given the response to Comment 9 transmitted to Beazer by EPA on May 20, 1999, it appears that the information given regarding the on-site residential exposure scenario may have misinterpreted. As stated in Comment 9, Table 1 was intended to serve only as "an internal project planning tool." It should not be concluded from Table 1 that EPA believes that future residential development of the Site will not occur. While EPA agrees that an industrial scenario is the most likely on-site future land use scenario, a residential scenario cannot be disregarded. In response to EPA Comment 14, Beazer has indicated that KII intends to take measures to ensure that future residential scenarios do not occur. EPA has found that institutional controls such as deed restrictions do not necessarily carry over from owner to owner and when used alone, cannot ensure long-term protection of human health and the environment. Deed restrictions can be "layered" with other instruments (e.g., deed notice, adoption of land use controls by the local government) to offer permanence and enforceability in the long term. Please revisit this issue in a more realistic manner.
2. The purpose of a Screening-Level Ecological Risk Assessment (SLERA) is to determine if it is necessary to proceed with the subsequent steps of the ecological risk assessment process. Therefore, the intent of a SLERA is to estimate ecological risks in the most conservative manner, in an effort to minimize the chances of concluding that risks are acceptable when, in fact, an unacceptable risk is present. As a result, it is important to compare on-site contaminant concentrations with the most conservative and appropriate benchmarks available. In the case of the KII site, U.S. EPA Region 4 sediment screening benchmarks are both more appropriate and significantly more conservative than the proposed Apparent Effects Threshold (AETs) due to their region-specific derivation. Since these benchmarks are based on conservative endpoints and sensitive ecological effects data, they will represent a preliminary screening of site contaminant levels to determine if there is a need to conduct additional investigation. Conversely, AETs indicate the concentration at which adverse effects are most likely to be observed and are not

region specific. Beazer must revise the risk assessment to compare sediment contamination concentrations in the Northern Stream with Region 4 sediment screening benchmarks. The evaluation of the facility's response to EPA Comment 28 in this document provides additional discussion regarding AETs and the information submitted by Beazer in an attachment, *Total PAH Sediment Toxicity Benchmark Summary for Wood Treating Sites* (hereafter the Attachment), to their response document.

## II. SPECIFIC COMMENTS

### 1. Response to EPA Comment #2.a

Section 3.1.3 of the Work Plan to Complete the Phase II RFI presents the approach that will be taken to "evaluate the occurrence of natural attenuation." This discussion includes a brief description of the proposed Short-Term Monitored Natural Attenuation (MNA) Evaluation. In addition, the Work Plan indicates that the Short-Term MNA Evaluation will be used to design a Long-Term MNA Monitoring Plan. Based on the limited information provided, the proposed Natural Attenuation Study Plan appears to sufficiently address the comment, however, additional information must be provided before a complete evaluation can be made. Specifically, Beazer should indicate how the Short-Term MNA Evaluation will distinguish between destructive and non-destructive/transport processes. A brief discussion of which indicators of natural attenuation will be examined and which constituents will be investigated as part of the Natural Attenuation Study Plan should be included. Also, Beazer should provide additional explanation regarding how the results from the Short-Term MNA Evaluation will be used to design the Long-Term MNA Monitoring Plan. The addition of this information will allow a more complete evaluation of the MNA Program.

### 2. Response to EPA Comment #2.b

Beazer has acknowledged the comment and indicates that the viability of using naphthalene as the primary indicator for the natural attenuation of Polynuclear Aromatic Hydrocarbons (PAHs) will be evaluated as part of the Natural Attenuation Study Plan.

### 3. Response to EPA Comment #3

Beazer has acknowledged the comment and states their intention to address the issue in the revised site-specific human health and ecological risk assessment upon collection of additional Phase II RFI data.

4. Response to EPA Comment #4.a

Beazer has resolved the comment by agreeing to collect additional surface soil samples in the Old South Drip Pad/Track Area closer to the cylinders. The Work Plan to Complete the Phase II RFI provides a methodology for and a location of the proposed sampling.

5. Response to EPA Comment #4.b

Beazer has adequately addressed the comment by indicating that they will revise the Final Phase II RFI Report to include additional sampling results associated with the Old South Drip/Track Area.

6. Response to EPA Comment #4.c

Beazer has adequately addressed the comment by indicating that the site-specific human health and ecological risk assessment will be revised upon collection of additional Phase II RFI data associated with the Old South Drip Pad/Track Area.

7. Response to EPA Comment #5

The total PAH levels found in the 1998 North Stream Sampling Results exceed various screening values calculated in Ingersoll et al., 1996 [Ingersoll, C.G., P.S. Haverland, E.L. Brunson, T.J. Canfield, F.J. Dwyer, C.E. Henke, N.E. Kemble, D.R. Mount, and R.G. Fox. 1996. Calculation and Evaluation of Sediment Effect Concentrations for the Amphipod *Hyaella azteca* and the Midge *Chironomus riparius*. J. Great Lakes Res. 22(3):602-623]. Eight of the nine samples exceed the Effects Range Low (ERL) and the Threshold Effects Level (TEL) which indicate the beginning of the possible effects range. Seven of the nine samples exceed the Effects Range Median (ERM) and Probable Effects Range (PEL) which indicate the beginning of the probable effects range. One of the nine samples exceeded the No Effect Concentration which is analogous to an Apparent Effect Threshold (AET). These exceedences indicate a strong possibility of adverse effects to benthic macroinvertebrates.

According to EPA's *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (1997), the appropriate course of action for ecological evaluation of the Northern Stream is to conduct a Screening-Level Ecological Risk Assessment (SLERA). Based on the results from this type of simplified ecological evaluation, a decision on whether to proceed with a more comprehensive evaluation can be made. The data

regarding wood-treating site sediment toxicity test results Beazer has provided in the Attachment to the response document provide limited insight into the ecological impact of the contamination at the Northern Stream. At a minimum, Beazer must conduct a SLERA on the Northern Stream to determine if unacceptable ecological risks are present as a result of contamination from wood-treating operations. The SLERA will conclusively determine if a more detailed Ecological Risk Assessment must be performed or if the risks associated with the Northern Stream are acceptable. Additional discussion regarding the Attachment is provided in General Comment 2 of this review report and the Evaluation of Facility Response to EPA Comment 28.

**8. Response to EPA Comment #6**

Beazer has adequately addressed the comment by providing additional information (on the characterization of the lateral and vertical extent of benzene, pentachlorophenol, and PAHs) in the Work Plan to Complete the Phase II RFI.

**9. Response to EPA Comment #7**

Beazer has adequately addressed the comment by providing additional information (on the characterization of the Lower Sand Zone) in the Work Plan to Complete the Phase II RFI.

**10. Response to EPA Comment #8**

Figure 3-2 of the Work Plan to Complete the Phase II RFI provides the physical location of the natural attenuation series of borings. While the location of the borings seems appropriate, the quantity seems inadequate given that natural attenuation represents such a major portion of the remedy proposed in the Corrective Measures Study (CMS) for groundwater. Beazer must justify the number of borings and provide a discussion of how these borings will be representative of the extent of natural attenuation at the site.

**11. Response to EPA Comment #10**

The comment has been resolved.

**12. Response to EPA Comment #12.a**

It appears that Beazer does not intend to include the Northern Stream in the risk evaluation. Beazer has not provided sufficient justification for eliminating the Northern Stream from the risk assessment. In addition, it is unacceptable to eliminate the

Northern Stream from the risk analysis because the historical data are no longer considered representative. If the historical data are deemed unrepresentative and not applicable to the current risk assessment, new sampling data should be collected and evaluated. Alternatively, the historical data should be used to calculate risks associated with the Northern Stream. Whichever approach Beazer chooses, contamination associated with the Northern Stream must be evaluated in the risk analysis.

**13. Response to EPA Comment #12.b**

The first comment has been resolved.

Beazer has adequately addressed the second comment by agreeing to evaluate potential risks associated with off-site groundwater at each off-site and property boundary well, separately. However, additional information indicating which wells will be evaluated should be included in the revised risk assessment.

**14. Response to EPA Comment #12.c**

The available EPA guidance from Region 4 recommends that, for volatile contaminants in household water, the exposure be assumed to result in a dose equivalent to that of ingesting 2 liters of the same water per day. As a result, to account for the additional risks from exposure to volatile contaminants in household water, an additional 2 liters of contaminated water should be added to the calculation for ingestion of contaminated drinking water. In their response to comments, Beazer proposes to double the potential risks associated with dermal and inhalation exposures to volatile constituents. It is unclear whether doubling the associated risks versus considering the ingestion of an additional 2 liters of contaminated water will result in similar estimates. Beazer must provide clear and transparent justification for their approach to accounting for exposure to volatile contaminants. Alternatively, the approach outlined in EPA's *Supplemental Guidance to RAGS: Region 4 Bulletins Human Health Risk Assessment* should be followed.

**15. Response to EPA Comment #12.d**

Beazer has adequately addressed the comment by providing justification for using the arithmetic mean for calculating exposure concentrations for off-site groundwater.

**16. Response to EPA Comment #13**

Beazer has agreed to revise the risk assessment to include an on-site worker scenario. However, the comments state that because



it is very difficult to gain access to the Central Ditch and Northern Stream, on-site workers will not be assumed to contact surface water or sediment in either of these areas. In addition, Beazer states that measures will be taken to prevent future access to subsurface soil at the property. As a result, the onsite worker scenario will not include evaluation of exposure to subsurface soil. By excluding these exposure pathways, a majority of the contamination that an onsite worker may potentially come into contact with is eliminated from the risk calculations. Thus, the risk numbers generated in the risk assessment may be under-representative of the potential risks associated with the site. This is an unacceptable approach and does not evaluate the true reasonable maximum exposures that an on-site worker may encounter. To further complicate the matter, Beazer and KII have not discussed the proposed measures that will be taken to prevent access to the subsurface soils. As a result, this comment cannot be completely evaluated until Beazer and KII have made a final decision concerning what restrictions/institutional controls will be implemented. Beazer should include exposure to surface water and sediment from the Central Ditch and Northern Stream and subsurface soils from the site.

**17. Response to EPA Comment #16**

EPA Comment 16 asked Beazer to develop a total hazard index and carcinogenic risk for the entire Site. Beazer's response indicated that hazard index (HI) and carcinogenic risk summary tables that present total impacts for the local resident receptor would be added to the risk assessment. The response further states that impacts at the Northern Stream and the Processing Cooling Reservoir should not be summed because of the assumptions made in calculating exposure. This is acceptable. Beazer should compare the two total HIs and carcinogenic risks calculated for the local resident (one using the calculated impacts at the Northern Stream and the other using the impacts determined for the Processing Cooling Reservoir) and identify the maximum total HI and maximum carcinogenic risk as the total impacts for the Site.

**18. Response to EPA Comment #17**

Beazer/Ogden have adequately addressed this comment by providing additional clarification in the risk assessment.

**19. Response to EPA Comment #18**

Beazer has adequately addressed this comment by providing additional clarification in the risk assessment.

20. Response to EPA Comment #20

Beazer has adequately addressed this comment by providing additional clarification.

21. Response to EPA Comment #22

The comment has been resolved.

22. Response to EPA Comment #24

The comment has been resolved.

23. Response to EPA Comment #26

The comment has been resolved. However, in planning subsequent ecological evaluations at the site, Beazer should consider that observations from a single day are not likely representative of all site conditions and of all seasons.

24. Response to EPA Comment #27

Beazer has reiterated their belief that maximum concentrations detected in surface water are not representative of long-term conditions at the site. Regardless of their opinion, Beazer must provide justification for not considering maximum detected concentrations in the ecological screening evaluation, which is outlined in Section 2.2 of EPA's *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments*. Alternatively, the maximum concentrations from the most recent samples must be compared with appropriate screening benchmarks.

In addition, it is unacceptable to assume that current surface water concentrations in the Northern Stream will be less than historical concentrations without supporting evidence. Due to the close proximity of the North Waste Piles (SWMU 12) and the Spray Irrigation Field (SWMU 3) to the Northern Stream, a potential for cross-media contamination exists. Elevated levels of PAHs in sediment samples collected from the Northern Stream further support this conclusion. As a result, additional surface water sampling and analysis must be conducted as part of the ecological risk assessment for the Northern Stream or the historical maximum concentrations from Northern Stream surface water samples should be compared with appropriate benchmarks.



## 25. Response to EPA Comment #28

Beazer has included an Attachment to their response to comments document that summarizes some total PAH sediment toxicity benchmark studies for wood treating sites. Without a detailed examination of the data produced in the studies described in the Attachment, it is impossible to determine their actual relevance to the KII site. However, based on the limited information presented in the Attachment, the data from the summarized studies appear to be irrelevant to the current situation and inconclusive for two primary reasons.

First, with the exception of one study from South Carolina, all of the studies that were examined were from sites located outside of Region 4. The study from the South Carolina site was conducted on an estuarine system that is tidally influenced (*i.e.* the river is brackish and contains greater salt concentrations than freshwater systems like the Northern Stream and Central Ditch). Similarly, the Delaware, British Columbia, and Oregon studies were all conducted on tidal rivers. Tidally influenced ecosystems will be significantly different than the Northern Stream and Central Ditch ecosystems. As stated in previous comments, differences in environmental factors [*e.g.*, pH, hardness, dissolved oxygen (DO), salinity] often preclude comparison of benchmarks from different ecosystems and geographical regions.

Second, several confounding factors were identified in the summary that cast doubt on the findings of these studies. For example, the summary indicates that sediment examined in the South Carolina study contained several other types of chemicals in addition to PAHs. Without knowing what type of effects these combinations of chemicals will produce (*i.e.*, additive, synergistic, antagonistic), it is impossible to determine the relevance of these results to the KII site. This, in fact, is one of the inherent problems with AETs. In most cases, AETs have been derived primarily from field observations in which cause-and-effect relationships were uncertain (*i.e.*, it is difficult to determine the causative agent of the adverse effects when sediment samples contain mixtures of chemicals).

Beazer must revise the risk assessment to compare sediment contamination concentrations in the Northern Stream with Region 4 sediment screening benchmarks. General Comment 2 provides additional discussion on the use of AETs for the Ecological Risk Assessment.

## 26. Response to EPA Comment #30

The portion of the comment relating to the use of ratios to express the results of sediment evaluation has been resolved. However, the use of AETs is still unacceptable. See Evaluation of Facility Response to EPA Comments 27 and 28 for additional discussion.

## 27. Response to EPA Comment #34

Beazer must ensure that all constituent concentrations in surface water samples from the Northern Stream are compared with either Ambient Water Quality Criteria (AWQCs) or other acceptable alternative benchmarks. The standard hierarchy for surface water screening benchmarks is as follows:

- U.S. EPA Region 4 Ecological Screening Values.
- Mississippi Water Quality Standards.

The most recent surface water sampling data should be compared with these benchmarks according to the methodology agreed upon by EPA and Beazer. Alternatively, additional samples should be collected and the results should be compared with these benchmarks.



GRENADA COUNTY - TIE PLANT MS  
KOPPERS INC  
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