



April 23, 2004

Project No. 29016402

John J. Mousa, Ph.D.  
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Response to ACEPD March 22, 2004 Letter with Comments on  
Groundwater Flow and Transport Modeling; Fifth Addendum to the  
Work Plan for Additional Investigation of Hawthorne Group Formation;  
and Report on Preliminary Results Private Well Sampling  
Cabot Carbon/Koppers Superfund Site.

Dear Dr. Mousa:

On behalf of Beazer East, TRC is respectfully submitting this combined response to review comments from the Alachua County Environmental Protection Department (ACEPD) provided in the above referenced letter. The review comments were related to submittals regarding the Cabot Carbon/Koppers Superfund Site; in particular, the modeling workplan (*Groundwater Flow and Transport Modeling, Koppers, Inc. Gainesville, Florida* [GeoTrans; January 29, 2004]); the source delineation workplan (*Fifth Addendum to the Work Plan for Additional Investigation of Hawthorn Group Formation* [GeoTrans; February 10, 2004]); and the *Report on Preliminary Results Private Well Sampling* (TRC, March 2004). The present letter combines responses from Beazer East, GeoTrans, and TRC.

The responses to ACEPD's comments are presented in Attachment A. ACEPD's comments are reproduced in their entirety, followed by our response. Also included with the response are the proposed changes to the documents. If you have any questions, please contact Mr. Mike Slenska of Beazer East at (412)-208-8867.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Patterson", is written over a horizontal line.

Tom Patterson  
Senior Project Manager

cc: Maheir Budeir, USEPA  
Kelsey Helton, FDEP  
Brett Goodman, GRU  
John Herbert, JEA  
Mike Slenska, BEI

## ATTACHMENT A RESPONSE TO ACEPD COMMENTS

**Comment #1:** *Springstead Creek, to the north of the Koppers site, is a discharge point for the surficial aquifer system and the upper portion of the intermediate aquifer system. There is an approximate drop in elevation of 60 feet between the southwestern portion of the Koppers site and Springstead Creek at NW 6<sup>th</sup> Street. Springstead Creek, Hogtown Creek, and an un-named tributary to Hogtown Creek (now channelized through a series of culverts beneath the existing Wal-Mart shopping center and the Gainesville Mall) control the hydraulic gradient in the surficial aquifer and upper portion of the intermediate aquifer to the west and northwest of the site. This information may need to be considered in the modeling study.*

**Response:** GeoTrans agrees with the comment that both Springstead Creek and Hogtown Creek influence surficial groundwater flow in this area. Springstead Creek is represented in our Site Model as a discharge area for the Surficial Aquifer. The elevation of the creek that is specified in the model was obtained from the most recent U.S. Geological Survey land surface topography contours for this area. Both the location and elevation of this creek are accurately represented in our model.

Hogtown Creek influences Surficial Aquifer groundwater flow to the west of the site. Similar to Springstead Creek, Hogtown Creek acts as a groundwater discharge point for the Surficial Aquifer. Surficial Aquifer groundwater discharge to Hogtown Creek has resulted in the formation of a shallow groundwater divide between the creek and the KI site. Groundwater to the west of this divide flows towards Hogtown Creek and groundwater to the east of this divide flows towards Springstead Creek to the north and the wetlands area to the northeast of the Site. Based on land surface topography, it appears that the groundwater divide is located about midway between the creek and the Site. The western Site Model boundary is aligned approximately with the land surface high through this area, which should also approximate the surficial aquifer groundwater divide. Both the Hogtown Creek and the unnamed tributary are located to the west of the Site Model boundary and therefore are not included in the model.

**Changes:** The western external boundary for the Site Model will be shifted to more accurately align with the approximate location of the Surficial Aquifer groundwater divide between Hogtown Creek and the KI western boundary. Figures 4 and 5 of the Modeling Workplan will be modified to reflect the realignment of the western boundary location.

**Comment #2:** *Additional surficial, intermediate, and Floridan aquifer historical water level data are available for the area northeast of Koppers. The available data include the following: in-house (ACEPD) data for ambient surficial aquifer monitoring; data for monitoring wells at the closed Alachua County Northeast Landfill and Northeast Auxiliary Landfill; data collected as part of assessment, monitoring, and remediation activities at the FDOT Fairbanks site. This data may be useful in developing the modeling study.*

**Response:** Beazer and GeoTrans (Beazer's consultant performing the modeling) appreciate the support received from ACEPD in providing water-level data for the area. Over the past few months, the ACEPD has provided GeoTrans with electronic copies of the ACEPD biannual water-level monitoring data for the county for the years 1996 to 2003. ACEPD has also provided GeoTrans with water-level data for the FDOT Fairbanks site. GeoTrans does not currently have data for the Alachua County Northeast Landfill and Northeast Auxiliary Landfill. Both of these landfills are outside of the Site Model domains but within the GRU Regional Model boundaries. GeoTrans would be interested in obtaining these data for the GRU Regional Model simulations.

**Changes:** No changes proposed for the current workplans and reports.

**Comment #3:** *There are a number of potential vertical transport mechanisms that may be facilitating contaminant migration into the lower intermediate aquifer within the Hawthorn Group. Local citizens have spoken of the presence of a fire control well that reportedly existed in the Drip Track area on the Koppers site. Current and former employees that might have knowledge of the presence of a well should be interviewed to determine the former location and disposition of this well. If present, the well may be a conduit for vertical movement of contaminants. If a well is located, it should be sampled and properly plugged and abandoned following water management district regulations.*

**Response:** Beazer is currently investigating the location and disposition of all historical wells on the Cabot Carbon and Koppers Inc. facilities. Any wells identified which are no longer used, improperly abandoned, or that are potential vertical conduits for contaminant migration will be sampled according to St. John River Water Management District (SJRWMD) and other agency requirements.

**Changes:** No changes proposed for the workplans and reports.

**Comment #4:** *Additional Floridan aquifer monitoring wells should be installed in the interior of the site, in proximity to the source areas (specifically downgradient).*

**Response:** A monitoring program for the Floridan Aquifer is being prepared. The monitoring program will likely include addition of wells proposed for Floridan Aquifer monitoring. In addition, Beazer is currently investigating the lateral and vertical distribution of source areas and dissolved-phase constituents and performing the comprehensive fate and transport modeling. Based on the results of the investigations and model predictions, Beazer will evaluate the adequacy of the monitoring program.

**Changes:** No changes proposed for the current workplans and reports. A Floridan Aquifer Monitoring Plan is being prepared and will be submitted soon.

**Comment #5:** *A plan for continued monitoring of the surficial, intermediate, and Floridan aquifers at the site should be prepared and implemented.*

**Response:** As noted in the response to comment 4, a Floridan Aquifer Monitoring Plan is currently being prepared. This monitoring is proposed to assure continued protection of the Gainesville water supply. Surficial aquifer monitoring is currently performed as part of the ongoing groundwater remediation program on the Koppers Site. Data on the Intermediate Aquifer water quality has been collected as part of the ongoing investigation and Beazer believes that with the April sampling, there is going to be sufficient data for decision making regarding remedy development.

**Changes:** No changes proposed for the current workplans and reports.

**Comment #6:** *In the source areas there are a number of borings that were reported to contain “amber oil” (CCA Drip Track SB-44 and SFS-B3; North Lagoon SB-38 and SFS-B4; South Lagoon SFS-B6). This source material, if present in the form of free product should be remediated immediately. This could potentially be conducted by installation and operation of recovery wells.*

**Response:** As pointed out on page 16 of the Source Delineation Workplan, “Most of the DNAPL that has been observed at the Site appears to be at residual saturation (immobile under current conditions), with some of this residual showing evidence of weathering by becoming hardened. This is consistent with the long Site history. DNAPL has only accumulated in one Surficial Aquifer well. Given the number of wells drilled at the Site, it is unlikely that significant pools of DNAPL exist in the Surficial Aquifer at the Site. There have been no visual observations of DNAPL below the Upper Hawthorn Clay...”

As part of the investigation, samples of creosote-impacted soil and groundwater will be collected for use in bench-scale tests. These bench-scale tests will focus on In-Situ Biogeochemical Stabilization (ISBS). See Response to EPA Comment # 8 for further discussion. In addition, wells will be completed in DNAPL-impacted zones so that they may be used, if needed, as part of a future to-be-determined remedial action. See Response to EPA Comment # 13 for further discussion.

**Changes:** No changes proposed for the current workplans and reports.

**Comment #7:** *It is apparent based on the presence of naphthalene reported for samples collected in November 2003 from wells in the Hawthorn Group (4,350 ug/L for well HG-2D, 6,170 ug/L for well HG-4I, and 2,840 ug/L for well HG-4D), that source materials/DNAPLs are likely present in the upper and lower Hawthorn Group. The Fifth Addendum does not address determination of the horizontal and vertical extent of DNAPLs that have migrated into the intermediate aquifer within the Hawthorn Group formations. Geophysical techniques as well as traditional drilling methodologies should be evaluated to determine the location and extent of the source materials/DNAPLs that are located within the Hawthorn Group.*

**Response:** The wells cited above have elevated naphthalene aqueous concentrations, but no other indicators of DNAPL presence (i.e., creosote odors, etc.). In addition, the elevated naphthalene concentrations (i.e., 2,840 µg/L, 4,350 µg/L, and 6,170 µg/L) are not necessarily indicative of DNAPLs. Sources of the naphthalene in these wells are likely located up gradient, vertically and/or horizontally.

The Fifth Addendum targets known DNAPL creosote source areas as the most likely locations to find DNAPL that may have migrated into the Hawthorn Group.

As described in Section 5.1 of the Workplan, the field effort does include surface geophysics (i.e., electrical resistivity) and traditional drilling (i.e., mud rotary). As discussed in this section, up to three Upper Hawthorn Group wells will be drilled per source area and up to two Lower Hawthorn Group wells will be drilled per source area. The purpose of these wells is to determine the vertical and horizontal extent of DNAPL in the Hawthorn Group below the known DNAPL creosote source areas.

**Changes:** No changes proposed for the current workplans and reports.

**Comment #8:** *Methylphenols are potential degradation products of creosol and other phenolic constituents of creosote. They are not necessarily only associated with the activities from the Cabot Carbon site.*

**Response:** Methylphenol, also known as creosol, occurs in small quantities in coal, wood, and petroleum. Dimethylphenol has similar sources. Phenol is not a likely breakdown product of these compounds, nor is it a breakdown product of pentachlorophenol. The monitoring data for ITW-14 well near the former northeast lagoon at the former Cabot Carbon facility indicates elevated 2,4-dimethylphenol and phenol concentrations, which are much higher than detections at wells near creosote sources on the Koppers facility. Water quality data for ITW-14 and other wells at Koppers Site are listed in Table 1.

**Changes:** No changes proposed for the current workplans and reports.

**Comment #9:** *Off-site contamination in the Floridan aquifer has been detected in samples from a private irrigation well located adjacent to the west property boundary of the Koppers site. This irrigation well was previously sampled by ACEPD on May 21, 1999 (shortly after installation), and at that time, no VOCs or SVOCs were detected. The horizontal and vertical extent of the contamination in the Hawthorn Group (intermediate aquifer) and the Floridan aquifer on-site and off-site along the western property boundary does not appear to be completely delineated and should be further investigated in developing a plan to address groundwater contamination.*

**Response:** It is possible that differences in the field procedures caused the relatively minor differences between the Beazer and ACEPD results. Resampling of the well has been performed to verify the preliminary findings of Beazer. The results of resampling will be provided in follow-up reports. The ACEPD analyses for SVOCs at the private well did not include some of the SVOC constituents such as dimethylphenol, methylphenols, and phenol, which were analyzed and detected during Beazer's sampling event. Concentrations of other constituents detected during the Beazer's preliminary sampling were low and near the detection limit.

As mentioned above, Beazer is preparing a Floridan Aquifer Monitoring Plan, which will address installation of Floridan Aquifer monitoring wells and the monitoring plans for the Floridan Aquifer. Development and approval of the plan will establish the need for delineating the extent of these relatively low level detections of constituents to the west of the site.

**Changes:** No changes proposed for the current workplans and reports.

**TABLE 1****ITW-14, MW-21A, ITW-15, AND ITW-21 WQ DATA**

WELL ID	LOCATION	SAMPLE DATE	CONCENTRATIONS (µg/L)		
			Naphthalene	2,4-Dimethylphenol	Phenol
ITW-14	Near Former Northeast Lagoon (Cabot)	Aug 95 – Dec 03	Median = 490	Median = 4,000	Median = 2,915
			Max = 14,000	Max = 9,000	Max = 9,400
MW-21A	Former South Lagoon (Kopper)	11/21/1988	1,200	51	<4
ITW-5	Former Process Area (Kopper)	11/21/1988	1,000	26	65
ITW-21	Former Drip Track (Kopper)	11/21/1988	2,700	160	< 8
		02/19/2004	5,570	< 8.2	< 8.2