ADEM

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September 30, 1997

MEMORANDUM

TO: Wm. Gerald Hardy, Chief 10/1/97
Hazardous Waste Branch
Land Division

THROUGH: Stephen A. Cobb, Chief SAC 9/30/97
Industrial Facilities Section
Hazardous Waste Branch
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FROM: Sonja M. Bazemore
Industrial Facilities Section
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RE: Evaluation of Koppers Organics', Dolomite, Alabama, facility's status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I.D. Number: ALD 085 765 808

This memo is written to formalize an evaluation of Koppers' Woodward Tar (Koppers Organics), Dolomite, Alabama, facility status in relation to the following RCRIS corrective action codes:

1) Human Exposures Controlled Determination (CA725),
2) Groundwater Releases Controlled Determination (CA750).

The applicability of these event codes adheres to the definitions and guidance provided by the EPA Office of Solid Waste (OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors.

Region 4 has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposure to current contamination risks are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NC) to explain the current status of exposure controls.

This particular CA725 evaluation is the ***first evaluation*** performed by the Alabama Department of Environmental Management for Koppers Woodward Tar Facility. Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures. This memo first examines each environmental media (i.e., soil, groundwater, surface water, and air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Koppers Woodward Tar.

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

- Focussed Groundwater Investigation Work Plan, October 1995
- Confirmatory Sampling Plan, October 1995
- RCRA Facility Investigation Work Plan, November 1995
- Quality Assurance Project Plan, August 1994
- Post Closure Permit Application, July 1993
- Groundwater Quality Assessment Phase III Report Addendum, May 1992
- Groundwater Quality Assessment Phase III Report, November 1991
- RCRA Facility Assessment Report, February, 1987

Background

In 1914-1915, American Tar Products built the Koppers' Woodward Tar facility. Since the mid-1920s, the 45-acre facility has been used for the distillation of coal tar to produce pitches for the aluminum industry and for roofing products. Creosote is the by-product produced by this distillation process. Polynuclear Aromatic Hydrocarbons (PAHs) are the chemical descendants for this material. The Department has classified two units at the Koppers Organics site as regulated units: the spray oxidation fields and the tank car cleaning waste pile storage pad.

In response to the conclusions established by the Phase II and Phase II Supplement investigations, Phase III and Supplement Investigations were conducted between June 1991 and April 1992. These investigations completely defined the vertical and horizontal extent of the site-related constituents. The tasks performed during this investigation as well as the previous investigations indicated that the principal groundwater flow and storage lay in fractures, voids and solution cavities in the Ketona Dolomite.

A dye trace study was performed for both the Koppers Organics and Koppers Coke Facility, jointly as required by the permit. This study was conducted to verify the migration and status of the groundwater contamination. A report has been submitted and is currently being reviewed.

Surface Water

The nearest body of water is the Opossum Creek located about one-quarter (1/4) mile south of the facility. The creek flows southwest toward the Black Warrior River, which flows south to southwest to the Tombigbee River. Opossum Creek is an effluent stream in which several industries discharge water. The creek has been documented as Industrial Operations (IO) in several of Koppers report submittals, meaning the waters from the stream should only be used for processes that require lower quality water. The direct releases and emanate dangers associated with Opossum Creek and/or its sediments have yet to be determined. Further evaluation of the creek and the areas surrounding the creek are pending.

Soil

There are four (4) Solid Waste Management Units (SWMU) and two (2) Area's of Concern (AOC) where potential soil contamination has been investigated.

1. SWMU 5 – Metal Refuse Pile
2. SWMU 6 – Tar deposits at NPDES Outfall
3. SWMU 8 – Storm Water Collection Sump
4. SWMU 11 – Tank Car Loading/Unloading Area
5. AOC 1 – Main Piping Area for Tank Farm
6. AOC 2 – Product Storage for Production

The oxidation fields were determined to be a regulated unit based on the presence of K035 constituents found in the soil. In October 1988, a Closure Plan for the oxidation fields was submitted to the Alabama department of Environmental Management (ADEM). A revised Closure Plan for the oxidation fields was submitted to the Department June 4, 1997.

The K035 constituents were also used to classify the tank car cleaning waste pad as a regulated unit. In the late 1950's, the waste pile storage pad was used to store solid residue from the tank car cleaning station settling tank. This solid residue contained creosote. In March 1982, this area was closed when the old tank car cleaning facility was removed from operation. The old facility was completely dismantled and recycled. The foundation was demolished and removed from the site upon closure. A new tank car cleaning station was constructed in the same area as the closed unit. On August 18, 1995, the Alabama Department of Environmental Management (ADEM) issued a RCRA post closure permit, for the waste pile storage pad. This RCRA permit is currently effective, although it has been appealed by Koppers.

Groundwater

Between August 1987 and October 1987,during the application process, a Phase I Groundwater Quality Assessment was implemented for the facility as part of the Post-Closure permit. This phase delineated the rate of migration and the extent of plume. It was determined that the constituents were present in the groundwater south of the waste pile storage pad at the down-gradient limits.

As a result of this investigation, a Phase II GWQA followed in January 1989, to further delineate the horizontal and vertical extent of the plume from the waste pile storage pad. A supplement to the Phase II activities was performed in early 1990, to define the extents explained in the Phase II assessment. Also included in this phase was ADEM's request for defined exclusive water bearing zones if they existed. It determined that the horizontal and vertical extent were not yet adequately defined and required further investigation.

During the Phase II GWQA investigation, soil-sampling events for SWMU 5 indicated that the concentration of constituents systematically decreased with depth. For SWMU 6, the deposits were determined to be coal tar. However, the source of release has yet to be discovered. SWMUs 8, 11, and AOCs 1 and 2, are required to be sampled in compliance with the permit. These sampling events have not been performed at the present time.

Human Exposures Controlled Determination (CA725)

The routes of human exposure at the Koppers' Woodward Tar facility include groundwater, and surface water through storm water and process wastewater discharge. Surface water discharges are controlled and regulated by the NPDES program. Exposures to groundwater could occur by direct access to the aquifer through monitoring wells or private water wells. All monitoring wells maintained by Koppers' Woodward Tar are required to be locked at all times except when being sampled. Currently, a RFI has been imposed at the Koppers' Woodward Tar facility.

The Human Exposure Controlled RCRIS code applies to the entire site, not specific SWMUs. The available status codes are:

1) YE Yes, applicable as of this date (indicating human exposures controlled).
2) NO No, not applicable as of this date (indicating human exposures uncontrolled)
3) NA Previous determination no longer applicable as of this date.
4) NC No control measures necessary.

Groundwater Releases Controlled Determination

Three phases of the groundwater quality assessment have been completed at Koppers' Woodward Tar facility. The final phase was completed in 1992. The assessment documents have completely defined the vertical and horizontal extent of the site-related constituents. The tasks performed during these investigations indicate that the principal groundwater flow and storage lay in fractures, voids and solution cavities in the Ketona Dolomite. In addition, a dye tracer study has been performed at the site to determine the migration and present status of the groundwater contamination plume. A report has been completed and is currently being reviewed.

The constituents present in the groundwater are at concentrations that exceed the Maximum Contaminant Levels (MCLs). A Corrective Measures Program has not been implemented. The approved corrective action system has not been completed. Therefore groundwater releases are uncontrolled at this time.

The Groundwater Releases Controlled RCRIS code applies to the entire site, not specific SWMUs. The available status codes are:

1) YE Yes, applicable as of this date (indicating groundwater releases controlled).
2) NO No, not applicable as of this date (indicating groundwater releases uncontrolled).
3) NA Previous determination no longer applicable as of this date.
4) NR No releases to groundwater.

Conclusions

1. **Human Exposures Controlled RCRIS Event Code (CA725)**

   Based on the information regarding soil contamination, and groundwater contamination migrated beyond the facility boundary, there are no corrective measures currently in-place. As explained in Section III, offsite human exposures to contamination are not completely controlled. Soil and groundwater corrective action proposals for SWMUs will be developed as Confirmatory Sampling and the RCRA Facility Investigation have been completed. Therefore, it is recommended that the appropriate status code for RCRIS code CA725 would be NO, indicating human exposures uncontrolled at this time.

2. **Groundwater Releases Controlled Determination (CA750)**

   Based on data contained in the documents referenced in Section II and summarized in the background information, releases from solid waste management units and/or areas of concern have contaminated groundwater at concentrations above relevant action levels. Groundwater Corrective Action for the regulated unit has been addressed in the permit, yet are not currently underway. Therefore, because all ground water contamination at or emanating from the facility is not being controlled at this time, the first evaluation of the Koppers Organics facility, recommends that **CA750 NO** be entered into RCRIS.

SMB/sem:L:Koppers EI

File: Koppers Organics/TSD/Jefferson