UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-3104

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4WD-RCRA

SUBJ: Evaluation of Wood Treating's status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I.D. Number: MSD 065 490 930

FROM: Russ McLean, Environmental Engineer RM 9/18/96
South RCRA Permitting Section

THRU: Kent Williams, Chief KWilliams
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TO: H. Kirk Lucius, Acting Chief
RCRA Programs Branch

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the Wood Treating Inc., Picayune, Mississippi facility's 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 Office of Solid Waste (OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors.

Concurrence by the RCRA Branch Chief is required prior to entering these event codes into RCRIS. Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing above.

II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are three (3) national status codes under CA725. These status codes are:

1) YE Yes, applicable as of this date.

2) NA Previous determination no longer applicable as of this date.

3) NC No control measures necessary.

Region 4 has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures 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.

Note that the three national status codes for CA725 are based on the entire facility (i.e., the codes are not SWMU specific). Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725. Similarly, the regional status code, NO, is applicable if plausible human exposures are not controlled in any areas of the facility.

This particular CA725 evaluation is the **first evaluation** performed by EPA for the Wood Treating, Inc., Picayune, Mississippi 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, 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 Wood Treating.

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

- RFI Report, January 1995
- Semi-Annual Corrective Action Reports
- RFI Work Plan, June 1994
- Groundwater Quality Assessment, August 1987

III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES

Background

Wood Treating, Inc. operates a wood treating plant located in the city of Picayune, Pearl River County, Mississippi. The plant produces treated wood pilings and poles for construction and utility purposes using the preservative creosote. Pentachlorophenol was used prior to 1982. The plant has operated as a wood treating facility since 1946. Wood Treating, Inc. purchased the facility in 1973 and has operated the plant since that time. The facility is located on 30 acres within an industrial complex that once included a saw mill, veneer mill, a wooden box factory and a Tung oil extraction facility. The only industry presently operating in this complex is a paint blending company located to the north of the site.

The plant operated three unlined surface impoundments to manage process wastewater generated during the treatment process. These units averaged 20-25 feet wide and 400 feet long. These units were constructed between 1975 and 1980. The facility also operated an unlined condenser cooling pond for recycling cooling water. This unit was constructed at the time of plant construction in 1946. The sludge generated in the impoundments is identified as the listed waste K001, bottom sediment sludges from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol. All four regulated units were closed according to a closure plan approved by the

Mississippi Department of Environmental Quality (MDEQ) in September 1985. During closure, all pumpable sludge was removed, remaining sludge and visibly contaminated soils were solidified with cement kiln dust, and the impoundments capped. A certificate of closure was submitted in September 1987. Groundwater contamination was discovered beneath these units during monitoring activities required by Subpart F. A groundwater quality assessment plan was implemented in 1985 to complete the hydrogeologic site definition and define the areal and vertical extent of contamination.

A RCRA permit was issued by MDEQ in August 1989 for post-closure care of the closed units and corrective action for the remediation of contaminated ground water. EPA issued the HSWA portion of the RCRA permit, effective September 22, 1989, which identified six SWMUs and one AOC requiring a RCRA Facility Investigation.

Ground Water

Releases from SWMUs have contaminated groundwater at concentrations above relevant action levels. Constituents of the wood preserving industry using pentachlorophenol and creosote have contaminated ground water in the uppermost aquifer. Two separate and distinct soluble plumes of contamination from K001 constituents have been identified. One plume is associated with the three impoundments on the western end of the plant, and the other is associated with the condenser cooling water pond in the main plant process area on the east end of the plant. A DNAPL zone is associated with the soluble plume originating from the condenser cooling water pond. Both soluble plumes have migrated to offsite locations. The major constituents of concern are phenols and polynuclear aromatic hydrocarbons (PAHs) which are present in the groundwater in concentrations up to 19.8 mg/l and 21.85 mg/l respectively.

Surface soils at the site consist of predominantly fine grained silts and clays of the Pamlico Sand. This zone extends from the surface to depths ranging from 10.5 to 51 feet, averaging 37 feet in thickness at the site. The uppermost aquifer at the site is the Citronelle Formation of the

Pleistocene, ranging in thickness from 20 to 64 feet. The Citronelle is composed of granular sediments ranging from fine to medium grained quartz sands to coarse sand and gravel. Underlying the Citronelle, at depths ranging from 69 to 75 feet, is a continuous clay of the Graham Ferry Formation of Pliocene age. Logs of deep water wells in the vicinity of the plant indicate a thickness of 100 to 300 feet for this unit. This formation is an effective aquiclude in this area between the Citronelle and the deeper Miocene aquifers, that serve as a major source for domestic and industrial water supply.

In January 1992, Wood Treating initiated groundwater corrective action. The groundwater recovery and monitoring system consists of six recovery wells and 29 monitoring wells. Two recovery wells are used to collect contaminated ground water associated with the closed cooling water pond. One recovery well collects ground water contaminated by the wastewater impoundment system. Three recovery wells are designed for the recovery of free phase organic material within the identified DNAPL zone. Monitoring wells are designated as compliance, effectiveness or boundary wells as set out in the RCRA Post-Closure permit. No contamination is currently indicated in any of the boundary wells. No groundwater supply wells, completed in the Citronelle, are identified within the delineated area of contamination.

Based on the above discussion, the Groundwater is contaminated and all plausible human exposures are controlled.

Surface Water

Releases from SWMUs and AOCs have contaminated surface water at concentrations above relevant action levels. Shallow ditches and swales are used to divert surface waters throughout the facility. The runoff from the site is ultimately channeled to Mill Creek, a small tributary to the Pearl River, at a point about one half mile southwest of the site. Major drainage features in the area are the East Hobolochitto Creek approximately one mile to the north, the Hobolochitto Creek

approximately 3 miles to the northwest and the Pearl River approximately 3 miles to the southwest.

During the RCRA Facility Investigation, a surface water sample was taken from a stormwater runoff ditch on the southern boundary of the plant. Analysis of this sample indicated pentachlorophenol at a concentration of 0.16 mg/l (MCL=.001 mg/l). This ditch collects runoff from the process area and an area used for treated pole storage. Another surface water runoff sample was taken from a separate ditch at a point offsite about 100 feet south of the facility boundary. This sample indicated PCP at a concentration of .051 mg/l, benzo(a)pyrene at .03 mg/l (MCL=.0002 mg/l) and several other carcinogenic PAH compounds at concentrations of about 0.1 mg/l. A surface water sample was also taken at the downstream limit of the cooling pond ditch, a SWMU which received discharge from the condenser cooling pond during its operating life. This ditch also receives runoff from the area surrounding the closed cooling pond. Visual evidence of what appeared to be creosote contaminants was observed in the ditch water during the RFI. Analytical results of the surface water sample indicated PCP at a concentration of .016 mg/l and total PAH concentrations of .037

The analytical and visual evidence obtained during the RFI indicates that PCP and PAH constituents are migrating offsite via surface water runoff at concentrations above relevant action levels. As no drinking water intakes are identified downstream of the facility, the water quality criteria (WQC), for protection of human health, of 1.01 mg/l for PCP is not exceeded. However, the WQC for benzo(a)pyrene is .0028 µg/l which is exceeded at a location outside the facility boundary.

Based on the above discussion, plausible human exposures to surface water contamination are not controlled and control measures are necessary at this time.

Soil

Releases from SWMUs and AOCs have contaminated soil at the facility above relevant action levels. Soils in the process area and the treated wood storage areas contain visible contamination.

Sample analyses of the surface soils indicate PCP levels on the order of several hundred mg/kg in many samples and levels above 1000 mg/l in two samples in areas around storage tanks. Analyses also indicated PAH contamination as high as 4000 mg/kg in these areas of the plant.

One sediment sample taken in the drainage ditch just outside the southern property boundary indicated total PAH concentrations of approximately 3000 mg/kg. Additionally, soil borings taken approximately 100 feet south of the facility boundary indicated visual evidence of creosote constituents down to a depth of 5 feet.

Based on the above discussion, plausible human exposures to contaminated soil are not controlled and control measures are necessary at this time.

Air

Releases to air from soil, groundwater and/or surface water contaminated by SWMUs and AOCs at the facility is not known to be occurring above relevent action levels. The constituents of concern at the facility are semi-volatile organics which exhibit low vapor pressures that vapor emissions should be insignificant. Additionally, the oily, viscous nature of the constituents tends to bond soil particles, decreasing the potential for dust formation. This coupled with the fact that this area of Southern Mississippi receives a substantial amount of annual rainfall, further reduces the generation of fugitive dust emmissions. **Therefore, there is no human exposure to contamination via an air route.**

IV. STATUS CODE RECOMMENDATION FOR CA725:

As discussed in Section III, human exposures to contamination of soils and surface waters by the constituents associated with creosote and pentachlorophenol are not controlled at the Wood Treating, Inc., Picayune, MS facility. Based on the information presented, it is recommended that **CA275 NO** be entered into RCRIS.

V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)

There are three (3) status codes listed under CA750:

1) YE Yes, applicable as of this date.

2) NA Previous determination no longer applicable as of this date.

3) NR No releases to groundwater.

Region 4 has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases 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 in the first CA750 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NR) to explain the current status of groundwater control.

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively (i.e., natural attentuation) controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The designated boundary (e.g., facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels above action levels or media cleanup standards, etc.) is the point where the success or failure of controlling the migration of hazardous constituents is measured. Every contaminated area at the facility must be evaluated and found to have the migration of contaminated groundwater controlled before a "YE" status code can be entered. Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility.

This evaluation for CA750 is the first formal evaluation performed for the Wood Treating, Inc., Picayune, Mississippi facility. Please note that CA750 is based on the adequate control of **all** contaminated groundwater at the facility.

The following discussions, interpretations and conclusions on contaminated groundwater at the facility are based on the reference documents cited in Section II of this memorandum.

VI. STATUS CODE RECOMMENDATION FOR CA750:

Based on data contained in the documents referenced in Section II and summarized in the groundwater portion of Section III, releases from SWMUs and AOCs have contaminated ground water at concentrations above relevant action levels.

Although the ground water is contaminated above relevant action levels, a pump and treat system has been installed to capture and control the migration of impacted ground water. It is recommended that **CA750 YE** be entered into RCRIS.