9433.1987(27)

K035 LISTING AND DELISTING ISSUES: GROUNDWATER CONTAMINATION

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

DEC 11 1987

Mr. Jordan Dern
Manager, Environmental Regulatory Programs
Koppers Company, Incorporated
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219

Dear Mr. Dern:

The Permits and State Programs Division has reviewed your September 21, 1983 petition (0528) requesting an exclusion from regulation for sludges, presently classified as EPA Hazardous Waste No. K035, generated at the Koppers' Follansbee, West Virginia facility. We will recommend to the Assistant Administrator for Solid Waste and Emergency Response that your petition be denied. There are two reasons for this recommendation: (1) groundwater monitoring date indicates that the subject units and waste may be contaminating groundwater; and (2) the waste has not been sufficiently characterized to demonstrate that it is non-hazardous. (Note: We have not previously requested some of the missing information because of (a) confusion created by the petition as to which wastes are treated in the system, and (b) the evolving requirements of the Delisting Program). The specific bases for our recommendation are further described below.

However, before further explaining our denial recommendation, let us first address your contentions that the waste to be delisted is not subject to regulation.

Your firm contended that its wastewater treatment system does not generate or treat a listed hazardous waste. Specifically, you argued that the waste is a sludge generated from the biological treatment of creosote production wastewaters and that the K035 listing (wastewater treatment sludges generated in the production of creosote) is not applicable to this waste because of the listing background document does not include biological treatment sludges.

The Agency disagrees. The K035 listing background document specifically includes biological sludges:

> "2. Creosote Wastewater Treatment Sludge
>
> The wastewater treatment sludges that remain after biological treatment are also hazardous. The carcinogenic constituents of creosote, namely benzo(a)anthracene, benzo(b)-fluoranthene, and benzo(a)pyrene, are especially likely to be present in the treatment sludge since these constituents absorb to sediments at very high levels (App. B). Where treatment is incomplete, creosote (which is, however, somewhat amenable to biodegradation (App. B)), is projected to be present in the sludge as well. If these sludges are placed in a leaking landfill, an unlined holding pond, or an improperly sited facility (i.e., as in an area with permeable soil), the waste constituents may be released."

For this reason, the Agency concludes that the wastewater treatment sludge generated at the Koppers' Follansbee, West Virginia facility is a listed hazardous waste K035.

In addition, your firm contends that the aeration basins are tanks, not surface impoundments, and are therefore exempt from regulation under 40 CFR 261.4(c). As explained in the attached October 11, 1985 letter from Stephen Wassersug (EPA Region III), EPA examined the structural details of the aeration units and found that the units do not meet the criteria for tanks. Therefore, the §261.4(c) exemption does not apply.

Because the units and waste are subject to Subtitle C regulations, we evaluated the merits of your delisting petition. As mentioned previously, our evaluation has resulted in our decision to recommend the denial of your firm's petition. The primary basis for this decision is that the submitted groundwater monitoring data indicates that the waste units may have contributed to groundwater contamination. Also, we are concerned about the adequacy of your ground-water monitoring system. Finally, you did not supply all of the data needed to fully characterize the waste in the treatment system. We address each of these concerns in more detail below.

It is EPA's policy not to exclude any waste until the petitioner demonstrates that it poses no past or present threat

to the environment. For waste that has been treated, stored or disposed of in a land-based unit, EPA will investigate the potential for ground-water contamination. Our policy is to request four consecutive quarters of groundwater monitoring data from a ground-water monitoring system meeting the requirements in 40 CFR 265, Subpart F. These data must show no exceedance of regulatory standards.

We reviewed the data that Koppers submitted and concluded that two of the monitoring systems (wells in the R-A and R-B series) were not adequate to monitor ground-water quality in the uppermost aquifer underlying the aeration units because they were installed in shallow fill materials that are typically dry. The R-C series wells which are downgradient of the units and the upgradient A-115 well, although not fully complying with the Subpart F requirements, can be used to sample the uppermost aquifer. Koppers submitted two quarters of data from these wells. Data from the downgradient wells showed concentrations exceeding background levels for the following hazardous constituents, which are among those we would expect to find in K035 waste; cadmium, barium, phenathrene, benzo(a)-pyrene, dibenz(a,h)anthracene, indeno(1,2,3-c)pyrene, anthracene, chrysene, benzo(b)fluoranthene and phenol. In all cases, concentration levels at the downgradient wells exceeded the levels of regulatory concern that EPA uses to evaluate delisting petitions. In some cases wells at the background (upgradient) well also exceeded these delisting levels. Moreover, the downgradient wells also showed higher concentrations of TOC, pH, and specific conductants, three of the four general indicators of ground-water contamination measured under the Subpart F monitoring requirements. Appendix I presents these data in greater detail.

We discussed the need for data on ground-water contamination with representatives of Koppers in 1986. At that time, we focused primarily on a CERCLA action that addressed ground-water problems at a different part of the facility. We were concerned that releases from the wastewater treatment units might be contributing to that problem. In response to our letter of March 1986, Koppers submitted information intended to show that the wastewater treatment units were not contributing to the ground-water contamination subject to the CERCLA response. We have serious questions about this demonstration. More significantly, that demonstration provides no basis for us to conclude that the wastewater units are not contributing to the contamination closer

to the units at the three R-C series wells. Because samples from these wells contained a large number of constituents frequently found in K035 waste, and because the wells are located downgradient of the units we have tentatively concluded that the units are contributing to the contamination at those wells. Accordingly, we must recommend that the agency deny your petition.

Furthermore as mentioned briefly above, none of the wells in the vicinity of the aeration units fully complies with the monitoring standards in Part 265, Subpart F. For example, two of the monitoring systems (the initial R series and the RB series) were installed in fill materials that are typically dry, and have been determined to be inadequate for monitoring groundwater quality in the uppermost aquifer underlying the aeration units. EPA's current delisting policy also requires us to recommend denial of your petition on this basis.

Finally, we must again recommend denial because your petition does not fully characterize the wastes in the wastewater treatment units. Without a complete understanding of the composition and nature of these wastes, we can not exclude these wastes or associated treatment units from regulation under 40 CFR Parts 262 through 268 and 270. Each of these deficiencies discussed below.

First, Koppers requested that the waste in all units of the wastewater treatment system (i.e., 2 aeration basins and 1 clarifier) be delisted. Among other things, delisting procedures require that the petitioner (1) properly sample and characterize the waste in all units seeking delisting; and (2) analyze the waste for factors (including constituents other than those for which the waste was listed) which may cause the waste to be hazardous. The Koppers petition is significantly deficient in both these areas.

Koppers provided sampling data only for the waste in the clarifier. We do not consider the samples taken from the clarifier to be representative of the waste that accumulated in the two aeration basins because potentially hazardous organic residues (that may be more dense than the wastewater) may be settling out in the aeration basins. This may cause the waste in the aeration basins to be substantially different from the clarifier wastes. Therefore, the Agency has no basis to delist the uncharacterized aeration basins.

Second, submitted data indicate that material other than K035 waste was added to the wastewater treatment system. Your firm added contaminated groundwater removed from other locations at the facility (as requested under CERCLA) to the wastewater treatment system before the units were sampled, but failed to clearly document the source or contents of the added groundwater. This information is essential under EPA's definition of hazardous waste." Mixtures of listed hazardous wastes, such as K035 and another solid or hazardous waste, are hazardous wastes. See 40 CFR §261.3(b)(2) ("the mixture rule"). EPA would need to evaluate all of the constituents in the resulting mixture before granting a delisting petition. To succeed, your petition would have to demonstrate that the ground water that you added to the units contained no wastes. Even if you could show that the ground-water contained no RCRA wastes, you would need to perform a full Apendix VIII analysis if you wanted to demonstrate that any of the constituents found in the samples from the R-C series wells originated in the contaminated ground-water from the CERCLA action rather than the K035 waste.

Third, the constituent analyses you conducted were limited to the constituents for which the waste was originally listed. However, available data indicate that other processes at your facility use pyridine, picoline, cyclohexane, or naphthalene. It is not clear whether constituents from these processes may end up in the petitioned wastewater. Further, contaminated groundwater containing these and/or other constituents has been added to the

wastewater treatment system. Consequently, your petition should have included an evaluation of the aeration basin wastes (including the volume of previously generated waste) and the clarifier wastes for the total concentrations of the following constituents as well as any other constituents that may be present from these process waters and/or contaminated groundwater:

acenaphthalene	2-methoxy-4-methylphenol
arsenic	dibenzo(a,h)anthracene
barium	ethyl benzene
benzene	fluoranthene
benzo(a)anthracene	indeno(1,2,3-c,d)pyrene
benzo(a)pyrene	lead
benzo(b)fluoranthene	mercury
benzo (2-choroisopropyl)ether	naphthalene
cadmium	nickel

chrysene	phenol
chromuim	picoline
cyanide	pyridine
cyclohexane	silver
cresote	selenium
2,4-dimethyl phenol	toluene

Fourth, a petitioner must also provide data indicating the waste to be delisted would not be hazardous based on any characteristic of the waste. You failed to provide such data despite our requests for it. The aeration basin wastes should have been analyzed for corrosivity (pH), ignitability, reactivity, and EP toxicity.

Finally, submitted data indicate that mercury, although not expected to be present in KO35 waste, is present in the waste. This fact further supports the Agency's position concerning the inadequacy of the waste characterization and analytical data you provided. Specifically, we are concerned with the source of this metal contaminant. The summary EP toxicity data submitted on November 17, 1986 showed that the mercury concentration in the March 12, 1986 sample, when subjected to the VHS model, exceeds the regulatory level of concern (i.e., National Primary Drinking Water Regulation for Mercury).

We recognize that we have not previously requested that you submit some of these missing data (e.g., aeration basin waste characterization data). As we explained above, however, your groundwater monitoring data and the status of your groundwater monitoring well network provide independent grounds for denying your petition. Therefore, even if you had supplied the missing data, and if it had allowed us to predict that no constituents in the waste exceeded a level of regulatory concern, we would have recommended denying your petition. The missing data, although potentially useful, is therefore not needed to support our decision.

For all of the above reasons, we consider the waste to be hazardous and subject to regulation under 40 CFR Parts 262 through 265 and to the permitting standards of 40 CFR Part 270. Accordingly, we will recommend to the Assistant Administrator that a denial notice be published in the Federal Register.

It is our practice to give petitioners the option of withdrawing their petitions to avoid publication of a negative

finding in the Federal Register . If you prefer this option, you must send us a letter withdrawing your petition and indicating that the petitioned waste is considered hazardous and will be managed as such. If you send such a letter, it should be forwarded to me within two weeks of the date of receipt of today's correspondence. If you choose not to withdraw your petition, a denial decision will be published in the Federal Register. You and other interested parties will be able to submit comments if you disagree with the Agency's decision.

If you have any questions regarding our decision, please contact Mr. Scott Maid of my staff at (202) 382-4783.

Sincerely yours,

Original Document signed

Bruce R. Weddle, Director
Permits and State Programs Division

cc: Bob Greaves, Region III
Sharon Feldstein, Region III (Superfund)
Jenny Utz, SAIC