9433.1986(23)

SAMPLING PLAN FOR DELISTING PETITION ADDRESSING HSWA REQUIREMENTS FOR ANALYZING FOR APPENDIX VIII COMPOUNDS

30 DEC 1986

Mark E. Grummer, Esq.
Environmental Enforcement Section
Land and Natural Resources Division
U.S. Department of Justice
Washington D.C. 20530

Re: United States v. Keystone Consolidated Industries

Dear Mr. Grummer:

I have reviewed the description of the sampling plan submitted by Keystone Consolidated Industries for the impounded hazardous sediments at its Bartonville facility. The outline of the proposed plan seems to be consistent with the methodology discussed in our earlier conference call with Keystone's representatives. I would like, however, to make some modifications to the list of organic compounds compiled by Keystone.

The list of Appendix VIII compounds presented by Keystone is not complete. After consultation with two chemists, I have determined that testing for acid-extractable (i.e., phenolic compounds) organics should be performed. Phenols are often used in degreasing operations, and could have been used by Keystone in that context. In addition, if oils are present in sludges, the oily sludges will likely contain phenolic compounds as degradation products. Keystone has proposed testing for other compounds (e.g., polynuclear aromatic hydrocarbons or PAHs) that are often associated with the presence of petroleum hydrocarbons, which suggests that Keystone is aware of the presence of some oil or grease in the sediments. The phenolic compounds can be evaluated either in separate or combined fractions with the other compounds on Keystone's list for minimal additional cost (estimated at approximately $200/sample, about $14,000 total).

Keystone should evaluate its sludge for total oil and grease content prior to any other analysis. If the amount of

oil and grease is found to exceed on percent, then the waste should be subjected to the Oily Waste Extraction Procedure (OWEP), which involved a dual solvent extraction, instead of the conventional EP test, which uses a dilute acetic acid solution.

I also believe that formaldehyde is a potential hazard and should be evaluated in the sediments based on the fact that formaldehyde was known to be influent to the waste stream. (In the Agency's evaluation process, the delisting office uses a regulatory standard of 7x10-5 mg/1 for formaldehyde, which is classified as a Class A carcinogen.) The Agency, however, does not have an approved test method for formaldehyde in solids, and alternate test methods (e.g., inorganic colorimetric tests) do not offer a detection limit as low as the calculated worst-case level (0.057 ppm) presented by Keystone. A GC/MS scan may be possible if the end of the analytic spectrum is lowered to below 30 to accommodate the low molecular weight of formaldehyde; the analysis would also involve the use of a formaldehyde standard in order to identify the compound by its retention time, and a strict quality control/quality assurance program. Even if such an analysis were performed successfully, however, there is little indication that a detection limit lower than 1 ppm could be achieved. The Agency labs are working on a high resolution method for formaldehyde, but it is not expected to be available until mid-1987 at the earliest. Until the Agency has an acceptable test method for formaldehyde, I do not believe that analysis of the sediments would be worthwhile in Keystone's case. It may be necessary, however, to require Keystone to test its ground water for formaldehyde (analysis of water is much easier than analysis of solids) in order to show that none of the formaldehyde has entered the aquifer.

The other constituents (e.g., pesticides, plastics, etc.) not found on Keystone's list are not reasonably expected to be present in the sediments since they are not used (and have not been used, according to Keystone) in the production of fabricated steel wire products. Testing for these constituents is, therefore, not necessary.

Sampling for the purposes of submitting a delisting petition should be as soon as possible. If you have questions concerning the chemical analysis of wastes, please contact Mr. Ian Phillips (of ERCO, an Agency contractor) at (617)

661-3111. If you have any questions concerning the petition review process, please contact me at (202) 382-4783.

Sincerely,

Scott J. Maid, E.P.
Environmental Protection Specialist
Permits and State Programs Division