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Lane:

Enclosed is the text of the paper I plan on presenting at the 1987
SPE-RETEC.

Sincerely,



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Enclosure

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TCLP AND IT'S IMPACT ON PVC

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Any of you that deal with the regulatory agencies know that they live in a world of initialisms and acronyms. A conversation in Washington might involve the latest activity among the PRP's regarding the draft ROD and how SARA will affect the COCO waste site. This can be confusing to the uninitiated ear. Today I'd like to discuss one of the latest initialisms to be added to our list of concerns. TCLP. In short, it is the Toxicity Characteristic Leaching Procedure.

Why is it with us? Under Section 3001 of the Resource Conservation and Recovery Act (RCRA), EPA was charged with identifying those wastes which pose a hazard to human health and the environment if improperly managed. It further called upon EPA to list such wastes specifically by name or by hazardous characteristics.

In carrying out this mandate, EPA identified a number of characteristics, which if exhibited by a waste, would cause it to be hazardous if mismanaged. One of these characteristics, the Extraction Procedure (EP) toxicity characteristic, was intended to identify wastes which pose a hazard due to their potential to leach significant concentrations of specific toxic chemicals. The EPA test involves a water leaching procedure applied to the test material. The liquid extract from this procedure was then analyzed for eight metals, four insecticides, and two herbicides. Regulatory thresholds were established for these 14 components. If the leachate contained greater than the threshold amount the waste was classed as hazardous.

EPA has recognized some shortcomings in the initial EP characteristic test. Specifically, the methods and references used to develop the criteria or threshold levels was felt to be too limited, the EP test was optimized to evaluate the leaching of elemental rather than organic constituents, and a number of operational shortcomings were inherent in the test method. EPA sought to rectify with the new proposed TCLP.

What is the new test. On June 13, 1986, EPA proposed to amend the hazardous waste regulations by: (1) introducing a new extraction procedure to be used, and (2) expanding the toxicity characteristic list to include 38 additional chemicals.

In EPA's words "this amendment will bring additional wastes under regulatory control". They were correct in that assessment. The expansion of the list included vinyl chloride monomer. The threshold level set for VCM was 0.05 mg/l or 50 ppb.

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What does all of this mean to the PVC industry? In short, if PVC does not pass the TCLP test it will become hazardous waste when discarded. What is the impact of PVC being a hazardous waste? The regulatory burden and disposal costs increase significantly, perhaps exponentially, when a hazardous waste is involved. This impact will be felt by PVC manufacturers and PVC users.

PVC users must determine whether their waste is hazardous. Sources of PVC waste include spilled resin, floor sweepings, equipment cleaning residue, obsolete scrap or raw materials and obsolete product. PVC users have had an obligation to make this determination since 1980. However, until TCLP came along, the extraction test used, EP toxicity, was not a rigorous and the chemical list did not include VCM as a threshold chemical. As a result, PVC users could judge their waste non-hazardous based on "gut-feel", rather than specific data. Most PVC users had little reason to worry about hazardous waste rules. TCLP will change that.

Certain handling and storage practices are required on-site when dealing with a hazardous waste. Depending on how much hazardous waste is generated and how long it is stored before disposal, the user may need to obtain federal or state permits and install facilities to meet regulatory standards. There are very specific regulations dictating the removal and transportation of hazardous waste to authorized or permitted waste sites.

Costs for disposal will increase. Non-hazardous waste can be buried on-site or sent to a public landfill cheaply. Typical cost is around \$10/yd³. Landfilling hazardous waste ranges from \$100-200/yd³. The expense of landfilling is high, but this situation could get worse. As more wastes are classed as hazardous, landfill availability is decreasing and cost will increase further. At the same time landfill bans for certain hazardous waste are being proposed. If VCM containing wastes were banned from land disposal, incineration would be the only option for disposal. Incineration costs could be as much as \$1,000 for the same cubic yard of material. Incinerator capacity is already very sparse.

The impact of TCLP on PVC producers includes all of the items just discussed, and more. Current data would indicate that no raw wastewater in PVC/VCM industry contains less than 50 ppb of vinyl chloride. Based on that data, it is anticipated that every wastewater or stormwater impoundment in the PVC production industry will become subject to EPA regulations governing the design and construction of facilities handling hazardous waste. This set of

regulations puts strict specifications on the construction and management of impoundments in hazardous water service. A conservative estimate indicates it would cost approximately one million dollars per impoundment to retrofit existing facilities to meet the regulations. This potential impact on the industry was not addressed by the agency in the proposed rulemaking. The PVC/VCM industry and the Vinyl Institute are working aggressively to cause the agency to consider this issue.

What is the potential for PVC to not pass the TCLP procedure and be classed as hazardous waste? Due to the scarcity of laboratory capability data on PVC waste is sparse, but indications are that many PVC wastes will fail the test. Conversations among PVC producers have indicated that resin with a residual vinyl content above 2 ppm may fail TCLP and that resin with a residual vinyl content above 5 ppm always fails. Keep in mind this information is based on minimal data. Further data is being generated. The point must be made that until the resin becomes waste, the TCLP rulemaking has no effect.

The proposed TCLP test requires specific equipment to be used for the extraction process. Based on Vista's experience it costs approximately \$5,000-6,000 to get the equipment necessary. Outside testing laboratories are charging approximately \$300 per sample to run the TCLP test. The analytical variability of the test is being evaluated but measuring the 50 ppb threshold for VCM may result in variability that effectively drives the threshold downward.

As mentioned the industry has commented to the agency regarding the impact of TCLP and the 50 ppb threshold. We feel that much of the PVC waste that may fail TCLP is not hazardous to the environment. EPA has not demonstrated a benefit that justifies the impact on the PVC industry, nor have they fully considered the impact on PVC producers. As of this writing it is anticipated that the final TCLP regulation will be promulgated in February of 1988.

In summary the revised TCLP proposal will have a significant impact on the PVC industry. It could result in many prime grade PVC resins being classed as hazardous when they are to be disposed of. This will result in higher disposal costs and regulatory burden costs on many PVC users. The impact on the PVC/VCM industry will be even greater due to the impact on wastewater impoundments.

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