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MEMORANDUM

SUBJECT: Classification of Solvent and Commercial Chemical  
Product Waste Streams

FROM: Devereaux Barnes, Director  
Characterization and Assessment Division (OS-330)

TO: Howard Wilson, Manager  
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Environmental Health and Safety Division (PM-273F)

This memorandum is in response to an inquiry you sent to Ron Josephson of my staff, dated June 8, 1989, and to questions presented at a meeting on June 14, 1989. Specifically you request a definitive classification of solvent-contaminated wastestreams in order to prepare a guidance document for EPA laboratories. We will answer each of your concerns point by point in order to ensure clarify.

1) During organic liquid-liquid extractions, solvents (e.g. methylene chloride) are used, which are minimally (<2%) soluble in water. Thus, after the extraction, the aqueous phase contains trace amounts of solvent. Does this aqueous phase need to be disposed of as F002 spent solvent, since the "before use" solvent concentration was greater than 10%?

The aqueous phase from this separation is considered to be analogous to a process stream which has become contaminated with solvent constituents; this waste is not a spent solvent stream and would therefore not be classified as F002.

2) In other analyses, the extraction of an organic analyte is performed with solvents contained only in the F003 listing, such as methanol. Should the aqueous waste be classified as F003 spent solvent even if it not ignitable?

Again, the scope of the listing did not include aqueous process waste streams contaminated with solvent

3) In a memorandum dated December 6, 1988, the Agency states that solvent-contaminated aqueous streams resulting from liquid-liquid extractions are not spent solvent and need be managed as a hazardous waste only if they exhibit one off the four characteristics defined in 40 CFR 261.21-261.24. Is this still true and is this applicable to the above situations?

Yes. The memorandum you reference pertained to processes at a pharmaceutical production facility. However, sufficient analogies exist among these situations that the process waste interpretation may be used in these cases.

4) A laboratory buys a commercial chemical product in order to formulate standards for quality assurance (QA) purposes. The QA standards are then sent to other laboratories for analysis. If excess standard solutions existed which were not needed for analysis but need to be disposed, would these formulations be considered commercial chemical product wastes under 40 CFR 261.33 (assuming that there is a sole active ingredient)?

Yes. Dilution of a commercial chemical product with water is not considered use of a commercial chemical product in this case. Thus, the excess QA standards intended for disposal would be listed hazardous wastes under 40 CFR 261.33.

5) A laboratory synthesizes a chemical to be used as a QA standard. The lab then distributes this chemical (or diluted QA standards) to other laboratories for analysis. Would excess quantities of these materials be considered hazardous wastes under section 261.33 (assuming that there is a sole active ingredient)?

Yes. Materials synthesized in a laboratory in lieu of buying a commercial product (because of cost savings or because the product is difficult to obtain) are equivalent to commercial chemical products, and therefore would be regulated under 40 CFR 261.33 when disposed. Again, excess QA standards made by diluting these compounds are also covered by the listings, when disposed.

Thank you for your inquiry. If you have any other questions on these topics, please contact Ron Josephson at 475-6715.