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RCRA Permit Policy Compendium

Volume 5

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Identification and Listing of Hazardous Waste (Part 261)

- Criteria for Identifying Hazardous Waste
- Characteristics of Hazardous Waste
- Lists of Hazardous Waste

ATK1/3590/06 kg

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Criteria For Identifying The Characteristics Of Hazardous Waste And Listing Hazardous Wastes

9442

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE DEC 26 1984

9442.1984(01)

SUBJECT RCRA Regulatory Status of Contaminated Groundwater

FROM John Skinner, Director
Office of Solid Waste (WH-562)

TO James Scarbrough, Chief
Residuals Management Branch, Region IV

The memo dated July 20, 1984, which you retransmitted December 7, 1984, explores the regulatory status of contaminated ground water. Actually, the issue is not whether groundwater that contains Appendix VIII constituents is a hazardous waste, because generators do not use Appendix VIII to identify hazardous waste. Rather, EPA designates solid wastes that contain Appendix VIII constituents as listed hazardous waste after considering the criteria listed in 40 CFR §261.11(a). Then a generator identifies hazardous waste using the criteria listed in 40 CFR §261.3(a) and the decision matrix of 40 CFR §262.11.

Thus, to answer the question: "Is ground water contaminated by hazardous waste considered to be hazardous waste?" one uses the criteria in §261.3 to see if the water was a solid waste, and either derived from listed waste or hazardous by characteristics identified in Subpart C. Note that §261.3(c)(2) says that any solid waste generated from the treatment, storage or disposal of a hazardous waste is a hazardous waste, and §261.3(d) says a waste is no longer hazardous when it no longer exhibits the characteristics of hazardous waste identified in Subpart C or until a listed waste (or waste derived from listed waste) has been excluded under the petitioning process.

Therefore a contaminated groundwater that is "collected" and derived from listed waste or hazardous by characteristic is a hazardous waste and subject to Subtitle C regulation. However, the reauthorization bill allows underground injection of contaminated ground water that has been treated to substantially reduce the hazardous constituents.

Of course, the implications on permitting, interim status compliance order corrective actions, and treatment of ground water will need to be studied. If you have any further questions, do not hestitate to contact Irene Horner of my staff at 382-4804.

cc Hazardous Waste Branch Chiefs, Regions I-III and V-X
Gene Lucero, Enforcement

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

DECEMBER 85

Burning and Blending

8. A generator of used oil burns the used oil on-site in an industrial boiler. The used oil neither exhibits a Subpart C characteristic of a hazardous waste nor exceeds any of the specification levels listed in §266.40(e) (November 29, 1985, Federal Register (50 FR 49164)). If the generator blends unused product xylene (hazardous waste number U239) into the used oil, does he then have a hazardous waste fuel (per §261.6 (a)(2)(ii)) which is subject to regulation under Subpart D of Part 266?

   Xylene is a commercial chemical product listed in §261.33(f). U.S. EPA has determined, however, that listed commercial chemical products are not solid wastes (or hazardous wastes) when burned for energy recovery if they are themselves fuels or normal components of commercial fuels per §261.33 which states that such materials are not "discarded", and restated in footnote 8 of the November 29, 1985, Federal Register (50 FR 49168). Xylene is a normal component of fuel. Therefore, the unused xylene is neither a regulated solid waste nor hazardous waste when burned for energy recovery. The generator's used oil has not been mixed with hazardous waste and is not a hazardous waste fuel. Therefore it will not be subject to Part 266, Subpart D regulation per §261.33 and 261.6(a) (2)(ii). The used oil, however, is being burned for energy recovery and so is regulated under Part 266, Subpart E, per §266.40(a). Section 266.42 states that generators who burn used oil are subject to §266.44. The burner must notify under Section 3010 of RCRA for his used oil management activities and maintain documentation or analysis showing that the used oil meets the specifications.

   Source: Bob Holloway (202) 382-7917

JAN 16 1986

Mr. John Slemmer
Environmental Manager
Solid Tek Systems, Inc.
5371 Cook Road
P.O. Box 888
Morrow, Georgia 30260-0888

Dear Mr. Slemmer:

This is in response to your letters dated November 27 and December 27, 1985, concerning the identification of residues generated from the treatment of hazardous wastes. In particular, you ask whether the identifiction numbers that go on the manifest that accompanies the treated waste should be based on the hazardous waste characteristics of the treated waste, the composition of the treated waste, or both.

The answer to this question depends both on which wastes are being treated and the characteristics of the treatment residue. If the TSD facility is treating only characteristic hazardous wastes, the identification number that goes on the manifest for the treatment residue would be that number that is assigned to the characteristic for which the waste still exhibits (i.e., if the treated waste exhibits the characteristic of ignitability, the identification number would be D001). Of course, if the treatment residue no longer exhibits any of the characteristics of hazardous waste, the waste would no longer be hazardous and subject to Subtitle C control. If, on the other hand, the treatment facility treats both listed and characteristic hazardous wastes or just listed hazardous waste, the identification number that goes on the manifest for the treatment residue would be that of the untreated listed waste and that number that corresponds to the characteristic for which the waste exhibits, if any. Thus, in the example provided in your letter, you are correct that the identification number for the treated residue is U012. You are also correct that the TSD becomes a generator of the treated waste.

I hope this adequately responds to your request. If I can be of any further assistance, please feel free to give me a call at (202) 475-8551.

Sincerely,

Matthew A. Straus
Chief
Waste Identification Branch (WH562B)

JUN 30 1986

MEMORANDUM

SUBJECT: Disposal of Anti-Neoplastic Agents in Hospital Wastes

FROM: Jeff Denit, Deputy Director
Office of Solid Waste (WH-562)

TO: Kenneth D. Feigner, Chief
EPA, Region X
Waste Management Branch

The issue regarding possible hazards posed by anti-neoplastic drugs has been brought to our attention within the last couple of years. With large increases in both the numbers of anti-neoplastics available for use in chemotherapy and the number of patients being treated with these drugs, hospital personnel have expressed concern with handling and disposal of these chemicals (and materials contaminated with these chemicals).

Anti-neoplastics, as a class of chemicals, are not regulated under RCRA. However, the following are listed as hazardous waste under 40 CFR. 261.33(f):

U035 Chlorambucil
U058 Cyclophosphamide
U059 Daunomycin
U150 Melphalan
U010 Mitomycin C
U206 Streptozotocin
U237 Uracil mustard

However, since these wastes are identified only as "toxic" wastes, under §261.22(f) they are subject to the standard small quantity generator exclusion. As a practical matter, this means that unless large volumes of these chemicals are discarded (i.e., 100 kg/mo or more) which in most cases is unlikely, or the facility is a large quantity generator, the majority of these wastes will remain unregulated.

The Agency is aware that manufacturers and health care facilities recommend incineration of anti-neoplastics and materials contaminated with these chemicals. Although there is no concensus among health care professionals as to the appropriate temperature

necessary for destruction, many facilities are incinerating these wastes at temperatures between 1800°-2200°F. Since the Agency has not investigated the efficiencies of incinerating these wastes, we have not provided guidance or taken a position with respect to this issue.

At this time, we have no plans to commit resources to the study of anti-neoplastics or to initiate any further rulemaking action. We recommend that State officials (in Seattle) contact the manufacturers of these drugs to gather information on recommended handling and disposal practices.

SUBJECT: Carbon Regeneration Facilities

FROM: Marcia Williams, Director
Office of Solid Waste (WH-562)

TO: Stephen R. Wassersug, Director
Hazardous Waste Management
Division (3HW00)

This is in response to your March 11, 1986, memorandum regarding the applicability of the RCRA hazardous waste rules to carbon regeneration facilities. In particular:

1) Is the spent carbon a solid waste?

In general, yes. As you correctly state in your letter, spent carbon can be defined as a spent material or a sludge (i.e., spent carbon would normally be considered a spent material, unless it results from pollution control in which case it is considered a sludge). Spent materials (whether or not they are listed or contain a listed hazardous waste) and listed sludges being reclaimed are solid waste. In addition, if the spent carbon contains a characteristic spent material (and the spent carbon itself exhibits a hazardous waste characteristic), it also is a solid waste. On the other hand, if the spent carbon contains a characteristic sludge or by-product, it is not defined as a solid waste (even if the spent carbon exhibits a hazardous waste characteristic).

2) Is the spent carbon a hazardous waste?

Yes. That spent carbon defined as solid waste (as described above) is also hazardous if it contains a listed hazardous waste or exhibits a hazardous waste characteristic.

3) Which Part 264 standards apply?

If the spent carbon is a solid and hazardous waste, the owner or operator of the facility must comply with the

storage facility requirements, including receiving a permit. The actual regeneration facility, including the afterburner, is exempt from regulation, however. In particular, recyclable materials other than those used in a manner constituting disposal are currently subject only to transportation and storage standards.1/ The recycling facility itself, including emissions from the facility, are not currently subject to regulation. (You should note that if the facility did not (voluntarily) use an afterburner to minimize organic emissions, the question of RCRA applicability would not even have been raised.) In the future, we intend to look at other recycling operations such as carbon regeneration to determine if standards are warranted.

Your concern that a determination that the off-gas is an unregulated emission would have adverse ramifications for incineration facilities does not appear to be a major problem. You expressed concern that an incinerator operator could vaporize his waste in a nonflame device prior to injection in an incinerator and claim that the unconfined gas is an unregulated treatment emission. Such a claim is not likely to be successful because the operator would need to show that the vaporization constitutes bona fide recycling not integral to the incinerator. We don't believe such a showing can be made.

If you have further questions or comments, contact Matt Straus at 475-8551 or Robert Holloway at 382-7936.

1/ Recyclable materials burned for energy recover are only subject to the transportation and storage rules. The actual burning itself will be regulated in the future (i.e., we plan to propose this summer standards that would control emissions from boilers and industrial furnaces burning hazardous waste and off-specification used oil fuels).

MAY 6 1986

Honorable Richard G. Lugar
United States Senate
Washington, D.C. 20510

Dear Senator Lugar:

Thank you for your letter of April 9, 1986, concerning the Union Carbide facility in Henderson County, Kentucky. You asked about the location of the plant and the listing of TF-1 under the Resource Conservation and Recovery Act (RCRA). I would like to first clarify my understanding of the proposed Union Carbide operation.

Union Carbide has applied for a permit to recycle TF-1, used as a flushing agent in electrical transformers, that has been contaminated with PCBs. Solid waste from this recycling process will be transported off-site to a permitted TSCA facility for incineration. The TF-1 will be processed at the Henderson facility after Union Carbide drains and flushes the transformers at its customer's site.

The State of Kentucky issued Union Carbide a construction permit under the authority of the State's Air Pollution Control Act in December 1985. Union Carbide also applied to EPA for a Toxic Substances Control Act (TSCA) permit. Union Carbide submitted its application to EPA's Region IV office in February 1986 and a test demonstration plan in early April 1986. Both submittals are now under review by the Region. TSCA requires that EPA consider location during this review to ensure that permit issuance would not constitute an "unreasonable risk" to human health and the environment. In addition, due to citizen and Congressional concerns, EPA Region IV is voluntarily conducting a public health and environmental assessment of the area surrounding the facility.

Prior to operation, Union Carbide must successfully conduct demonstration testing, and secure a TSCA operating permit and a Kentucky Air Pollution Control Act operating permit. Once in operation, the facility must conduct routine testing to ensure permit standards are continually met.

Secondly, I would like to clarify why the information presented by Dr. Howard E. Dunn is not sufficient in itself to list TF-1 as a hazardous waste. The possible inclusion of one or more of the

chemical constituents of TF-1 in 40 CFR 261.33 would not automatically make a mixture of these constituents a hazardous waste. This "listing" refers only to the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. Thus, TF-1 could contain a constituent listed in 40 CFR 261.33 and not be a hazardous waste. I cannot comment on the specific chemical composition of TF-1, due to regulations concerning confidential business information.

In order for EPA to promulgate a rule listing a waste as hazardous, factors in addition to toxicity must be considered. These include the concentration of the constituents, quantity of waste generated, the persistence and potential of the constituents to migrate from the waste and move into the environment, and the plausible types of mismanagement to which the waste may be subject. Based on these factors, a waste will then be "listed" when the data allows the Agency to conclude that the waste may pose a substantial present or potential hazard to human health or the environment when improperly managed.

Because of the absence of existing data in this area, EPA has scheduled toxicity tests for several of the TF-1 components. Once this testing is completed, a determination can be made on whether these constituents are hazardous and whether the waste should be listed.

If you should have specific questions on the permitting process, you may wish to contact Connie Jones, EPA Region IV (404-881-2091), or J. Alex Barber, Kentucky Department of Environmental Protection (502-564-6716). Please let me know if you have any further questions.

Sincerely,

J. Winston Porter
Assistant Administrator

cc: J. Alex Barber
Connie Jones

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9442.1986(04a)

MAY 9 1986

Mr. Richard T. Enander
386D Harry Andrews Road
West Greenwich, Rhode Island 02816

Dear Mr. Enander:

Your inquiry of April 22, 1986 has been referred to the Characterization and Assessment Division of the Office of Solid Waste.

EPA has evaluated the relative carcinogenic potencies among 54 suspect human carcinogens. These are published in many of the Health Assessment Documents developed by the Office of Health and Environmental Assessment (OHEA). I have enclosed a copy of such a table from a recent Health Assessment Document for tetrachloroethylene. For further information concerning other suspect carcinogens, mutagens, or teratogens, I suggest you contact Mr. Peter Preuss, Director of OHEA. He can be reached at (202) 382-7315.

The Office of Solid Waste uses this health assessment information along with other evaluations of potential exposure and mismanagement in making a regulatory decision on whether a waste is hazardous. The criteria EPA uses are codified at 40CFR Sections 261.10 and 261.11, a copy of which is also enclosed.

I hope these lists are useful to you.

Sincerely,

Eileen B. Claussen
Director
Characterization & Assessment
Division (WH-562B)

Enclosures

AUG 31 1987

Mr. Neil Gingold
General Counsel
Envirosure
333 Ganson Street
Buffalo, NY 14203

Dear Mr. Gingold:

This is in response to your letter of June 12, 1987, in which you requested clarification regarding waste tracking and classification. First, I would like to apologize for taking so long in responding to your letter; I hope my delay hasn't caused you any problems. The answers to your questions are as follows:

1. EPA's current policy on mixing low and high Btu wastes is summarized in an enforcement guidance memo published in the Federal Register of March 16, 1983. (Enclosure 1.) As the guidance memo explains, a determination of what constitutes "sham burning" depends on a number of factors presented by the circumstances of a particular case; the energy value of the wastes being blended or burned is likely to be of primary significance in most cases. Blending a low Btu waste (i.e., less than 5000 Btu/lb.) with a higher Btu waste would not normally change the "sham" character of the subsequent burning.

   You should note that, as the guidance memo points out, other factors are considered in distinguishing sham from legitimate burning, and that EPA will set a priority on sham burning in non-industrial settings. Also, as you correctly point out, EPA has proposed a new fuels policy in the form of revisions to the hazardous waste burning regulations. On May 6, 1987, EPA proposed standards for boilers and furnaces burning hazardous waste. (See Enclosure 2.) The proposed standards would apply to boilers and furnaces burning hazardous waste regardless of whether the purpose was energy recovery or destruction, so the "sham recycling" distinction would no longer be relevant. (Id. at 16989.) EPA has accepted public comments on the May 6 proposal and we will be making decisions regarding the final rule within the next year. Until this regulation is made final, the enforcement policy will remain in effect.

As a final point on burning of wastes, you should note that the U.S. Court of Appeals for the District of Columbia reached a decision on July 31, 1987, that calls into question EPA's authority to regulate certain waste recycling activities. EPA is studying the opinion to determine its scope. Because the Court has not yet issued its mandate, the regulations currently in the Code of Federal Regulations defining what is "solid waste," and establishing regulations for recycled hazardous waste, remain in effect.

2. Listed wastes never "lose their identify." Wastes are tracked on the manifest by waste code under U.S. Department of Transportation (DOT) regulations at 49 CFR Parts 171 and 172.1/ For mixtures, you must enter each waste code in the mixture on the manifest. Further, you should note that facilities in interim status must specify on their "Part A" permit application the hazardous waste they will be receiving (see 40 CFR §270.13(j)) and must amend the Part A to receive new wastes (§270.72(a)). Also, a RCRA permit granted to a treatment, storage, or disposal facility may specify the specific hazardous wastes the facility is authorized to accept. Finally, a treatment, storage, or disposal facility must keep an operating record with very specific information on each hazardous waste at the facility. (See §§264.73 and 265.73.)

3. All of the requirements referenced in answer number 2, above, require tracking of individual wastes by shipment (and if necessary, by container).

4. The proper classification of waste treatment residuals (the filter cake in your case) depends on the wastes entering your treatment system. Under 40 CFR §261.3(c)(2)(i), any waste derived-from treating a hazardous waste is itself a hazardous waste. Such "derived-from" wastes

1/ Please note a couple of points regarding waste shipment tracking. First, the DOT rules referred to above do not require the EPA waste code for "U" and "P" listed wastes. This is because U and P chemicals must already be described by their specific chemical names under 49 CFR Part 171. You should also note that although EPA does not require the EPA waste codes to be placed on the hazardous waste manifest, some States do require EPA's (or their own) codes to be entered on the manifest in addition to the DOT requirements.

are assigned the waste code(s) of the incoming (i.e., treated) wastes. Thus, if more than one listed waste was treated, the treated residue would be identified by all the listed wastes treated.

If you have further questions in this area, please contact Mike Petruska of my staff at (202) 475-6676.

Sincerely,

Sylvia Lowrance, Acting Director
Characterization and Assessment
Division

Mr. Richard T. Boulware
Vipont Botanical Laboratories
2403 E. Rivett Drive
High Point, North Caroline 27260

JUL 2 1986

Dear Mr. Boulware

This is in response to your May 27, 1986 letter, requesting an interpretation of the federal hazardous waste rules as they apply to the wastes to be generated in your extraction process. As you state in your letter, this process uses the solvent methylene chloride to recover alkaloids from plant matter. The two wastes for which you request specific information on are: (1) the solid cake remaining in the basket centrifuge, and (2) the wastewater stream discharged to a POTW.

Solid Cake - I agree with your understanding that the solid cake in the basket is not a listed hazardous waste, namely, a spent solvent--and would only be hazardous if it exhibits any of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity); in addition, when the TCLP is promulgated, you will also need to determine whether the solid cake exhibits this characteristic.

Wastewater - This wastestream, as you state in your letter and as we discussed on June 27, comes off the centrifuge as a wastewater that contains methylene chloride; the methylene chloride is then stripped off to be reclaimed while the wastewater is discharged to a POTW. Under this scheme, the wastewater also is not considered a listed waste (nor does it contain a listed waste). Therefore, this stream also would only be hazardous if it exhibits any of the existing or future hazardous waste characteristics.

Finally, although you did not request an interpretation of the status of the spent methylene chloride under the federal hazardous waste rules, you should be aware that the spent methylene chloride that comes off the liquid extractor is considered a listed hazardous waste and may be subject to regulation under Subtitle C of RCRA. (See the Final Definition

of Solid Waste Rulemaking, 50 FR 614, January 4, 1985 and the Final Tank Rules that were signed by the Administrator on June 30, 1986, to determine the actual regulatory status of the solvent spent methylene chloride.)

Please feel free to give me a call if I can be of any further assistance; my telephone number is (202) 475-8551.

Sincerely,

Matthew A. Straus
Chief
Waste Characterization Branch

AUG 21 1986

Ms. Janet Matey
Chemical Manufacturers Assn., Inc.
2501 M Street, N.W.
Washington, D.C. 20037

Dear Ms Matey:

I would like to summarize the information you discussed with Eileen Claussen during your phone conversation regarding the Office of Solid Waste's program for relisting hazardous wastes. Our goal is to amend the current hazardous waste listings so that their applicability can be better defined; our current thinking is to redefine the listings by setting concentration limits (either in the waste or in the leachate from the waste) for the various toxic constituents currently identified or expected to be added in Appendix VII of Part 261. That is, waste or leachate from the waste that contains the toxic constituents of concern below the levels to be set in the amended listings, would no longer be designated as a listed hazardous waste; the waste would still be hazardous, however, if it exhibits one or more of the hazardous characteristics defined in 40 CFR 261.21-261.24.

Based on a review of the available data, the Agency has identified the need to obtain additional constituent concentration data for the currently listed wastes in order to determine the level at which the constituents of concern could present a hazard. Thus, we plan to visit a number of facilities generating the listed hazardous wastes, and collect samples of these streams for analyses. We are in the process of identifying plants to visit and will contact those plants within the next few weeks to make arrangements for sampling this fall.

We encourage your members to submit any available data on waste or leachate composition, ground water monitoring, and toxic effects that will help the Agency establish appropriate concentration levels for toxic constituents in their wastes.

Your cooperation and assistance in this effort will be appreciated. Should you have any questions regarding this program or need additional information, please contact me at (202) 382-4766.

Sincerely,

Matthew A. Straus
Chief
Waste Characterization Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 24 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

Mr. Richard Ekfelt
Director of Regulatory Affairs
American Coke and Coal Chemicals
Institute
1255 Twenty-third Street, NW
Washington, DC 20037

Dear Mr. Ekfelt:

Jeff Denit and I appreciated the opportunity to meet with you on June 3, 1987, to discuss the Agency's study to determine whether additional residual streams from by-product coke plants and coal tar refineries should be listed as hazardous wastes under RCRA. This meeting helped us understand the concerns of ACCCI members about the study; we hope that it clarified the objectives of EPA's study of the coke industry. This letter provides additional information to address the questions and concerns that were raised by ACCCI in your meeting with Ed Abrams and Dennis Wallace on May 14 and your May 26 letter to Mr. Abrams. The responses below are organized to be consistent with your letter.

1a. To date, "trigger" levels for specific constituents present in coke wastes have not been established. When established, these "trigger" levels will be health-based, not technology-based, and will be determined by first developing exposure limits for human consumption via drinking water and inhalation. Next, the exposure limits will be used to calculate leachate and air emission concentrations using models developed by the Agency that predict transport through ground water or dispersion through air. Finally, models that predict rate of constituent release from the waste will be used to calculate the regulatory levels in the residual stream.

1b. The term "primarily aqueous", as used in Mr. Wallace's letter to Mr. Eagle, referred to waste water streams. Specific examples include waste ammonia liquor, waste waters from direct contact final coolers and light oil recovery operations, and tar refinery waste waters. The Agency has not established specific limits for solids content, organics content, or percent water to define these streams; they essentially are the streams that are commonly defined by the industry as waste waters. The leachate procedure that will be used for the streams

is the same TCLP procedure that will be used for all streams. The TCLP procedure is defined in Appendix I to 40 CFR Part 268. (See 51 FR 40643 for a definition of the procedure.) For residuals that have less than 0.5 percent solids (a condition that we assume will hold for most waste waters), the residual stream is the leachate per that procedure.

2. Any waste water discharges that are point source discharges under Section 402 of the Clean Water Act are excluded from the definition of solid waste (and consequently are not hazardous wastes) per 40 CFR Part 261.4(a)(2). Further, persuant to 40 CFR Part 264.1 (g)(2), the requirements of Part 264 do not apply to the owner or operator of a wastewater treatment unit as defined in 40 CFR Part 261.10. Among other requirements, Part 261.10 defines waste water treatment unit as a device which is Part of a waste water treatment facility which is subject ot regulation under either Section 402 or 307(b) of the Clean Water Act; and meets the definition of tank (also defined in Section 261.10.). Thus, tanks may meet the criteria for the exclusion, but the exclusion would not apply to surface impoundments. As you are aware, some coke plant wastewaters are treated in surface impoundments rather than tanks; therefore, OSW is obligated to examine the need for regulating these waste streams and treatment units under RCRA. The samples that we are collecting are necessary to determine the need to regulate these streams.

3. The decisions related to listing additional coke plant residuals as hazardous wastes will be based on the criteria established in 40 CFR Part 261.11. These criteria are based on the potential hazard posed by the wastes and the potential for mismanagement of the waste and, as such, are not related directly to waste minimization concerns.

The listing of these wastes probably will not require major changes in the recycling and recovery practices that are used by many coke plants. The proposed rule for burning waste in boilers and industrial furnances (see 52 FR 17019), May 6, 1987), specifies that the coke and coal tar produced when tar decanter sludge (K035) is used as a feedstock are classified as products not wastes. The rationale for this proposal was that the residual and the normal feedstock or product have common constituents and that the residual streams and products are associated with the same

process. Based on our understanding of the residual streams that we are examining and the current recylcing practices for those streams (use as a feedstock in the coke ovens or combination with tar in the decanter), these practices are likely to be deemed acceptable under the rationale established for the K035 stream.

4. The "trigger" levels that will be established under this listing/relisting study will not define technology-based limits to whcih residuals must be treated; they will be used to determine whether a waste stream is a "listed waste." When a waste stream has constituents at or below the "trigger" levels, or if it is treated to reduce constituents to those levels, it will cease to be a hazardous waste, unless it exhibits one of the hazardous characterisitics defined in 40 CFR 261.21-24. If the residual stream has constituent concentrations above the "trigger" level, it will be a hazardous waste and must be treated, stored,and disposed in a manner that complies with the requirements of 40 CFR Parts 262 through 266 and 270.

5. As a part of this study, detailed information on waste management practices has been requested from most coke plant and tar refinery operators. These data will be compiled and summarized in the background documents that form the basis for the listing decision. Based on the recent proposal related to tar decanter sludge that was described above, we anticipate that the information presented in these background documents will enable the Agency to make sound judgements on environmentally acceptable management practices, as well as the potential for a given waste to be improperly managed.

I hope that these responses have addressed the concerns that you raised in your May 26 letter. If you have questions about the responses please call me at (202) 382-4769.

Sincerely,

Robert Scaberry

Robert Scaberry
Chief, Listing Section

cc: Jeff Denit
Matt Straus
Ed Abrams
Dennis Wallace

JUL 28 1987

Ms. Shimlee Schiffman, Chief
Bureau of Hazardous Waste Regulation
and Classification
State of New Jersey
Department of Environmental Protection
401 East State Street
Trenton, NY 08625

Dear Ms. Schiffman:

This is in response to your letter of June 10, 1987, in which you requested our interpretation on several issues involving electroplating rinsewaters. Specifically, you requested confirmation of your conclusions drawn as a result of your telephone conversations with Mr. David Topping, of my staff. In addition, you requested our answers to five specific questions relating to the hazardous waste/non-hazardous waste status of used ion exchange resins that were used to treat electroplating rinsewaters.

First, I would like to respond to the two questions you discussed with Mr. David Topping. In particular, I agree with your conclusions that: 1) rinsewaters from electroplating operations were not meant to be included in the F009 listing (spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process), and 2) residual droplets of stripping, cleaning, or electroplating solutions present on the metal would not make the rinsewaters hazardous by the "mixture rule" when the metal parts are rinsed off. In the first case, rinsewaters are not considered spent stripping or cleaning bath solutions; in the second case, trace amounts of plating bath solutions that are carried over to rinse tanks are not considered to be a solid waste mixing with another solid waste. These materials are in use and are not wastes until they are spent and removed from the process. The remaining questions will be answered in the same order that they are presented in your letter:

1. Your first question asks "can a wastewater treatment system which only is treating a non-hazardous electroplating waste (such as rinsewaters) produce an F006 listed hazardous waste?" The answer to this question is yes; the sludge from the treatment of electroplating wastewater contains toxic metals at concentration many times higher than their concentration in the wastewaters themselves. It should also be noted that although electroplating rinsewaters are not specifically listed

in 40 CFR 261 Subpart D, they may exhibit a hazardous waste characteristic (EP toxicity) under 40 CFR 261 Subpart C for certain toxic metals.

2. Your second question asks "would an ion exchange canister which has been used to capture metals and cyanide from non-hazardous electroplating rinsewaters only, be considered to contain wastewater treatment sludges from electroplating operations (EPA Hazardous Waste No. F006)?" The answer to this question also is yes. Section 260.10 of 40 CFR defines sludges as "any solid, semi-solid, or liquid waste generated from a municpal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or effluent from a wastewater treatment plant." Thus, any residuals generated from treatment of wastewaters from electroplating operations for pollution control would be considered an F006 listed waste.

3. Your third question asks "is the ion exchange resin, which is similar in function to activated carbon (i.e., used to remove pollutants from wastewaters), considered a 'sludge' in this situation? Once again, the answer is yes for the same reason given above.

4. Your fourth question asks "do rinsewaters from electroplating operations fall within the scope of any listed hazardous wastes?" The answer to this question is no; electroplating rinsewaters are not a listed hazardous waste under 40 CFR 261, Subpart D. However, as I indicated earlier, electroplating rinsewaters may exhibit a hazardous waste characteristic under 40 CFR 261, Subpart C.

5. Your fifth question asks "does the 'mixture rule' apply to rinsewaters from electroplating operations due to the presence of 'residual droplets' of stripping, cleaning, or electroplating solutions?" This question was answered previously.

If you have further questions relating to this subject, please feel free to call Mr. Edwin F. Abrams at (202) 382-4787.

Sincerely,

Matthew A. Straus, Chief
Waste Characterization Branch

OCT 26 1987

Ronald J. Senna
Director - Environmental Compliance
International Flavors and Fragrances, Inc.
800 Rose Lane
Union Beach, N.J. 07735

Dear Mr. Senna:

This is in response to your letter of September 25, 1987, concerning the regulatory status of your fragrance ingredients. Based on the information you provided and the subsequent phone conversation with our consultant, Geo/Resource Consultants, Inc., EPA's understanding of the waste generation process is that Acetone, ethyl acetate, and xylene solvents are periodically used to clean out the reactor vessel. The spent solvents generated from that cleaning operation are drummed and sent off site for proper management as F003 wastes. A light coating or residue consisting of fragrance oils and trace amounts of solvent remains on the walls of the vessel. IFF then washes the vessel out with soap and water. This waste washwater carrying the oil and solvent residue then flows to an oil/water separator for treatment.

Based on this scenario, the Agency's interpretation is that the solvent-contaminated washwater is not within the scope of the Hazardous Waste No. F003 listing for spent nonhalogenated solvent. The subject waste stream is generated from the washout of a reactor vessel containing residues of solvent and fragrance oils. Therefore, the waste is not a spent solvent, but a process wastewater contaminated with solvent constituents. This waste is very different from a solvent stream that has been used and as a result of contamination can no longer be used as a solvent without further processing (see Section 261.2(c)(1) and 50 FR 53316). It is not the Agency's intent to regulate water from washout of a reactor vessel as F003.

If the washwater sent to the oil/water separator is ignitable, it would be classified as a D001 hazardous waste, and would remain such for as long as it exhibits the ignitability characteristic. According to 40 CFR Section 261.3(c) and (d), any residues resulting from treatment of D001 are hazardous wastes only if they continue to exhibit a characteristic found under 40 CFR, Part 261, Subpart C.

If you have further questions in this area, please contact Michael Petruska of my staff at (202) 382-7729.

Sincerely,

/S/

Marcia E. Williams
Director, Office of
Solid Waste

cc: Kurt Whitford, N.J. DEP
Sam Ezekwo
EPA Region II
Air and Hazardous Waste Division

9442.1988(01)

FEB 10 1988

Alex S. Gere, M.E., C.C.E.
Vice President
STONIMPEX, Inc.
24-16 Bridge Plaza South
Long Island, NY 11101

Dear Mr. Gere:

I recently received your letter and accompanying information about a patented process for sewage sludge treatment which STONIMPEX, Incorporated would like to market in the United States. I appreciate receiving the information. However, the Agency is not in a position to endorse or support specific processes.

While this may not be a problem, you should also be aware, that residuals generated as a result of your process must be evaluated against existing requirements. Specifically, you must determine if the residuals are characteristic hazardous waste prior to disposal (see 40 CFR 261.11, 260 and 261 enclosed). This determination can be made by testing the residuals or applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

Additional requirements for the use and disposal of sewage sludge are under development under the Clean Water Act. These may require you to test sewage sludge residuals prior to use and disposal. Please contact Mr. Alan Rubin (202) 475-7311 of the Office of Water concerning current and future requirements.

Thank you for your interest in solid waste management. If I can be of further assistance to you, please contact me.

Sincerely,

Marcia E. Williams
Director
Office of Solid Waste

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MAR 30 1988

MEMORANDUM

SUBJECT: Health-Based Level for Cyanide

FROM: Priscilla Halloran
Health Assessment Section

THROUGH: Alec McBride, Chief
Technical Assessment Branch

TO: Carolyn Bosserman, Regulatory Analyst
SAIC

In response to your letter dated March 14, 1988, I recommended the health-based level of 0.7 mg/L for "free" cyanide since this is based upon the Agency verified reference dose (vRfD). (Please note, all vRfDs and unverified RfDs are health-based numbers.) It is the Office of Solid Waste's policy to use MCLs if one exists. If an MCL does not exist, then the full value of the corresponding drinking water concentration limit based on the vRfD is used.

In addition to the vRfD for "free" cyanide, there are numerous other forms of cyanide for which there are vRfDs. These are as follows:

Form (CAS number)	Corresponding Drinking Water Concentration Limits based on the vRfD	Date RfD Verified
Barium Cyanide (542-62-1)	2.0 mg/L	8/05/85
Calcium Cyanide (592-01-8)	1.0 mg/L	8/05/85
Chlorine Cyanide (506-77-4	2.0 mg/L	8/05/85
Copper Cyanide (544-92-3)	0.2 mg/L	7/16/87
Hydrogen Cyanide (74-90-8)	0.7 mg/L	8/05/85
Potassium Cyanide (151-50-8)	2.0 mg/L	8/05/85
Potassium Silver Cyanide (506-61-6)	7.0 mg/L	8/05/85
Silver Cyanide (506-64-9)	4.0 mg/L	8/05/85
Sodium Cyanide (143-33-9)	1.0 mg/L	8/05/85
Zinc Cyanide (557-21-1)	2.0 mg/L	8/05/85

Most of the verified cyanide numbers, except for barium cyanide and copper cyanide are based on the Howard and Hanzal study which measured the effects of HCN-fumigated-feed on rats for two years. The differences in the numbers reflect adjustments for the molecular weights of the metals or salts. The barium cyanide number is based on a barium study. The copper cyanide number is based upon the copper cyanide study sponsored by OSW. The RfD workgroup did not reject the copper cyanide study, but merely deemed it applicable only for copper cyanide. A separate study of potassium silver cyanide, also sponsored by OSW, was presented at the same workgroup meeting but was rejected for technical reasons. Again had this study been accepted it would have been appropriate only for development of a potassium silver cyanide number. In studies such as these, the metal concentrations are such that they are believed to be the driving force in the toxic effects observed. Thus, such studies are only applicable for development of reference doses for those specific chemicals. All of the health-based cyanide limits are chronic, lifetime reference doses.

With regard to the health advisory used in setting the Office of Drinking Water's advisory level of 0.154 mg/L, this too was based upon the Howard and Hanzal study. Please note that the Office of Drinking Water's procedure is to take 20 percent of a drinking water equivalence level, which is developed using the same procedure used to develop a drinking water concentration limit, in lieu of a site-specific exposure assessment. The Variance Section uses the VHS model to estimate exposure. Further note that health advisory numbers are not enforceable standards, they are advisory limits for specific exposure durations, in this case, lifetime. Other limits (including one- and ten-day health advisories) address acute and less-than-lifetime expsore durations.

Perhaps when referring to a cyanide number, the particular compound should be stated, otherwise it will be assumed to be for "free" cyanide, etc. Again, the "free" cyanide vRfD of 0.7 mg/L is peer reviewed by the RfD workgroup and verified by them.

I hope I have explained the apparent anomalies in the cyanide limits. For your information, I have attached the IRIS cover sheets for all the verified cyanide numbers. These are difficult concepts. If I can be of further assistance please call me at 475-6726.

Attachment

cc: Reva Rubenstein
Bob Kaiser
Terry Grogan
Jenny Utz
Mark Colangelo

MAY 2 1988

MEMORANDUM

SUBJECT: California Authorization - Evaluation of the Waste Evaluation Test

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste

TO: Jeff Zelikson, Director
Toxics and Waste Management Division, Region IX

This memorandum is in response to your March 29, 1988 memorandum requesting a determination as to the technical adequacy of California's Waste Extraction Test (WET) for testing wastes to determine whether they meet the toxicity characteristic. Based on the description of the test and the results you have provided, we believe that, for any waste matrix, the WET will extract at least as much of each inorganic constituent as the EPA Extraction Procedure (EP) test. Also, since this action is an authorization issue, the WET does not need to go through the Part 260.21 petition process for equivalency.

As you are aware, our Office of General Counsel (OGC) has some concerns regarding the issue of possible Federal enforcement of regulations based on the WET. Currently, OGC is of the opinion that regulations utilizing the WET are broader in scope (cover more waste) rather than more stringent (tighter control of covered wastes) than regulations utilizing the EP. These concerns affect the overall authorization, and they still need to be resolved.

Please contact David Friedman (FTS 382-4761) of my staff if you have any questions on the technical evaluation of the WET or Josh Sarnoff (FTS 382-7706) of OGC if you have any questions on the legal review.

If the washwater sent to the oil/water separator is ignitable, it would be classified as a D001 hazardous waste, and would remain such for as long as it exhibits the ignitability characteristic. According to 40 CFR Section 261.3(c) and (d), any residues resulting from treatment of D001 are hazardous wastes only if they continue to exhibit a characteristic found under 40 CFR, Part 261, Subpart C.

If you have further questions in this area, please contact Michael Petruska of my staff at (202) 382-7729.

Sincerely,

/S/

Marcia E. Williams
Director, Office of
Solid Waste

cc: Kurt Whitford, N.J. DEP
Sam Ezekwo
EPA Region II
Air and Hazardous Waste Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

29 MAR 1988

MEMORANDUM

SUBJECT: California Authorization - Determining the Technical Equivalency of the Waste Extraction Test to the EPA Extraction Procedure Toxicity Test

FROM: Jeff Zelikson, Director
Toxics & Waste Management Division, Region 9

TO: Sylvia Lowrance, Director
Office of Solid Waste WH-562

As you may be aware, California is in the process of amending its hazardous waste management statutes and regulations for the purpose of obtaining authorization to implement the RCRA program. California would like to retain its Waste Extraction Test (WET) for testing characteristic waste rather than adopting EPA's EP Toxicity Test.

At this time we are requesting an official written determination from your office as to the technical adequacy of the WET. We requested this information previously and understand that David Freidman of the Technical Methods Section did some research on this issue.

Based on previous discussions between Headquarters and Regional staff, we believe there is agreement between the Region and Headquarters that the WET is at least as stringent as the EP Toxicity Test required under RCRA and therefore, meets the authorization requirement that the State program be equivalent to or more stringent than RCRA.

California's regulation development schedule requires that we give them a final decision on this issue within the next few weeks. For this reason, if we have not received a response by April 30, we will inform California that the WET is as stringent as the EP Toxicity Test and, therefore, will be acceptable for the purposes of authorization.

RECEIVED
3/30/88

If you have any questions or need more information, please call Kathy Papalia of my staff at FTS/454-8123. Thank you for your assistance on this issue.

Attachment

cc: Susan Absher, WH-563B
David Freidman, WH-562B
Cindy Byron, WH-527
Lillian Bagus, WH-563B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

25 NOV 1987

Memorandum

From: Jeff Zelikson, Acting Director
Toxics and Waste Management Division
Region IX

To: Sylvia Lowrance, Director
Characterization and Assessment Division, SE-240
Office of Solid Waste

Subject: California Authorization: Headquarters Assistance in Determining the Technical Equivalency of the Waste Extraction Test to the E.P. Toxicity Test

As you're probably aware, California is in the process of amending its hazardous waste management regulations for purposes of authorization. California would like to retain its Waste Extraction Test (WET) in lieu of adopting EPA's E.P. Toxicity Test.

We need your assistance in determining the technical adequacy of the WET, and have enclosed two copies of the materials sent to us by the state.

Given the regulation development schedule California is attempting to meet, we'd appreciate a written analysis of the WET's technical adequacy within three weeks of receipt of this request. Please contact me if you feel that the review time frame cannot be met.

If you have any questions, please call. If you need further information, your staff may contact Karen Ueno at FTS 454-8128. Thank you for your assistance.

enclosures

cc: with enclosures
David Friedman, Technical Methods Section (SE-240)
Bruce Weddle, Permits and State Programs Division (WH-563B)
Susan Absher, Permits and State Programs Division (WH-563B)

TO: EPA REGION IX
FROM: FLORENTINO CASTELLON

TSCD #1
PAGE 1 OF 1

RCRA AUTHORIZATION ISSUE

DATE:

REFER TO:

CITATION: CFR 261 APPENDIX II
TITLE 22, 66700 ibid
H&SC

CONTACT: MIKE HORNER
(916) 322-1003

SUBJECT: USE OF CALIFORNIA WET TEST VS. E.P. TOXICITY TEST

ISSUE:

The California Department of Health Services (DHS) is currently making those changes in State hazardous waste control law necessary to obtain authorization for California to run a RCRA equivalent hazardous waste program. This effort involves melding our current regulations with those of 40 CFR in such a way as to maintain those provisions wherein State law is more stringent than Federal law. As you are probably aware, Title 22 of the California Administrative code (CAC) specifies use of the Waste Extraction Test (WET) found in Section 66700 ibid to identify those wastes which are hazardous due to extractable hazardous constituents. Title 22 lists 20 metals and 18 organic compounds which render a waste hazardous when found in the extract from the WET in concentrations greater than the Soluble Threshold Limit Concentration (STLC).

PROPOSAL:

We propose specifying use of the WET in place of the Extraction Procedure (EP) Toxicity test presented in Appendix II to Part 261, 40 CFR to identify wastes hazardous due to the characteristic of EP Toxicity. We feel that the WET consistently extracts higher levels of inorganic metals than the EP test, thus satisfying the requirement that California law be equally or more stringent than Federal law. In addition, we feel that our laboratory certification program provides a level of quality control that is equivalent to or more stringent than that provided by the 40 CFR regulations.

IMPACT:

California will be approved to apply the WET Extraction test in place of the E.P. Toxicity test for waste classification, as part of RCRA Authorization. This will expand the number of wastes classified as a hazardous waste.

REQUEST:

These should be presented to EPA Region IX and EPA Headquarters technical personnel for review and concurrance. A written response regarding EPA's official evaluation of this proposal is requested.

Attachments

cc: Mike Horner
Don Johnson
Bart Simmons

State of California

Department of Health Services

Memorandum

To Mike Horner
Toxic Substances Control Division
Alternative Technology Section

Date October 5. 1987

Subject WET/EP Comparison

From Barton P. Simmons
Hazardous Materials Laboratory

Please find attached the WET/EP document which we have discussed. If you have any questions, please give me a call.

cc: Bob Stephens
Raimund Roehl
Tom Li
Stan Lau. TSCD-TSU

Attachment

HAZARDOUS MATERIALS LABORATORY
CALIFORNIA DEPARTMENT OF HEALTH SERVICES

AN EVALUATION OF THE WASTE EXTRACTION TEST (WET) FOR HAZARDOUS WASTE IDENTIFICATION

I. The Problem

As part of the RCRA authorization process, the California Department of Health Services is evaluating its criteria for hazardous waste characterization vis-a-vis the EPA system. One issue which has arisen is whether the California Waste Extraction Test (WET) is at least as stringent as the EPA Extraction Procedure (EP) for the purpose of determining the extractable inorganic constituents.

A related issue is the comparison of the California system and the Federal system for organic compounds. That issue will be addressed in a future document separately from the issue of inorganic substances.

II. Comparison of the two Extraction Tests

The WET procedure is desribed completely in Section 66700 of the California Administrative Code, Title 22. A copy of that section is included in Attachment A. The EP is described in 40CFR Part 261, Appendix II, and a copy is included as Attachment B. Briefly, both of these procedures are batch extraction tests. The principal difference between the two tests is the choice of extraction solution. The EP uses an acetic acid extraction solution, while the WET uses a 0.2 M citrate buffer solution. Citrate is recognized as a much stronger chelating agent than acetate. The stability constants for acetate and citrate complexes of selected metal ions are listed in Table 1.

Table 1 - Stability of Metal Complexes (Kragten, 1978)

Metal Ion	Citrate Complex	Acetate Complex
Chromium (III)	7.69	1.80
Mercury (II)	10.90	5.30
Lead (II)	6.30	2.20

As shown in Table 1, the citrate is predicted to be a stronger chelating agent than acetate.

III. Comparative Performance of the WET and EP

The prediction of greater stringency of the WET has been

demonstrated over several years of testing a diverse collection of solid wastes. Some examples of documented studies are given below.

A. The Oak Ridge National Laboratory (ORNL) Leaching Study

The California Waste Management Board sponsored a study of leaching tests, which was conducted at ORNL under the management of C. W. Francis. The study included the WET, the EP, and two leaching tests which were being considered to replace the EP. These tests were used in the development of the TCLP. One conclusion of the ORNL Report was "Generally speaking, concentrations of all the trace metals were higher in the WET extracts than in other leach extracts...(Francis, 1984)" This was the result whether extracts were analyzed by atomic absorption (AA) or inductively coupled plasma (ICP) spectroscopy, indicating that the differences were due to the extraction method. A copy of data from the ORNL study is included as Attachment C.

B. Battelle Leaching Study

As part of the evaluation of leaching tests for hazardous waste identification, the Battelle Columbus Laboratory conducted a comparison of leaching tests on several solid wastes, including aqueous sludges, organic chemical wastes, and inorganic solids. A conclusion of the study was: "Citrate buffer was often much more aggressive than acetate buffer for leaching metals (Warner, 1981)." This was in spite of the fact that the highest concentration of citrate buffer used was less than that required in the current WET.

C. Experience in Hazardous Waste Identification

The experience of the DHS over several years has been that the WET is consistently at least as stringent as the EP for hazardous waste identification. As an example, lead smelting slag from the Asarco hazardous waste site in Selby, California was tested by both the EP and the WET. Although the site has a documented source of arsenic contamination in the groundwater, the EP identified it as nonhazardous by the EP criterion, whereas it easily exceeded hazardous waste criteria by the WET. This situation is typical of EP and WET comparisons (DHS HML files).

IV. Quality of Data Generated by the WET

The WET and the EP have both several years of use in the commercial and industrial laboratory community. The formalization of procedures in regulation has eliminated inconsistency problems which formerly existed. Unlike the EP, the WET is included in a mandated Hazardous Waste Laboratory Certification Program which is conducted by DHS. This program includes requirements for personnel, equipment, analytical methods, quality assurance plans,

and performance testing. Interlaboratory testing which has been conducted to date indicates that the precision of the WET is as good as, or better than the precision of the corresponding analytical procedures and is in general far better than the precision of sampling procedures (DHS HML files).

V. Summary

The experience of DHS, federal laboratories and commercial laboratories is that the WET is at least as stringent as the EP for the purpose of identifying hazarous wastes by extractable metals. The DHS certification program will help to assure that the quality of data generated by the WET is adequate for the California Hazardous Waste Management Program.

References

Francis, C. W., Leaching Characteristics of Resource Recovery Ash in Municipal Waste Landfills. Oak Ridge National Laboratory, DOE Project No. ERD-83-289, 1984.

Kragten, J., Atlas of Metal-Ligand Equilibria in Aqueous Solution. John Wiley & Sons, New York, 1978.

Warner, J.S., et. al., "Development of a Method for Determining the Leachability of Organic Compounds from Solid Wastes," Hazardous Solid Waste Testing: First Conference. ASTM STP 760. R.A. Conway and B.C. Malloy, Eds., American Society for Testing and Materials, 1981, pp. 40-60.

$$\text{Calculated oral or dermal } LD_{50} = \frac{100}{\sum_{x=1}^{n} \frac{\%Ax}{T_{Ax}}}$$

where %Ax is the weight percent of each component in the waste mixture and T_{Ax} is the acute oral or dermal LD_{50} or the acute oral LD_{LO} of each component.

NOTE: Authority cited: Sections 208, 25141 and 25150, Health and Safety Code. Reference: Section 25141, Health and Safety Code.

HISTORY:

1. Editorial correction filed 10-5-84; designated effective 10-27-84 (Register 84, No. 41).

66699. Persistent and Bioaccumulative Toxic Substance.

(a) Any waste is a hazardous waste which contains a substance listed in subsections (b) or (c) of this section:

(1) at a concentration in milligrams per liter as determined pursuant to Section 66700 which exceeds its listed soluble threshold limit concentration, or

(2) at a concentration in milligrams per kilogram in the waste which exceeds its listed total threshold limit concentration.

(b) List of Inorganic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values.

	STLC	*TTLC*
Substance	*mg/l*	*Wet-Weight mg/kg*
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos	-	1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000††
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium (III) compounds	560	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

* STLC and TTLC values are calculated on the concentrations of the elements, not the compounds.

† In the case of asbestos and elemental metals, applies only if they are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

†† Excluding barium sulfate.

(c) List of Organic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values.

Substance	STLC mg/l	TTLC Wet Weight mg/kg
Aldrin	0.14	1.4
Chlordan	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	–	13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10

NOTE: Authority cited: Sections 208, 25141 and 25150, Health and Safety Code. Reference: Section 25141, Health and Safety Code.

HISTORY:

1. Editorial correction filed 10-5-84; designated effective 10-27-84 (Register 84, No. 41).

66700. Waste Extraction Test (WET).

(a) The WET described in this section shall be used to determine the amount of extractable substance in a waste or other material as set forth in Section 66699(a).

(b) Except as provided in Section 66700(d), the WET shall be carried out if the total concentration in the waste, or other material, of any substance listed in Section 66699 equals or exceeds the STLC value, but does not exceed the TTLC value, given for that substance. The total concentrations of substances listed in Section 66699 shall be determined by analysis of samples of wastes, or other materials, which have been prepared, or meet the conditions, for analysis as set forth in subsections (c) and (d) of this section. Methods used for analysis for total concentrations of substances listed in Section 66699 shall be those given in the following documents or alternate methods that have been approved by the Department pursuant to Section 66310(e):

(1) For metal elements and their compounds, the waste shall be digested according to the indicated methods described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982:

(A) All listed metal elements and their compounds, except hexavalent chromium: Method 3050.
(B) Hexavalent chromium: Method 3060.
(2) For the following substances, the indicated methods as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982 shall be utilized:
(A) Antimony: Method 7040 or Method 7041.
(B) Arsenic: Method 7060 or Method 7061.
(C) Barium: Method 7080 or Method 7081.
(D) Cadmium: Method 7131.
(E) Total chromium: Method 7190.
(F) Hexavalent chromium: Method 7195, Method 7196 or Method 7197.
(G) Lead: Method 7421.
(H) Mercury: Method 7470 or Method 7471.
(I) Nickel: Method 7520 or Method 7521.
(J) Selenium: Method 7740 or Method 7741.
(K) Silver: Method 7760 or Method 7761.
(L) Trichloroethylene: Method 8010 or Method 8240.
(M) Pentachlorophenol: Method 8040, Method 8250 or Method 8270.
(N) Aldrin, Lindane, Chlordane, DDD, DDE, DDT, Dieldrin, Heptachlor, Toxaphene and PCBS: Method 8080, Method 8250 or Method 8270.
(O) 2,4-Dichlorophenoxyacetic acid and 2,4,5-trichlorophenoxypropionic acid: Method 8150.
(3) For the following substances, the indicated methods as described in "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, U.S. Environmental Protection Agency, 1979 shall be utilized:
(A) Beryllium: Method 210.1 or Method 210.2.
(B) Cobalt: Method 219.1 or Method 219.2.
(C) Copper: Method 220.1 or Method 220.2.
(D) Molybdenum: Method 246.1 or Method 246.2.
(E) Thallium: Method 279.1 or Method 279.2.
(F) Vanadium: Method 286.1 or Method 286.2.
(G) Zinc: Method 289.1 or Method 289.2.
(H) Fluoride: Method 340.1, Method 340.2 or Method 340.3.
(4) For the following substances, the indicated methods as described in "Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples", EPA-600/8-80-038, U.S. Environmental Protection Agency, 1980 shall be utilized:
(A) Kepone: Section 5,A,(5),(a).
(B) 2,3,7,8-Tetrachlorodibenzo-p-dioxin: Section 9,G.
(5) For asbestos, the indicated method as described in the Federal Register, Volume 47, Number 103, Appendix A, pages 23376-23389, May 7, 1982 shall be utilized.
(c) Samples shall be prepared for analysis for total and extractable content of substances listed in Section 66699 (b) and (c) as follows:

(1) Type i: If the waste or other material is a millable solid, the sample shall be passed directly, or shall be milled to pass, through a No. 10 (two millimeter) standard sieve before it is analyzed. If the sample contains non-friable solid particles which do not pass directly through a No. 10 sieve and which are extraneous and irrelevant as hazardous constituents to the waste or other material, they shall be removed to the extent feasible by mechanical means and discarded. Solids which remain in the waste or other material after removal of the aforesaid extraneous particles shall be milled to pass through a No. 10 sieve and shall then be combined and mixed well with the solids which passed through the sieve without milling. The reconstituted sample shall then be analyzed as prescribed in this section.

(2) Type ii: If the waste or other material is a filterable mixture of liquid and solids in which the solids constitute five-tenths (0.5) percent by weight or greater of the sample, the liquid and solids shall be separated by filtration through a 0.45 micron membrane filter. The filtrate so obtained is to be designated as Initial Filtrate. Its volume is determined, and it is retained. The separated solids shall be sieved in a No. 10 sieve and any nonfriable extraneous particles of the kinds described in subsection (c) (1) which do not pass through the sieve shall be removed to the extent feasible by mechanical means and discarded. The solids which remain after removal of the extraneous particles shall be milled to pass through a No. 10 sieve and shall be recombined with solids which passed through the sieve without milling. This recombined solid material shall be extracted following the procedure in subsection (f). A ratio of 10 milliliters of extraction solution per gram of solid shall be utilized with appropriate modifications for extraction vessel size. After completion of solids extraction, the filtered extractant is combined with Initial Filtrate mixed thoroughly and anlyzed as described in subsection (f) (3).

(3) Type iii: If the waste or other material is a nonfilterable and nonmillable sludge, slurry, or oily, tarry or resinous material, it shall be analyzed as received unless it contains non-friable extraneous and irrelevant solid particles of the kinds described in paragraph (c) (1) of this section. If it contains such solid particles and they are of such size as not to pass through a No. 10 sieve, they shall be removed to the extent feasible by mechanical means and discarded. The remainder of the sample shall be analyzed as prescribed in this section.

(4) If it is necessary to dry a solid sample or the solids fraction of a sample before sieving, milling or removal of extraneous solids, or if a sample is dried prior to analysis, all weight losses due to drying shall be determined, and these losses and the conditions of drying shall be reported.

(d) If the waste or other material is a liquid containing less than five-tenths (0.5) percent by weight of undissolved solids, it shall not be subject to the WET procedure, but shall be analyzed directly for the substances listed in Section 66699. The waste shall be classified as a hazardous waste if the total concentration in the waste of any substances listed in Section 66699 exceeds the TTLC value given for that substance. If, however, the total concentration is less than the TTLC but exceeds the STLC when expressed on a milligrams per liter basis, the waste or other material shall be filtered through a 0.45 micron membrane filter, the solids discarded and the filtrate shall be analyzed directly for the substances listed in Section 66699. The waste shall be classifed as a hazardous waste if the concentration in the filtrate of any of the substances listed in Section 66699 exceeds the STLC value given for that substance.

(e) The WET extraction solution shall consist of 0.2 M sodium citrate at pH 5.0 ± 0.1, which is prepared by titrating an appropriate amount of analytical grade citric acid in deionized water with 4.0 N NaOH, except that the extraction solution for the determination of chromium (VI) shall consist of deionized water.

(f) The extraction procedure shall be as follows:

(1) Fifty grams of sample, or less if it is a type ii sample prepared pursuant to subsection (c) (2), obtained pursuant to subsection (c) or (d) of this section shall be placed in a clean polyethylene or glass container designated the Treatment, capable of physically withstanding the extraction procedure and which was rinsed previously with, in succession, an aqueous 1:1 ratio by volume nitric acid solution and deionized water. If the extract will be analyzed for any of the organic substances listed in Section 66699(c), a glass container shall be used. Furthermore, a container of the same size, shape and material shall be used for an extraction designated as the Blank, which shall be carried through the same procedure as the Treatment, but without addition of the sample.

(2) Five hundred milliliters of extraction solution, or less if the waste sample is a type ii sample prepared pursuant to subsection (c) (2) shall be added to the Treatment and Blank containers, which shall be then fitted with covered air scrubbers extended well into the extraction solutions and flushed vigorously with nitrogen gas for 15 minutes so as to remove and exclude atmospheric oxygen from the extraction medium. If the sample is to be analyzed for any volatile substance, such as trichloroethylene, the sample shall be added after deaeration with nitrogen to avoid volatilization loss. After deaeration the containers shall be quickly sealed with tightly fitting caps and agitated, using a table shaker, an overhead stirrer or a rotary extractor, operated at a speed which shall maintain the sample in a state of vigorously agitated suspension. Required equipment is described in test method 1310 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982. The temperature during the extraction shall be maintained between 20 and 40 degrees centigrade. After 48 hours of extracting, the contents of the Treatment and Blank containers shall be either filtered directly or centrifuged and then filtered. Filtering shall be through a medium porosity prefilter and then through a 0.45 micron membrane filter, using a clean, thick-walled suction flask. For coarser solids, prefiltration shall not be necessary. Pressure filtration shall be an optional alternative to vacuum filtration. If the extracts are first centrifuged, glass or polyethylene bottles shall be used as prescribed for extraction. For very fine solids, centrifuging at as high as 10,000 × G may be necessary. After centrifugation, the liquids shall be decanted, prefiltered if necessary, and then passed through a 0.45 micron membrane filter. All filters shall be of low and identified extractable heavy metals, fluoride and organic chemicals content.

(3) If the filtered extracts are to be analyzed only for the metal elements listed in Section 66699(b), the filtered extracts from the Treatment and Blank shall be transferred to clean polyethylene bottles and acidified with nitric acid to five percent by volume acid content soon after each extract is filtered. For those wastes or waste materials classified under subsection (c) (2), the Treatment shall be the Initial Filtrate combined with the extract generated by the WET extraction of the initially separated solids. Similarly the Blank in this instance shall be the filtrate generated by the WET Blank accompanying the initially separated solids, to which is subsequently added a volume of deionized

water equivalent to that of the Initial Filtrate. These procedures shall be followed prior to acidification of Treatment and Blank solutions with nitric acid to five percent (by volume) acid content. The bottle shall then be stored at room temperature or frozen. If the extracts are also to be analyzed for the organic substances listed in Section 66699(c), or for the organic substances only, the filtered extracts shall be transferred to clean glass bottles. If the extracts are to be analyzed for fluoride, they shall be transferred to clean polyethylene bottles. These extracts, containing organic substances or fluoride, shall not be acidified, but shall be frozen soon after each extract is obtained and held frozen until the day of analysis, unless the extracts are analyzed within 24 hours.

(g) Sample analysis and data treatment shall be as follows:

(1) Each of the filtered extracts from the Treatment and Blank extractions shall have been acidified to five percent by volume nitric acid, and stored at room temperature or frozen in polyethylene bottles or kept frozen without addition of acid in glass bottles until the day of analysis, as prescribed. Each of the extracts shall be thoroughly mixed just prior to being individually analyzed for the substances listed in Section 66699 in order to determine whether the extractable concentration (EC) in the waste or other material exceeds the STLC for any of the substances listed. The extracts shall be analyzed according to the procedures identified in Sections 66700(b)(2), (b)(3) and (b)(4).

(2) The net EC of a substance in the Treatment sample which is listed in Section 66699 shall be calculated and reported as milligrams per liter of sample (mg/l). This value is derived after subtracting the concentration of the substance in the appropriate Blank extract from that concentration determined in the Treatment extract.

NOTE: Authority cited: Sections 208, 25141 and 25150, Health and Safety Code. Reference: Section 25141, Health and Safety Code.

HISTORY:

1. Editorial correction filed 10-5-84; designated effective 10-27-84 (Register 84, No. 41).

66702. Ignitability Criteria.

(a) A waste, or a material, is ignitable and hazardous if it:

(1) Is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees centigrade (140 degrees Fahrenheit), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in American Society for Testing and Materials (ASTM) Standard D-93-79, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-73; or

(2) Is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; or

(3) Is a flammable compressed gas as defined in 49 CFR 173.300(b) (codified October 1, 1982) and as determined by the test methods described in that regulation; or

(4) Is an oxidizer as defined in 49 CFR 173.151 (codified October 1, 1982).

NOTE: Authority cited: Sections 208, 25141 and 25150, Health and Safety Code. Reference: Section 25141, Health and Safety Code.

Attachment B

This manual also contains additional information on application of these protocols.

Appendix II—EP Toxicity Test Procedures

A. Extraction Procedure (EP)

1. A representative sample of the waste to be tested (minimum size 100 grams) shall be obtained using the methods specified in Appendix I or any other method capable of yielding a representative sample within the meaning of Part 260. (For detailed guidance on conducting the various aspects of the EP see "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).)

2. The sample shall be separated into its component liquid and solid phases using the method described in "Separation Procedure" below. If the solid residue * obtained using this method totals less than 0.5% of the original weight of the waste, the residue can be discarded and the operator shall treat the liquid phase as the extract and proceed immediately to Step 8.

3. The solid material obtained from the Separation Procedure shall be evaluated for its particle size. If the solid material has a surface area per gram of material equal to, or greater than, 3.1 cm^2 or passes through a 9.5 mm (0.375 inch) standard sieve, the operator shall proceed to Step 4. If the surface area is smaller or the particle size larger than specified above, the solid material shall be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" described below.

4. The solid material obtained in Step 3 shall be weighed and placed in an extractor with 16 times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

5. After the solid material and deionized water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution shall be decreased to 5.0 ± 0.2 by adding 0.5 N acetic acid. If the pH is equal to or less than 5.0, no acetic acid should be added. The pH of the solution shall be monitored, as described below, during the course of the extraction and if the pH rises above 5.2, 0.5N acetic acid shall be added to bring the pH down to 5.0 ± 0.2 (however, in no event shall the aggregate amount of acid added to the solution exceed 4 ml of acid per gram of solid). The mixture shall be agitated for 24 hours and maintained at 20°-40°C (68°-104°F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123 or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed:

(a) A pH meter shall be calibrated in accordance with the manufacturer's specifications.

(b) The pH of the solution shall be checked and, if necessary, 0.5N acetic acid shall be manually added to the extractor until the pH reaches 5.0 ± 0.2. The pH of the solution shall be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5N pH units.

(c) The adjustment procedure shall be continued for at least 6 hours.

(d) If at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH shall be adjusted to 5.0 ± 0.2 and the extraction continued for an additional four hours, during which the pH shall be adjusted at one hour intervals.

6. At the end of the 24 hour extraction period, deionized water shall be added to the extractor in an amount determined by the following equation:

$V = (20 \times W) - 16(W) - A$

V = ml deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5N acetic acid added during extraction

7. The material in the extractor shall be separated into its component liquid and solid phases as described under "Separation Procedure."

8. The liquids resulting from Steps 2 and 7 shall be combined. This combined liquid (or the waste itself if it has less than 4 percent solids, as noted in step 2) is the extract and

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* The percent solids is determined by drying the filter pad at 80°C until it reaches constant weight and then calculating the percent solids using the following equation:

Percent solids = $\frac{(\text{weight of pad} + \text{solid}) - (\text{tare weight of pad})}{\text{initial weight of sample}} \times 100$

5. After the solid material and deionized water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution shall be decreased to 5.0 ± 0.2 by adding 0.5 N acetic acid. If the pH is equal to or less than 5.0, no acetic acid should be added. The pH of the solution shall be monitored, as described below, during the course of the extraction and if the pH rises above 5.2, 0.5N acetic acid shall be added to bring the pH down to 5.0 ± 0.2. However, in no event shall the aggregate amount of acid added to the solution exceed 4 ml of acid per gram of solid. The mixture shall be agitated for 24 hours and maintained at 20°-40°C (68°-104°F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123 or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed:

(a) A pH meter shall be calibrated in accordance with the manufacturer's specifications.

(b) The pH of the solution shall be checked and, if necessary, 0.5N acetic acid shall be manually added to the extractor until the pH reaches 5.0 ± 0.2. The pH of the solution shall be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5N pH units.

(c) The adjustment procedure shall be continued for at least 6 hours.

(d) If at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH shall be adjusted to 5.0 ± 0.2 and the extraction continued for an additional four hours, during which the pH shall be adjusted at one hour intervals.

6. At the end of the 24 hour extraction period, deionized water shall be added to the extractor in an amount determined by the following equation:

$$A = (20 \times W) - 16(W) - A$$

A = ml deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5N acetic acid added during extraction

7. The material in the extractor shall be separated into its component liquid and solid phases as described under "Separation Procedure."

8. The liquids resulting from Steps 2 and 7 shall be combined. This combined liquid (or the waste itself if it has less than ½ percent solids, as noted in step 2) is the extract and shall be analyzed for the presence of any of the contaminants specified in Table I of § 261.24 using the Analytical Procedures designated below.

Separation Procedure

Equipment: A filter holder, designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 5.3 kg/cm² (75 psi) hydrostatic pressure to the solution being filtered, shall be used. For mixtures containing nonabsorptive solids, where separation can be effected without imposing a 5.3 kg/cm² pressure differential, vacuum filters employing a 0.45 micrometers filter media can be used. (For further guidance on filtration equipment or procedures see "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" incorporated by reference, see § 260.11). Procedure:[3]

(i) Following manufacturer's directions, the filter unit shall be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass fiber prefilter, and coarse glass fiber prefilter) can be used.

(ii) The waste shall be poured into the filtration unit.

(iii) The reservoir shall be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter shall be immediately lowered to 10-15 psig. Filtration shall be continued until liquid flow ceases.

(iv) The pressure shall be increased stepwise in 10 psi increments to 75 psig and filtration continued until flow ceases or the pressurizing gas begins to exit from the filtrate outlet.

(v) The filter unit shall be depressurized, the solid material removed and weighed and then transferred to the extraction apparatus, or, in the case of final filtration prior to analysis, discarded. Do not allow the material retained on the filter pad to dry prior to weighing.

(vi) The liquid phase shall be stored at 4°C for subsequent use in Step 8.

B. Structural Integrity Procedure

Equipment: A Structural Integrity Tester having a 3.18 cm (1.25 in.) diameter hammer weighing 0.33 kg (0.73 lbs.) and having a free fall of 15.24 cm (6 in.) shall be used. This device is available from Associated Design and Manufacturing Company, Alexandria, VA 22314, as Part No. 125, or it may be fabricated to meet the specifications shown in Figure 1.

Procedure

1. The sample holder shall be filled with the material to be tested. If the sample of waste is a large monolithic block, a portion shall be cut from the block having the dimensions of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder. For a fixated waste, samples may be cast in the form of a 3.3 cm (1.3 in.) diameter x 7.1 cm (2.8 in.) cylinder for purposes of conducting this test. In such cases, the waste may be allowed to cure for 30 days prior to further testing.

2. The sample holder shall be placed into the Structural Integrity Tester, then the hammer shall be raised to its maximum height and dropped. This shall be repeated fifteen times.

3. The material shall be removed from the sample holder, weighed, and transferred to the extraction apparatus for extraction.

Analytical Procedures for Analyzing Extract Contaminants

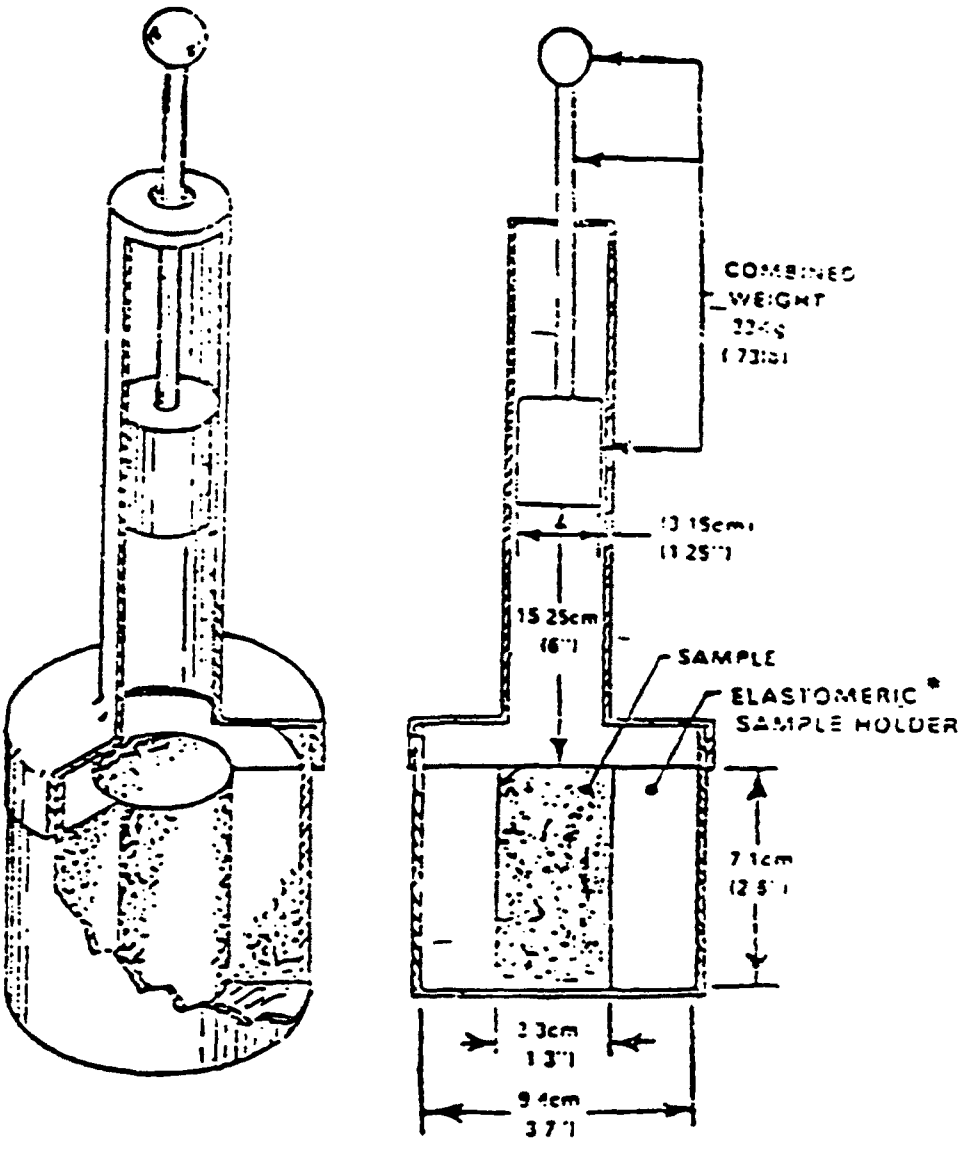
The test methods for analyzing the extract are as follows:

1. For arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, endrin, lindane, methoxychlor, toxaphene, 2,4-D(2,4-dichlorophenoxyacetic acid) or 2,4,5-TP (2,4,5-trichlorophenoxypropionic acid): "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

2. [Reserved]

For all analyses, the methods of standard addition shall be used for quantification of species concentration.

[3] This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size >0.45 μm. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation, the liquid portion (centrifugate) is filtered through the 0.45 μm filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.



*ELASTOMERIC SAMPLE HOLDER FABRICATED OF MATERIAL FIRM ENOUGH TO SUPPORT THE SAMPLE

Figure 1
COMPACTION TESTER

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

Attachment C (Source..Francis, 1984)

Table 40. Percentage of elements extracted by waste extraction test (WET) from each of the resource recovery ashes[a]

Element	Resource recovery ash			
	Chicago	Sumner	Hampton	Auburn
Al	6.9	17.1	10.5	13.5
Be	1.3	2.0	3.4	5.8
Ca	29.3	42.9	48.1	39.7
Cd	52.8	nc	59.5	nc[b]
Cr	nc	nc	nc	1.5
Cu	1.3	nc	nc	99.2
Fe	4.8	9.4	3.4	9.3
Mg	35.6	30.0	29.0	26.6
Mn	26.4	41.0	19.4	51.6
Mo	nc	nc	nc	24.8
P	8.8	15.6	19.1	86.8
Pb	18.1	20.4	29.1	41.0
Sb	13.3	27.2	21.0	25.3
Si	0.9	0.77	0.93	3.8
Sr	17.5	29.6	34.9	13.8
Ti	0.66	0.68	1.02	0.38
V	nc	nc	15.0	nc
Zn	48.9	29.8	31.8	31.6

[a]Those elements in which the percent extracted could not be calculated for all four resource recovery ashes are not included.
[b]nc = could not be calculated.

Table 41. Concentrations of arsenic measured in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(10^{-3} mg/L)			
WET	1	61	185	950	17
EP	<1	3	9	17	2
Carbonic acid	<1	3	2	<1	1
Acetate	<1	5	1	2	3

Table 42. Concentrations of cadmium in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(10^{-3} mg/L)			
WET	0.5	1600	810	1520	180
EP	<0.5	710	240	500	20
Carbonic acid	<0.5	16	12	70	5
Acetate	<0.5	190	50	330	30

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 3 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Ms. Robyn-Marie Lyon
McDermott, Will and Emery
2049 Century Park East
Suite 600
Los Angeles, CA 90067-3108

Dear Ms. Lyon:

I am responding to your letter dated September 7,1988, to Bob Dellinger which requests confirmation of a hazardous waste interpretation of a waste stream generated by one of your clients. Specifically, your client uses a bronze plating process which plates a copper-tin alloy on carbon steel wire. No electrodes or electrolysis are employed in the process.

You have spoken with Mr. David Topping of my staff regarding this process. As Mr. Topping has informed you, this process is characterized as "immersion plating", rather than electroplating and, therefore, treatment of this process' wastewater will not generate F006 unless electroplating rinse waters are mixed with the immersion plating wastewaters prior to treatment.

You should advise your client that any wastes generated by the immersion plating process should be evaluated prior to disposal to determine whether they exhibit any of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity - see 40 CFR 261.21-24).

Also, you should be aware that the States may have a regulatory program more stringent than the Federal program (i.e., the State hazardous waste program may consider these wastes as hazardous under State law). Therefore, you will have to contact the various States where your clients are located to determine how these wastes should be handled under State law.

If you have any further questions, please contact Mr. Edwin F. Abrams at (202) 382-4787.

Sincerely,

Devereaux Barnes
Director,
Characterization and Assessment
Division

9442.1989(01)

Mr. Richard Torrito
Assistant General Counsel
Continental Can Company, Inc.
P.O. Box 5410
Norwalk, Connecticut 06856

Dear Mr. Torrito:

It was a pleasure meeting, with you on December 22, 1988 to discuss the regulatory status of wastewater treatment sludges from the zirconium phosphating of aluminum cans which are generated and managed by Continental Can.

As we discussed at that meeting wastewater treatment sludges generated by Continental Can are within the scope of the listing for wastewater treatment sludges from the chemical conversion coating of aluminum. Based on the process chemistry and information received by the Agency, we do not believe that these wastes contain or form Appendix VIII constituents in hazardous concentrations. Therefore, it is the Agency's belief that wastewater treatment sludges from this process should not be classified as hazardous waste and that Continental Can and other can makers employing the same process and chemical constituents should be granted regulatory relief from managing their sludges as hazardous wastes as quickly as possible.

The Agency believes that the best way to accomplish this is to modify the F019 listing to exclude the zirconium phosphating of aluminum cans process through an expedited rulemaking. One issue you raised during the meeting was whether the modification to the listing would retroactively apply to previously generated wastes. According to our Office of General Counsel, the listing modification would be retroactive (i.e., once the F019 listing modification is final, previously generated wastes would not be classified as F019).

This has been retyped from the original document.

I want to assure you that making the modification discussed with you is a high priority within the Office of Solid Waste. It is already underway and will be carried out as quickly as possible. We will keep you informed.

Sincerely,

Sylvia K. Lowrance
Director
Office of Solid Waste

This has been retyped from the original document.

JAN 25 1989

MEMORANDUM

SUBJECT: Fluff Analyses

FROM: Alec McBride, Chief
Technical Assessment Branch, OSW

TO: Cynthia Stroup, Chief
Design and Development Branch, OTS

The purpose of this memorandum is to clarify some of the details of the analytical procedures that we understand will be used in the fluff sampling and analysis project. We appreciate the efforts that your office has put into dealing with the difficulties encountered in collecting and analyzing the fluff samples.

As you know, OSW has asked for analyses of lead and cadmium in both the total fluff samples and the Extraction Procedure (EP) extracts from those samples. Both sets of analyses should be conducted on the samples after they have undergone appropriate size reduction steps to meet the EP requirements. One thing I have not brought up in our discussions but would like to mention now is that the EP does not require size reduction of materials whose ratio of surface area to weight is greater than 3.1 cm^2/g. Materials such as pieces of fabric or wire could likely be put directly into the extraction bottle without being reduced in size to pass through the 9.5 mm sieve.

Please call me on 382-4761 if you have any questions on the EP requirements (although MRI should be familiar with them). Also, we would like to take care of our share of the costs of the project as soon as you have your final estimates. Thanks again for all your help.

APR 20 1989

Mr. Richard S. Leonard
Quality Control Coordinator
NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401

Dear Mr. Leonard:

I am writing in response to your letter of February 9, 1989 requesting guidance on what analytes to look for when performing RCRA analyses.

One selects the list of target analytes based on the regulatory purpose for which the analysis is being performed. For example, if one is a land disposal facility which is required to monitor its ground water, then one analyzes the ground water for those analytes listed in Appendix IX of 40 CFR Part 264. On the other hand, if the reason for testing is to determine if the waste is a hazardous waste by reason of Extraction Procedure Toxicity, then one only needs to analyze the Method 1310 extract for the 8 metals and 6 organic compounds listed in 40 CFR Part 261.24. Generally, the analyses a facility must perform are described in its permit and, especially the Waste Analysis Plan.

I can understand how the various lists and analytes described in Test Methods for Evaluating Solid Waste (SW-846) can be confusing. SW-846 is a compilation of methods designed to cover all testing one might need to do to comply with RCRA data gathering needs. It contains testing methods for complying with all aspects of the RCRA regulations and a method may be indicated as being approved for determination of analytes which might not need to be determined in one's particular situation.

If you have any other questions on the RCRA regulations, I suggest that you contact the RCRA toll free hotline at 800-424-9346.

Sincerely yours,

David Friedman, Chief
Method Section (OS-331)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 26 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Antarctica Waste Disposal Practices

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste

TO: Brenda Sue Thornton
Office of International Activities

The purpose of this memorandum is to provide comments from the Office of Solid Waste (OSW) on the Scientific Committee on Antarctic Research (SCAR) Panel of Experts recommendations concerning waste disposal practices in Antarctica. OSW agrees that the present Code of Conduct provisions concerning waste disposal are inadequate in some respects and need updating. In particular, the Code:

- categorizes wastes by disposal method, rather than by waste characteristics and the degree of hazard they pose to the environment;
- allows land and ocean dumping of untreated sewage, solid and even hazardous waste;
- allows open burning and incineration without air emission controls.

OSW also generally agrees with the SCAR Panel of Experts recommendations, with some comments and suggestions for changes, as follow:

- In general, the language of the recommendations and the present Code is too qualified and conditional (e.g., vague qualifiers like "discourage the use of," "where appropriate," and "take into account"). Additionally, waste disposal standards should be incorporated under the Treaty as a new Agreed Measure to make them more binding.
- Recommendation #3: To some extent, wastes continue to be categorized by disposal method, rather than by characteristics and degree of hazard they pose to the environment. We believe that wastes should be categorized in the following manner:

Waste water containing sewage, domestic waste, and other organic waste with BOD and mineral nutrients, that will be discharged to the land, ice, surface water, or ocean, is one class of waste. (This presently falls under class 1.) Hazardous waste should not be mixed with waste water.

Wastes that exhibit hazardous characteristics, regardless of whether they are liquids or solids, or combustible or noncombustible, are another class of waste (hazardous waste). (This roughly corresponds to class 2.) Within this class, hazardous waste may then be subdivided into combustibles, noncombustibles, liquids, and solids (2a, 2b, 2c, 2d). They must be managed, handled, stored, transported, and disposed of to prevent their release into the environment. Hazardous waste should not be mixed with waste water or nonhazardous solid waste.

Solid wastes that do not exhibit hazardous characteristics may then be divided into the two categories of combustible and noncombustible (Groups 3 and 4).

Radioactive wastes (Group 5), already are a separate waste class, and should not be mixed with any other type of waste prior to removal from Antarctica.

- Recommendation #4: While waste management and disposal by each country should be designed to meet that country's national standards, universal minimum standards for Antarctic waste management are necessary in order to achieve uniform protection of the environment. It seems inequitable and futile to have some countries achieving high standards at considerable expense, while others, whose national environmental standards are low, escape these costs and contaminate the air, land, and water. Some mechanism also is necessary to make these universal minimum standards enforceable, such as incorporation under the Treaty as an Agreed Measure.

3. In light of Recommendation #4, U.S. waste disposal practices in Antarctica should conform to standards found in 40 CFR.

<u>Hazardous waste</u>: Processes should be designed to minimize the generation of hazardous waste. Likewise, the purchase and import of virgin materials that will become hazardous waste should be minimized. Hazardous waste that does not meet Best Demonstrated Available Technology (BDAT) treatment standards cannot be land disposed (as defined in the Land Disposal Restrictions Standards in 40 CFR 268). If treated to BDAT standards onsite (For most hazardous waste, properly conducted

high temperature incineration often will achieve BDAT.), the residual may then be disposed on or in the land. However, the land disposal unit must meet 40 CFR 264 design requirements, with "minimum technology" such as double liners and a leachate collection system. Note that studies should be conducted to assess the efficacy and feasibility of "minimum technology requirements" in the Antarctic. Alternately (and preferably), the treatment/incineration residuals should be removed from Antarctica. Also, if incineration does not achieve the BDAT standard, waste must be removed from Antarctica. Hazardous waste incinerators must meet design and operation requirements specified at 40 CFR 264. Finally, hazardous waste subject to the Land Disposal Restrictions should be stored and accumulated only in tanks or containers prior to treatment/incineration or removal, and only for up to one year. (40 CFR 268.50)

Solid waste: Waste minimization, of both solid and hazardous waste, should be emphasized in order to reduce the volume disposed of. Packaging materials that will become refuse should be minimized at the time of purchasing and supply. Ideally, purchase of plastics such as PVC, polyurethane, polystyrene should be minimized if these materials cannot be recycled. Materials should be recycled and recovered to the maximum extent possible (e.g., silver recovered from photographic waste). Combustibles should be incinerated separately from hazardous waste and only in double-burning high temperature incinerators with air emissions controls. (See 40 CFR 240-257 for solid waste management regulations.)

Waste water: OSW believes that the Office of Water should comment on waste water treatment and discharge requirements. Nonetheless, we raise the following points for consideration and discussion: At isolated bases, treatment of waste water prior to discharge may be difficult or impossible. However, use of composting toilets, both at bases and stations, is a possible solution to sewage disposal. At coastal stations, primary treatment (physical maceration) alone is inadequate; waste water needs biological treatment to reduce BOD (with Rotating Biologicial Contactors (RBC) or equivalent) prior to discharge. Untreated sewage should not be discharged to the ocean. Despite the relatively low population of Antarctica, significant local impacts on the marine ecology could occur from discharge of untreated waste water. Furthermore, because ice-free land is scarce and the ecosystem rare, discharge to land also could significantly impact this ecosystem. Additionally, hazardous waste should not be mixed with waste water.

Ocean dumping of solid or hazardous waste, or untreated waste water (sewage) is prohibited in the U.S. (except for dredge and fill materials) and should be eliminated.

Despite the logistic problems caused by the remote location of Antarctic stations and bases, waste disposal standards should not be compromised, either for U.S. activities or for other countries' activities. This is especially true in Antarctica, where pristine ecosystems must be protected for their scientific value. Protective waste disposal standards can be achieved in Antarctica, although costs may be greater than in other parts of the world.

Please contact Dave Reeves at 382-4679 to discuss these comments further.

JUL 5 1989

Mr. Jon Greenberg
Manager, Environmental Policy
Browning-Ferris Industries
1150 Connecticut Avenue, Northwest
Suite 500
Washington, D.C. 20036

Dear Mr. Greenberg:

This letter is intended as a follow-up to an Agency letter of October 27, 1988, which was in response to your written inquiry of August 11, 1988. In reviewing our letter, we discovered that some language was not included, due to a computer error. We would like to take this opportunity to correct this omission, thereby avoiding any confusion.

In our letter, we stated, "A residual generated from the treatment, storage, or disposal of a characteristic hazardous waste (or a waste that has been listed only because it exhibits a characteristic, such as F003) is a hazardous waste only if it exhibits a characteristic." This sentence should have stated, "A residual generated from the treatment, storage, or disposal of a characteristic hazardous waste (or a waste that has been listed only because it exhibits a characteristic, such as F003), when mixed with a solid waste, is a hazardous waste only if it exhibits a characteristic." However, we reiterate that treatment of a characteristic hazardous waste or a non-hazardous solid waste may generate a listed hazardous waste, such as the electroplating wastewaters mentioned in our previous letter. In that example, treatment of characteristic wastewaters generates a sludge which is listed as F006, even if the treatment occurs off-site from the generation of the wastewater.

We apologize for any inconvenience this error may have caused. If you have any further questions, please call the RCRA/Superfund Hotline at 382-3000.

Sincerely,

Sylvia K. Lowrance
Director

SEP 12 1989

John P. Nash
P.O. Box 3473
Whittier, California 90605

Dear Mr. Nash:

This letter is written to inform you that your letter of August 8, 1989, concerning the regulatory status under the Resource Conservation and Recovery Act (RCRA) of your system for recycling/treating aerosol cans has been referred to Mr. Jeffrey Zelikson, Director of the Toxics and Waste Management Division in EPA's Region IX Office (San Francisco, California).

EPA's current policy regarding the regulatory status of non-empty aerosol can puncturing, crushing or shredding is that the appropriate EPA Regional office is to make a determination on a case-specific basis. Although the December 30, 1980, letter from Mr. Gary Dietrich indicates that such activity is not RCRA-regulated treatment, subsequent evaluation by EPA has determined that such activity may, indeed, meet the definition of treatment found at 40 CFR 260.10 (i.e., such activity may, in fact, change the physical or chemical composition of a hazardous waste, or render such waste amenable for recovery). However, until EPA develops a final determination regarding such activities, the Regional offices, or authorized State regulatory agencies, will make such determinations on a case-specific basis.

Thank you for your interest in the recycling of solid wastes. If you have any questions regarding your letter, you should contact Mitch Kidwell, of my staff, at (202) 475-8551.

Sincerely,

Michael J. Petruska
Acting Chief
Waste Characterization Branch

OS-332-MITCH-PDISK-LM-9/11/89-WCB025A

OCT 19 1988

Mr. Dave Collins
Jones and Henry Labs
2567 Tracey Rd.
Northwood, OH 43619

Dear Mr. Collins:

I am writing in response to our telephone conversation concerning Method 1320, the Multiple Extraction Procedure. Method 1320 states that after the EP (Method 1310) is run on the initial waste sample of 100 grams, the solid phase remaining after filtration is reweighed and a synthetic acid rain solution is added to the solid phase in a 20:1 ratio. The sample is then extracted and filtered. After filtration, the remaining solid is again reweighed and the extraction fluid is again added in a ratio of 20:1, and so on through the remaining multiple extractions.

I had originally said that the synthetic acid rain extraction fluid should be added in a 20:1 ratio based on the sample's initial dry weight. However, this approach does not take into account what would really happen to the waste in a landfill environment. Method 1320 is trying to predict what would happen to the waste when it is placed in a landfill and subjected to rainfall over a long period of time. The waste may absorb water after contact with the acid rain or may lose weight due to the percolation of the acid rain through the waste. In either case, the waste has been modified by the acid rain. Therefore, in order to mimic this behavior in the laboratory, the wet material that remains after each extraction with the synthetic acid rain solution is the material that should be weighed and used to calculate the 20:1 liquid to solid ratio. The dry weight of the original waste sample of 100 grams should not be used.

If you have any questions with this, please give me a call at (202) 475-6722.

Sincerely yours,

Gail Ann Hansen
Environmental Health Scientist
Methods Section (OS-331)

Table 43. Concentrations of copper measured in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(mg/L)			
WET	0.022	1.90	0.041	0.047	211
EP	0.006	1.67	6.04	0.64	24.3
Carbonic acid	0.006	0.52	0.18	0.12	1.32
Acetate	0.003	1.06	0.15	0.21	24.2

Table 44. Concentrations of chromium in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(mg/L)			
WET	0.024	1.00	1.02	1.18	1.72
EP	<0.003	0.030	0.042	0.035	0.011
Carbonic acid	<0.003	0.004	0.007	0.006	0.005
Acetate	<0.003	0.012	0.006	0.005	0.016

Table 45. Concentrations of lead measured in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(mg/L)			
WET	0.07	29	35	46	29
EP	0.007	5.80	6.40	10.3	3.15
Carbonic acid	<0.003	0.025	0.004	0.095	0.012
Acetate	<0.003	0.50	0.28	1.62	4.20

Table 46. Concentrations of selenium in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(10^{-3} mg/L)			
WET	<2	6	<2	<2	<2
EP	<2	3	<2	2	<2
Carbonic acid	<2	3	4	4	<2
Acetate	<2	4	5	7	4

Table 47. Concentrations of zinc measured in four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
		(mg/L)			
WET	<0.3	206	107	403	92
EP	<0.3	56	27	91	27
Carbonic acid	<0.3	4.1	1.6	19	5.7
Acetate	<0.3	11	1.1	56	25

Table 48. pH of final extract from four waste leach tests

Waste leach test	Blank	Resource recovery ash			
		Chicago	Sumner	Hampton	Auburn
WET	4.98	7.09	7.52	6.51	5.60
EP	2.95	5.27	5.08	5.06	5.02
Carbonic acid	4.36	6.84	6.94	6.83	6.48
Acetate	4.95	6.82	7.39	6.46	5.54

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.

9442.1989(09)

NOV 3 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

Mr. Robert N. Steinwurtzel
Counsel to the Secondary Lead
Smelters Association, Inc.
Andrews and Kurth Attorneys
Suite 200
1701 Pennsylvania Avenue, N.W.
Washington, DC 20006

Dear Mr. Steinwurtzel:

This letter is in response to your letter of September 22, 1989, discussing the issue of waste testing procedures for blast slag generated by lead recycling facilities. I appreciate your bringing this matter to our attention. While this type of issue, particularly in the enforcement context, is one in which the Regional offices generally have the lead, I can give you some idea of our thinking at Headquarters in response to your concerns.

With respect to the technical aspects of the proper application of the Extraction Procedure (EP) Toxicity test, we at EPA Headquarters are in agreement with the discussion presented by Mr. James Scarbrough of our Region IV office in his September 27, 1989, letter to you (copy enclosed). Specifically, we believe the sampling procedure used by the Secondary Lead Smelters Association (SLSA) is inadequate because: 1) the sample is not taken from the actual waste material at the point of generation and 2) the physical characteristics and chemical composition of the sample are likely to be different from those of the waste material. Given the actual nature of the waste as described in Mr. Scarbrough's letter, we also agree with his conclusion that the structural integrity procedure and the stirring procedure for agitation are not appropriate for this type of waste. Furthermore, we understand that the Region, in consultation with EPA's National Enforcement Investigation Center, has always taken these positions with respect to sampling and analysis of smelter slag waste.

We recognize that your clients may be in the position of having to defend against an enforcement action at this point. However, I believe that if you look at Mr. Scarbrough's letter of September 21, 1989, he indicates a willingness to attempt a proper disposition of this matter without extensive and expensive litigation. I encourage you to explore this suggestion directly with the Regional Office.

Thank you for communicating your concerns to me. If I can provide any further clarification on the role of Headquarters on this type of issue, please feel free to contact me.

Sincerely,

Jeffery Denit
Deputy Director
Office of Solid Waste

Enclosure

9442.1990(01)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 3 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Dr. Bodo Diehn
Science and Technology Professionals
Environmental Services
Post Office Box 3128
Scottsdale, Arizona 85271

Dear Dr. Diehn:

This is in response to your letter dated March 27, 1990, requesting an interpretation regarding the regulatory status of paint spray booth air filters containing toluene and xylene.

It is my understanding that your client's painting process generates an air filter which becomes contaminated by overspray that is inherent in the paint spraying process. This filter is replaced when it becomes "spent." Your letter also indicates that your client's paint contains the solvents toluene and xylene as ingredients in the paint formulation. Your letter does not indicate that these solvents (or any other solvents listed in 40 CFR 261.31) are utilized for cleaning purposes, nor that your client's air filters capture overspray generated during paint spray booth cleaning operations.

Based on the information provided, it appears that your client is not generating spent air filters that contain a hazardous waste listed in 40 CFR 261.31. Process wastes containing solvents where the solvent is used as an ingredient in the formulation of a commercial chemical product, do not fall within the scope of the spent solvent listings. Additionally, the products themselves do not meet the listings. This point is stated in the preamble to several solvent rules (see 50 FR 53316, 51 FR 40606) as well as in the listing background document. However, should a spent solvent (i.e., a solvent that can no longer be used for its intended purpose without first being reclaimed) be mixed with the filter, the resultant mixture is a hazardous waste pursuant to 40 CFR 261.3(a)(2)(iv).

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Your letter does not provide enough information to determine if your client's air filter would exhibit any of the four characteristics of hazardous waste. Each generator is responsible for evaluating his individual waste stream to determine if it meets a listing of hazardous waste in Subpart D of 40 CFR Part 261, or if it exhibits any characteristic of hazardous waste identified in Subpart C of 40 CFR Part 261. Furthermore, State and local regulatory agencies may have regulations that are more stringent than those at the Federal level. Your client should contact the appropriate State agency to determine what, if any, additional regulations may be applicable.

Sincerely,

Sylvia K. Lowrance,
Director
Office of Solid Waste

NOV 8 1990

Mr. Michael Paessun
Wadsworth/Alert Laboratories, Inc.
4101 Shuffel Dr. N.W.
North Canton, OH 44720

Re: Bias Correction on TCLP

Dear Mr. Paessun:

We are pleased to respond to your concerns regarding the application of bias correction for the TCLP. This response will supplement our initial responses to questions from your company (communication with Mr. Marvin Stephens) and hopefully will cover all of your concerns.

The issue of bias correction was covered in the TC final rule of March 29, 1990 (55 FR 11875). A restatement of the requirement to correct for bias and a description of the method for bias correction was issued in the June 29, 1990 correction notice (55 FR 26993), to clarify the intent as well as procedure.

We would also like to respond to your specific questions:

1. The TCLP method does indeed apply to both the Toxicity Characteristic program and the Land Disposal Restrictions program. Any time the TCLP is required, any and all requirements within the procedure must be met. It should be noted that the limits set in the Land Disposal Restrictions program were established based on data which was corrected for bias.

2. All TCLP analytical results are to be corrected for bias, including those which fall below the treatment standards. This is indeed the intent of spike recovery. In some cases the method (or laboratory/analyst) may underestimate the true concentration. It is for that reason that it is critically important that the spike recovery correction factor be applied when the results are less than the treatment standards.

3. Data collected before the mandatory date would not be subject to correction for analytical bias to comply with the toxicity characteristic ruling. However, it should be noted that the facility may be liable for proper disposal of any waste which was improperly identified. After September 25, any hazardous waste determinations should be based on the TCLP with bias correction.

4. If you wish to supply information on the impact of bias correction on generators of hazardous waste, I suggest you send this information to:

Steve Cochran
Chief, Characteristics Section
OS-331
401 M Street
Washington, DC 20460

I hope we have been responsive to your questions. If you need additional information on the Toxicity Characteristic Rule, please contact Steve Cochran at 382-4769 or contact Jeanne Hankins at 382-4761 for questions on bias correction.

Sincerely,

Sylvia K. Lowrance
Director
Office of Solid Waste

NOV 19 1990

MEMORANDUM

SUBJECT: Request for US EPA Headquarters Assistance in Selection of Non-US EPA Approved Methods for RCRA Subpart X Permits

FROM: David Bussard
Director
Characterization and Assessment Division (OS-330)

TO: Terry L. Anderson
Chief
RCRA Implementation Branch
US EPA, Region VIII

This memo is in response to the request by Terry Anderson, Chief of the RCRA Implementation Branch, Region VIII, for Office of Solid Waste (OSW) headquarters guidance on appropriate analytical methods for the analysis of the following eleven compounds (with CAS Nos.), in air, from open burning/open detonation, for which no approved USEPA methods apparently exist:

Cyanogen chloride	(506-77-4)
1,1-Diethylhydrazine	(616-40-0)
1,1-Dimethylhydrazine	(57-14-7)
1,2-Dimethylhydrazine	(540-73-8)
Ethyleneimine	(151-56-4)
Hydrazine	(301-01-2)
Hydrogen cyanide	(74-90-8)
Methylhydrazine	(60-34-4)
Nitric oxide	(10102-43-9)
Toluene diisocyanate	(584-44-9)
o-Toluidine hydrochloride	(95-53-4)

United Technologies advocates the use of Draeger tubes for these analyses, while Region VIII advocates the use of supercritical fluid chromatography (SFC).

From our experience, OSW agrees with the Region VIII position that Draeger tubes are inappropriate for use in this application, because they are prone to giving false negative responses. However, it is also our opinion that SFC is inappropriate as well for this application. SFC is an unproved technique for

environmental analyses, and shows little promise of future applicability, particularly for the above list of compounds. Therefore, SFC has a low priority in OSW's methods development program.

Toluene diisocyanate and o-toluidine hydrochloride (as o-toluidine) can be determined by SW-846 Method 8270. They should also be amenable to sample preparation by one of the methods listed in the "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-600/4-84-041, and its subsequent updates, originally issued in April, 1984 by EPA's Atmospheric Research and Exposure Assessment Laboratory in Research Triangle Park, North Carolina. Methods for nitric oxide and other gases in air may be available from the Office of Air Quality, Planning and Standards (OAQPS) in Durham, North Carolina. OAQPS has published a number of ambient air methods in the Federal Register as a part of their regulations.

Other sources of applicable methodology for analysis or monitoring of these compounds in ambient air include the manufacturers of the compounds in question and the National Institute for Occupational Safety and Health (NIOSH). The manufacturers need to monitor the quality of their products through assay methods, and also to monitor air exposure of their workers to these compounds during the course of the manufacturing process. Exposure monitoring methodology is a specialty of NIOSH, and they publish many volumes of analytical methods. Manufacturers of the compounds of concern should be found in the trade publication "Chemical Sources", which is commonly used by chemical purchasers.

If we can be of further assistance, please feel free to call Barry Lesnik of my staff at FTS: 382-7459.

cc: Chet Oszman

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 1 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Michael C. Stroh
Trace Organics Supervisor
PDC Laboratories, Inc
P.O.Box 9071
Peoria, Il 61614

Dear Mr. Stroh:

Here are my answers to the QC questions you raised in your October 19, 1990 letter to me.

You indicated concerns raised recently with your data raised during permit reviews. In the Environmental Protection Agency, the responsibility for performing such reviews is a Regional one not a Headquarters one. While I will offer my technical observations on the matter shortly, I urge you to contact Region V (Ms Valerie Jones, Quality Assurance Officer) for Official guidance. I appreciate that PDC intends to comply with EPA's intent with regard to QC issues, while offering competitive, legally and scientifically defensible analytical services to your clients.

Matrix spike recovery intends to furnish two important pieces of information in the analytical process. First, it will assist you in ascertaining and correcting for co-extracted artifacts which attenuate the analytical procedure's quantitation -- analytical bias compensation. Secondly, it will assist you in determining if the particular analytical scheme is applicable to the specific set of conditions presented by particular samples to your laboratory. As you will see, my subsequent answers to your questions are consequences of these two uses of matrix spike recovery data.

Your choice of, "performing a matrix spike on <u>every</u> waste's TCLP extract" is within the scope of the June 29, 1990 TCLP rule. As you are aware the similarity of samples is more than simply being a TCLP leacheate, and more than being just a solid, liquid, or sludge type waste, and probably quite process specific. Over time your historical data might be marshalled to demonstrate that various waste types really are identical with respect to matrix spike recovery of a given analytical method. You have made the most prudent choice for now.

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The proper reporting of non-detected analities is of concern. The limit of detection will vary depending on the analytical matrix as well as the cumulative effects of reagents, technique, procedure, and materials. The matrix spike provides a means of adjusting the level of detection, a compensation for analytical bias. When it is applied, it may as you indicate, "force the waste generator to either certify for that compound, or manage the waste as hazardous." When faced with this situatation, you can, it seems to me elect anomg several alternatives:

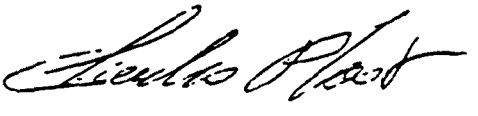
- Repeat the analysis
- Change the process, analyst, equipment handling, cleaning, reagents, instrumental calibration schedule
- Choose a different analytical scheme

The point being that one is much better off with a positive, identified, measured, constituent than a non detect. If I confused you when we talked, I hope it is clear now. Actually, the way that you were operating is quite acceptable. But it would be incorrect to substitute the QC check standard for the matrix spike.

Because the QC check standard provides different information than the matrix spike, it is not possible to substitute one for the other. The QC check standard, reports the degree of control that exists in performing the analytical process within the laboratory. On the other hand, the matrix spike reports the adequacy of the methodology in estimating the true value in a given set of samples. In those instances when the matrix spike associated with a particular batch is below that expected in the method, you need to correct the sample result or alter the process or select a different method. If the QC check sample shows the method to be in control, it seems to me, that you may need to use a different method (assuring yourself that it too is in control) -- hopefully one that has a better recovery.

I hope that my comments have been helpful. They are intended to be technical information only. Please seek approval from Region V. Also feel free to call me with any further questions you may have (201-382-4761).

Sincerely yours,



Charles Plost
Senior Chemist
Technical Assessment Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 30 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Regulatory Determination on Used Oil Filters

FROM: Sylvia Lowrance, Director
Office of Solid Waste

TO: Robert L. Duprey, Director (8HWM-RI)
Hazardous Waste Management Division
EPA Region VIII

Thank you for your memorandum of August 30, 1990, requesting a regulatory interpretation of the status of used oil filters under the new Toxicity Characteristic (TC). In your memorandum, you inquired about used oil filters that are crushed in vehicle maintenance shops, where a certain portion of the residual used oil in the filter is separated from the filter. The answers to the specific questions you asked are listed below.

1. The Toxicity Characteristic Leaching Procedure (TCLP) is performed on used oil filters by crushing, cutting or grinding the waste (filter plus contents) until the pieces are smaller than 1 centimeter in their narrowest dimension (and thus are capable of passing through a 9.5 mm standard sieve). See Step No. 7.3 of the TCLP. The surface area criterion referred to in Step 7.3 does not apply to used oil filters. (Note: If the generator recycles both the used oil and metal, you do not need to test because recycling of both types of materials is exempted from hazardous waste regulation as discussed below.)

2. and 3. Assuming a used oil filter exhibits the TC, you had inquired whether the act of crushing filters is regulated treatment or exempt recycling. Generally, the types of used oil filter crushers you described would not be regulated if the used oil was being recycled (see 40 CFR 261.6(a)(2)(iii) and (a)(3)(iii)). That is, since the purpose of the crushing is to remove the used oil for recycling, we view the crushing to fall within the used oil recycling exemption. The crushing may be performed on- or off-site, for profit or not. The determining factor is whether the used oil will be recycled. The filter may be shipped off-site for crushing under the used oil exemption, providing the oil is collected for recycling.

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Finally, in the sales brochures you sent, there was mention of an open container used to accumulate the used oil after the filter was crushed. (Currently, used oil accumulation by generators is not regulated if the used oil is recycled, but EPA did propose that such containers be kept closed. See 50 FR 49252, November 29, 1985.) Storage or accumulation of characteristically hazardous used oil is regulated if the used oil is to be disposed of; in that case, the containers must be closed except when adding or removing the used oil (per §265.173(a)).

Please contact Daryl Moore at (202) 475-8551 if you have any additional questions on the applicability of the Federal hazardous waste regulations with respect to used oil filters.

cc: Waste Management Division Directors, Regions I - VII and IX - X
Jeff Denit
RCRA/Superfund Hotline
Regional TC Contacts

Bruce L. Johnson, Chief
Environmental Compliance and Investigation Unit
Environmental Services Section
Minnesota Department of Transportation
Transportation Building
St. Paul, MN 55155

Dear Mr. Johnson:

On December 6, 1990, you sent a letter to our office requesting clarification on information you had heard regarding the applicability of the new Toxicity Characteristic Leaching Procedure (TCLP) relative to the old Extraction Procedure (EP) when testing leaded paint sandblasting waste. This letter responds to your specific concerns.

As you know, the Toxicity Characteristics (TC) rule was effective on September 25, 1990 for large quantity generators, and compliance must be achieved by March 29, 1991 for small quantity generators. On the compliance dates of the rule, the EP test can no longer be used for hazardous waste identification purposes; the new TCLP method must be used.

The likely source of confusion is the Land Disposal Restrictions (LDR) program, which allows use of either the TCLP or the EP test when measuring compliance with the treatment standards for certain arsenic- and lead-containing hazardous waste (see 55 FR 22660, June 1, 1990; Land Disposal Restrictions for Third Third Scheduled Wastes: Final rule; technical amendment - enclosed). For these wastes, the Agency specified that if a waste does not achieve the nonwastewater treatment standard based on analysis of a TCLP extract, but does achieve the standard based on analysis of an EP extract, the waste is in compliance with the treatment standard. (This action was taken because the data used to develop the treatment standards for these wastes were based on EP toxicity leachate data. Treatment standards for characteristic wastes for the remaining EP toxic metals (D005, D006, D007, D009, D010, D011) and EP toxic pesticides (D012 - D017) must be evaluated using the TCLP.) This LDR provision is applicable to treatment, storage, and disposal of hazardous waste which must meet required treatment standards prior to land disposal

In summary, the information you received at the Mississippi Valley Conference regarding the use of the EP test versus the TCLP with respect to leaded paint sandblasting waste was, as you have also determined, inaccurate. The only circumstance that exists where there is an option of using either the TCLP or the EP is when measuring compliance with the treatment standards for certain arsenic- and lead-containing hazardous waste.

As for the information you received from Mr. Jack Kollmer at the November 9, 1990 luncheon, regarding the acceptance of the EP Toxicity test for "one time operations" which includes bridge paint removal, this was also inaccurate.

Of course, state and local agencies may have additional regulations that differ. The appropriate EPA Regional office or State and local regulatory agencies should be contacted for additional assistance or clarification.

If you have further questions regarding the TC rule, please contact Steve Cochran at (202) 475-8551.

Sincerely yours,

David Bussard, Director
Characterization and Assessment Division

FEB 22 1991

Mr. Herschel Cutler
Institute of Scrap Recycling Industries, Inc.
1627 K Street, NW
Washington, DC 20006-1704

Dear Mr. Cutler:

I appreciate your providing us with the documentation of your analyses of the fluff materials. We are returning the documentation, per your request. Please note that in order to make a copy for our records we were obliged to remove the binding. I trust this will not be too great an inconvenience.

The comparison of the results between our contractor (MRI) and your contractor (BCM) indicated a difference in some of the results, as you had previously pointed out. BCM's EP Tox results were approximately 3 - 30 fold lower than those from MRI for lead and approximately 2 - 10 fold lower for cadmium. The TCLP results were generally comparable, although BCM did have two significantly lower lead values and one lower cadmium value.

The attached report describes the evaluation we conducted of the analytical documentation from both BCM and MRI. I would like to highlight those areas we thought were most noteworthy.

Since pH is one of the key factors effecting the leachability of metals into an aqueous medium, we have carefully reviewed the data provided by both laboratories with special attention to the pH data.

For the EP Tox procedure, it is necessary to adjust the pH to 5.0 +/- 0.2 with an acetic acid solution (see attachment for details on procedure). MRI provided full documentation of the pH adjustment step, including the pH values before and after each adjustment. BCM did not provide documentation of the pH values after adjustment for some of the samples. Therefore, it was difficult to fully evaluate the impact of this step in a comparative manner. Data from BCM indicates that the pH before each adjustment was much higher than 5.0 +/- 0.2, and this may indicate that overall, the pH was higher in the samples leached by BCM than MRI. That may be one reason that the concentrations of lead derived from the EP Tox test as performed by BCM were significantly lower than MRI's. Also, during the on site review, a discussion with BCM personnel indicated that, due to the large

quantity of acid required and the time involved, a decision was made to lower the pH to only 5.2. This is the upper limit of the allowable pH range, and this factor may also help explain the lower levels of lead found in the samples analyzed by BCM. (Details provided in attached report.)

When using the TCLP procedure, a selection must be made between two different extraction fluids. This selection is made based on the pH of the material. In two cases MRI used extraction fluid #2, whereas BCM used extraction fluid #1 in all cases. For both of those samples where MRI used extraction fluid #2, MRI reported a higher concentration of lead than did BCM. The use of extraction fluid #2 for these samples had no apparent effect on the concentration of cadmium. MRI provided data to support the use of extraction fluid #2, while BCM provided no data to indicate which fluid should be used. (See attached report.)

Relatively minor analytical anomalies were noted in some of the data submitted by both laboratories. It is the opinion of the reviewer that the anomalies would not make a major contribution to the differences observed. However, these are also included in the attached report.

We conclude that the data provided does not support the contention that the TCLP is a more aggressive test than the EP Tox. We are aware that laboratories do have more difficulty in using the EP Tox, and we feel that this study emphasizes that observation. Data from MRI show that the results are roughly comparable between the EP Tox and the TCLP. We do not believe that the documentation provided by BCM is adequate to support the proposal that the two leaching procedures are not comparable.

We appreciate your participation in this comparison study. We feel it has provided further clarification of our reason for replacing the EP Tox with the TCLP. If you have any questions on this evaluation, please contact Alec McBride on 382-4761.

Sincerely,

David Bussard
Director
Characterization and Assessment Division

cc: Alec McBride
Jeanne Hankins
Gail Hansen
Steve Cochran
John Scalera, OTS
Dan Reinhart, OTS

REVIEW OF DATA ON FLUFF SAMPLES

This review covers all the data provided by both BCM and MRI. The data was reviewed for internal consistency, calculation errors, compliance with the method, and quality control measures.

EP TOX

pH DETERMINATION

After addition of the waste and the distilled water into the extractor, the pH must be measured and then adjusted if it is greater than 5.2. The pH must be monitored during the course of the 24 hour extraction period according to the following schedule:

- adjust the pH of the solution in 15-, 30-, or 60-minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units.
- continue the adjustment for at least 6 hours.
- if, at the end of the 24 hour extraction period, the pH of the solution is not below 5.2, and the maximum amount of acid has not been added, the pH should be adjusted to 5.0 +/- 0.2, or until the maximum allocated amount of acid is utilized, and the extraction continued for an additional 4 hours, during which the pH should be adjusted at 1 hour intervals.

Data forms provided by MRI allowed for simple and easy determination of the pH adjustment process. The following information was included: time and interval, pH before and after adjustment, volume of acid added and cumulative amount, post 24 hour adjustment, and final volume of water added.

Data provided by BCM was difficult to comprehend. Only in some cases was the time and/or interval indicated. In those cases where the pH was provided, it was apparently the pH before adjustment with the acetic acid solution. It was not possible to determine what the pH was at the end of each adjustment or at the end of the 24 hour period and whether the leaching period was extended an additional 4 hours if the pH was greater than 5.2. It was also unclear whether there was any addition of water at the end of the leaching period.

It was noted that the volume of acid added by BCM was approximately two fold greater than that added by MRI, which could indicate a difference in concentration of the acetic acid reagent. Otherwise, one would expect the BCM results to show greater leaching. The incremental volumes themselves frequently differed by approximately a factor of 10, most notedly at the initiation of the leaching procedure. MRI in most cases adjusted the pH very

close to 5.0, with two excursions below 4.8 (duplicates of sample 5,5 were adjusted to a pH of 4.71 and 4.45 initially). Since BCM did not provide pH data after the addition of acid, it is not possible to determine whether the adjustment procedure affected the amount of leaching. Conversations between BCM personnel and the on site observers from EPA indicated that the pH adjustment was stopped at a pH of 5.2 due to the large volume of acid added and the extended length of time for adjusting the pH. The pH recordings (presumably before adjustment) which were documented by BCM were much higher than 5.2. This might mean that the amount of lead or cadmium extracted could be lower because of a higher overall average pH during extraction.

In summary, there are several apparent inconsistencies. MRI added smaller increments of acid, a smaller total volume of acid, but, in those cases where it was possible to make a comparison with BCM, MRI samples had a lower pH at the end of the 24 hour leaching period. It should be noted, however, that in no case did data from MRI or BCM show that the pH was less than 5.2 at the end of 24 hours. Therefore MRI continued the leaching procedure for an additional 4 hours as per the method, which may have increased the amount of lead and cadmium leached from the fluff. It was not possible to determine if BCM had an additional 4 hour extraction period.

TCLP

Extraction Fluid Selection

In order to determine the appropriate extraction fluid for the TCLP, one must use the following procedure:

- Weigh 5 g of the solid phase of the waste (particle size 1 mm diameter) into a 500 mL beaker or flask.
- Add 96.5 mL of reagent water to the beaker, cover with a watch glass and stir for 5 minutes.
- Measure and record the pH. If the pH is less than 5.0 use extraction fluid #1.
- If the pH is greater than 5.0, add 3.0 mL 1.0 N HCl, cover with a watch glass, heat to 50° C for 10 min.; let cool to room temperature and record the pH.
- If the pH is now less than 5.0, use extraction fluid #1. If the pH remains greater than 5.0, use extraction fluid #2.

MRI provided information which detailed the pH values at each step. Based on the pH, two of the samples were extracted with fluid #2: samples 3,12 and 5,5. BCM used extraction fluid #1 for

all samples, and did not provide any documentation of pH checks. The lead analyses of these two samples revealed significant differences in concentration, but the cadmium results were not significantly different.

Sample 6,4 had a higher concentration of lead and a lower concentration of cadmium when analyzed by BCM as compared to MRI. No differences in procedure were noted that might have accounted for this inconsistency.

In summary, the differences noted in the TCLP results for lead analyses in samples 3,12 and 5,5 would appear to be due to the use of different extraction fluids. Further information is needed to determine whether the correct extraction fluid was selected by BCM. The data does not indicate any variation in method for the differences noted in sample 6,4.

ANALYSIS BY FLAME ATOMIC ABSORPTION SPECTROMETRY

MRI documented instrument drift in several instances when using flame atomic absorption spectrometry (FAAS). Logbooks from MRI describe the techniques used to compensate for the drift, including 1) manually establishing the baseline from the strip chart recorder and 2) subtracting the blank from the preceding 10 samples. The second practice is not recommended as it would tend to inappropriately lower the concentration in the samples analyzed first. Strip chart recordings would be needed to verify concentrations under the first condition.

Examination of the BCM data also indicated possible instrument draft. Several QC samples had to be reanalyzed before they met QC limits. Also, several analytical runs were missing from the package. No explanation was given for these anomalies. Other observations include the following: In the initial calibration for lead, BCM did not use the 25 mg/L sample to establish the calibration curve. During the cadmium analysis, the auto-zero function was initiated after calibration. MRI had a high spike recovery (approximately 10% higher than expected) for cadmium in sample 6,4. Reanalysis confirmed the high recovery.

In summary, the data from MRI may be biased low for cadmium in EP Tox, based on the technique for compensating for baseline drift. Cadmium results for the TCLP leachate of sample 6,4 by MRI may be biased high. However, the effects of these biases on the results would be relatively minor, probably no more than +/- 10%. Further information would be needed to understand what effect the anomalies found in the BCM data would have on the bias of any results.

GRAVIMETRIC DATA

Both the EP Tox and the TCLP require the use of a 100 g sample which must be weighed out before commencing the procedure. BCM provided data on the weight determination of seven samples. Several errors were identified (6 of 7). Although these errors would have only a nominal effect on the overall accuracy of the results it indicates a potential weakness in the quality assurance system. The following data compares the results calculated by BCM and the EPA reviewer:

SAMPLE NO	BCM	EPA
2,5	100.23	99.40
2,5	100.31	99.73
2,4	100.35	100.35
2,4	100.85	100.70
2,12	100.38	100.08
2,12	100.16	99.55
3,5	100.32	100.73

Results for all other weight determinations were not provided by BCM nor MRI.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 19 1991

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Ms. Kelly S. Swanson
Quality Assurance Officer
Analytical Technologies, Inc.
11 East Olive Road
Pensacola, FL 32514

Dear Ms. Swanson:

I would like to clarify the issue of when to add the matrix spike in the TCLP procedure.

Because the concentration of the contaminant in the sample is completely unknown, a matrix spike, i.e., a predetermined quantity of certain analytes is to be added to each sample matrix prior to sample extraction/preparation. This is done to monitor the performance of the analytical method as well as the sample preparation method and to estimate the extent to which matrix bias or interferences reduce the measured value of the contaminant.

Section 8.2.3 emphasizes monitoring the analytical procedure as opposed to the leaching procedure. It is to be emphasized that the spike monitors the analytical and preparation procedures, i.e., analytical method encompasses both the preparative and determinative steps.

Thank you for your inquiry about spike recovery. I am available to discuss this further, should you wish. My phone number is 202-382-7458.

Sincerely yours,

Charles Plost, Acting Quality
Assurance Officer

cc
Alec McBride
Jeanne Hankins
Joe Freedman, OGC
Hugh Davis, OWPE
Steve Cochran
RCRA-Hotline
TAB-Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

March 25, 1991

Mr. Richard S. Leonard
Quality Assurance Director
National Environmental Testing, Inc.
Woodland Falls Corporate Park
220 Lake Drive East
Suite 301
Cherry Hill, NJ 08002

Dear Mr. Leonard:

The purpose of this letter is to clarify some of the discussion in my letter of August 14, 1990 to you (copy enclosed) which was sent in response to your letter of August 1, 1990. Specifically, I would like to revise the response to question number 4. The original question and the revised response are as follows:

Question 4: Our clients complain that when we dilute a sample (e.g. oil or solvent matrix) to obtain results that meet quality control requirements, that the data so obtained are "useless" because of the high reporting limit. How do we generate analytical data for compliance decisions when dilution must be performed?

Answer: First I want to clarify that, at least with respect to used oil that is destined either for recycling or to be blended as fuel, there is no need on the part of the generator to run a TCLP since these wastes are eligible for the used oil exemption (see 40 CFR 261.6(a)(2)(iii) and (a)(3)(iii). In the case of oily waste that is to be disposed or solvent wastes, it is required that generators determine if their waste is hazardous using either knowledge of their waste and/or the process that generated it or by testing. If they choose to test, then they must use Method 1311 (TCLP). The Agency is aware that running the TCLP on matrices involving oily wastes and organic liquid

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wastes may result in labs being unable to determine conclusively that the waste is or is not hazardous. In those cases, the generator must use his/her knowledge to make this determination. Where no additional information or knowledge is available, it would probably be prudent for the generator to manage those wastes as hazardous wastes. Please note that in the case of liquid organic wastes, it is possible that these wastes may already be hazardous by virtue of a hazardous waste listing (e.g., spent solvents, hazardous wastes codes F001 -F005), in which case the hazardous waste determination with respect to the TC becomes much less critical (e.g., you would be determining if additional wastes codes applied to the waste instead of making the critical hazardous waste determination). I would also add that the Agency is aware of analytical problems associated with oily and organic liquid wastes and is investigating ways to solve them.

I would like to apologize for any misunderstanding or confusion which may have resulted from my earlier response, and I hope this revised response addresses your concerns. If you have any additional questions related to this or other TC/TCLP issues, please feel free to call Steve Cochran at (202) 382-4770.

Sincerely yours,

David Anne Hansen for

Alec McBride, Chief
Technical Assessment Branch

MAR 27 1991

Aaron H. Goldberg, Esq.
Beveridge and Diamond, P.C.
Suite 700
1350 I Street, N. W.
Washington, D. C. 20005

Dear Mr. Goldberg:

Thank you for your letter of January 25, 1991 concerning our methods for ignitable liquids.

In defining an ignitable liquid hazardous waste under RCRA, the Agency's regulations state that flash point should be determined by either one of two specified methods, or by any other method which might be approved by the Administrator. Only one test method needs to be applied. The choice of the method should be based on the applicability of the method to the material being tested. In this case, one might consider viscosity, among other things, in making the appropriate choice.

I hope that this has clarified the intent. If you need further assistance, please call Charles Plost of my staff at (202) 382-7458.

Sincerely yours,

David Bussard, Director
Characterization and Assessment Division

cc Steve Cochran
Joe Freedman, OGC
Joe Lowry, NEIC
Hugh Davis, OWPE
RCRA-Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9442.1991(06)

MAY 9 1991

Nicolas H. Roelofs, Ph.D.
Nevada Environmental Laboratory
1030 Matley Lane
Reno, Nevada 89502

Dear Dr. Roelofs:

I am writing in response to your letter of May 1, 1991, to David Bussard regarding the differentiation and equivalency of Methods 8240 and Method 8260.

As you are aware, both methods are determinative procedures for the analysis of volatile organics by gas chromatography/mass spectrometry. The two methods are very similar and differ primarily in the gas chromatographic column used to effect separation. Method 8240 utilizes packed columns, where Method 8260 utilizes open tubular capillary columns.

The two types of gas chromatographic columns both provide separation of analytes targeted for analysis, but are not technically equivalent in their separation ability. It is Agency policy to allow the substitution of equivalent or superior materials within the analytical procedures of SW-846 unless otherwise specified in regulations. For example, Method 8240 Section 4.12.2 allows the substitution of equivalent packings. Furthermore, Method 8000 Section 4.2 permits other packed or capillary columns to be used provided the performance test requirements of Section 8.6 have been met. Therefore, capillary columns (with or without cryogenic cooling) may be substituted for the packed column of Method 8240, if the ability to generate acceptable accuracy and precision by Method 8000 Section 8.6 has been demonstrated.

We are aware that the delay in promulgating the methods of the first update package has added further complications regarding the utilization of Method 8260, which has not been promulgated in its final form. We are expediting the final promulgation of the methods contained in the first update package to remedy this situation as soon as possible. If you have any questions on this issue, please contact John Austin at (202) 382-4761.

Sincerely,

Alec McBride, Chief
Technical Assessment Branch

Mr. Timothy J. Anderson
Corporate Senior Project Engineer
Environmental Affairs
Rayovac Corporation
601 Rayovac Drive
P.O. Box 4960
Madison, WI 53711-0960

Dear Mr. Anderson:

I am writing in response to your letter of May 15, 1991 concerning your particle size reduction procedure for TCLP sample preparation of dry cell batteries.

Your idea of using liquid nitrogen to freeze the samples before grinding is very interesting. Freezing at those temperatures would certainly tend to make the sample easier to crush afterwards.

However, the TCLP states that one must collect a representative sample of the waste as generated for analysis. We have no way of knowing whether this type of freezing will alter or affect the sample's physical or chemical composition (and therefore its leaching potential) in some way. Since the generator is ultimately responsible for making the determination that a representative sample is collected for analysis, we cannot make an up-front determination that this type of freezing is an acceptable step in crushing batteries.

If you have any further questions, please call me at (202) 475-6722.

Sincerely yours,

Gail Hansen
Health Scientist
Methods Section (OS-331)

cc: Dave Bussard
Alec McBride
John Austin
Carrie Wehling, OGC
RCRA/Superfund Hotline
MICE Line

JUN 13 1991

Ms. Elaine McPherson
Technical Sales Representative
IT Corporation
17605 Fabrica Way
Cerritos, CA 90701

Dear Ms. McPherson:

I am writing in reference to your letter of April 11, 1991 concerning the handling of TCLP extractions as they apply to oily wastes.

We do not recommend performing the extract on the oily waste that passes through the filter as Margo Jackisch of SAIC suggested to you. First of all, the TCLP determines release potential in two steps, the first of which I will discuss here as it specifically applies to your situation. The initial filtration step separates the solid phase of a waste from its liquid phase. This ~~initial~~ phase represents the primary waste leachate or the liquid fraction of a waste that is mobile and can be released from a landfill. In your case, the oil goes through the filter and, by definition, becomes its own leachate which is then analyzed directly.

If your waste is a used oil that is destined for recycling, there is no need to characterize the waste since it would be exempt under 40 CFR Section 261.6(a)(2)(iii) and (a)(3)(iii). It is the decision to dispose of the waste, in lieu of recycling, that triggers the waste characterization requirement. If your waste is a used oil that cannot be recycled and is destined for disposal, generators are required to make a hazard determination. If the generator chooses to test for the Toxicity Characteristic, the generator must use the TCLP or an approved alternative method, as described in 40 CFR 261.24. The extract obtained from the TCLP may be analyzed by any method, provided the method used has documented QC and is sensitive enough to meet the regulatory threshold for the constituents of concern.

In cases where the TCLP results on used oil or oily wastes are inconclusive, including cases where the detection limit for a constituent is higher than the regulatory threshold, generators may use their knowledge of the processes involved in the

generation of the waste to make a hazard determination or resort to an alternative analytical method to get an answer. This has been necessary with volatile organics. At this time, the Agency is conducting studies of an automated headspace analysis methodology coupled with isotope dilution mass spectrometry in order to achieve greater analytical sensitivity for all TC volatile analytes, including vinyl chloride. We suggest the use of this approach. Currently, only a working draft method (copy enclosed) is available. Pending the outcome of Agency studies, the draft method will be revised and proposed for inclusion in SW-846.

For further assistance, please call the MICE (Methods Information Communications Exchange) at (703) 821-4789. Calls are recorded on an answering machine and, for the majority of questions, responses are provided within 24 hours. I hope this information has sufficiently addressed your questions.

Sincerely yours,

Gail Hansen
Environmental Health Scientist
Methods Section (OS-331)

cc: David Bussard
Alec McBride
Steve Cochran
Mike Petruska
John Austin
~~Gail Hansen~~
Leon Lazarus, Region II
Hugh Davis, OWPE
RCRA/Superfund Hotline
MICE Line

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9442.1991(09)

JUN 19 1991

Esther L. Harper
Chem-Bio Corporation
140 East Ryan Road
Oak Creek, WI 53154-4599

Dear Ms. Harper:

I am writing in response to your letter of June 12, 1991, in which you request written confirmation of our phone conservation regarding surrogate recovery.

In judging the validity of a data set, surrogate analytes are used as indicators of the procedure's ability to recover the actual analytes of interest. Surrogates are used to demonstrate correct sample preparation and the absence of matrix effects impacting the recovery of the actual analytes of interest. The use of surrogates is an integral part of many of the Agency's methods for the measurement of organic analyte levels. The omission of surrogates from an analytical procedure in which they are called for is a deviation from the suggested or required analytical method.

It is frequently observed in the review of analytical data that dilutions needed to achieve quantitation of the analytes in a sample results in levels of surrogates which are no longer measurable. The omission or absence of measurable levels of surrogates provides one less tool for use in the evaluation process for the assessment of data useability. However, the absence of surrogate data does not in itself invalidate the analysis. If the analysis still indicates that analytes are present at or above regulatory action levels, then the lack of surrogate recovery data would have little bearing on the use of the data. In the case of no detectable analytes, then there is no assurance that the individual sample was amenable to the preparative procedure.

Sincerely,

John Austin
Acting Chief
Methods Section

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 3 1991

Mr. Theodore W. Lund
Vice President
C/P Utility Services Company, Inc.
119 Sanford St.
Hamden, CT 06514

Dear Mr. Lund:

This letter is in response to your May 20, 1991 letter to Mr. Alec McBride of my staff in which you requested information and responses to questions concerning the Toxicity Characteristic Leaching Procedure (TCLP) and lead paint removal debris.

Q: a. TCLP as a lead test method, is it applicable to paint residues?

A: The Toxicity Characteristic (TC) rule requires waste generators to determine whether constituent levels in their waste sample extract, or leachate, exceed specified levels. This determination can be based either on their knowledge of the processes from which the waste was generated or by application of the TCLP. The TCLP is not a test method specifically for lead-containing waste, however, solid waste containing hazardous constituents, such as lead, must be tested with the TCLP unless the generator has enough other knowledge to determine whether the waste is hazardous.

Q: b. What kind of sampling protocol should be used on drums, roll offs and containers of abrasive mixtures?

A: It is important that you collect samples from drums, roll offs, and containers of abrasive mixtures that are representative of the waste. EPA has general sources of guidance with respect to the development of a sampling plan. These include "Petitions to Delist Hazardous Waste - A Guidance Manual" (EPA/503-SW-85-003, April 1985) which discusses the concept of representative sampling (section 7.1) and sampling techniques for various sampling situations, such as how you would sample a waste contained in drums (section 7.3). Also see 40 CFR Part 261 Appendix I provision is applicable concentrations.

EPA realizes that sampling is a complex procedure and the representativeness of the sample is critical to the accuracy of the waste characterization. Therefore, we strongly recommend that you contact the EPA Regional Office for your area and the state and local regulatory agencies for additional information or clarification on the appropriate sampling protocol for your specific situations.

Q: c. Can on-site stabilization be done for these special bridge projects throughout a state without establishing a TSD facility?

A: Yes. Based on the above scenario and under the federal hazardous waste regulations, on-site stabilization can be conducted without establishing a TSD facility. EPA allows for limited on-site accumulation or storage by a generator, regardless of whether the hazardous waste is treated or not treated, without the need of a permit or interim status (90 days for generators of 1000 kg/mo or more of total hazardous waste and 180 (270 if waste will be transported 200 miles or more from site of generation) days for generators of more than 100 but less than 1000 kg/mo of total hazardous waste) (see 55 FR 10168, March 24, 1986). In addition, generators (in this case C/P Utility Services would be the generator) must comply with all applicable Subtitle C requirements. For example, on-site hazardous waste stabilization or treatment processes must be conducted in accumulation tanks or containers in conformance with the requirements of § 262.34 and Subparts J or I of Part 265. Generators not in compliance with the above-prescribed requirements must comply with all applicable RCRA requirements as a TSD facility.

Q: d. Is it allowable to inject a percentage of iron shot into a mineral abrasive to mask the lead in a subsequent TCLP test?

A: The hazardous waste regulations do not restrict the use of ingredients for the purpose of preventing waste from exhibiting a hazardous characteristic. In fact, this could be a desirable process change to make the waste less hazardous. However, in this case, we understand that introducing iron to the abrasive only temporarily prevents lead from leaching from the waste, so it "masks" the lead, but does not really change the character of the waste. If your clients choose to do this, they should be aware of two points:

1) If the waste passes the TCLP initially, but then fails later prior to disposal, the waste is hazardous, subject to all applicable hazardous waste rules.

2) If the waste passes the TCLP and is disposed of as non-hazardous waste, the generator may, nonetheless, be held liable under CERCLA for any environmental damages caused by release of the lead into the environment.

Q: e. Can the State DOT choose a central collection point to accumulate waste from several projects?

A: Yes. If the State DOT determines that it is necessary that a central collection point to accumulate waste from several projects be established (e.g., in order to eliminate transportation or traffic impediments), and the waste is hazardous, prior to movement of the waste from each site (i.e., "several projects") to a central collection point, generators are required under the Federal hazardous waste regulations to prepare a manifest. In addition, a transporter must not transport hazardous waste without having received an EPA identification number from the EPA Regional Administrator. Furthermore, a transporter must store manifested shipments of hazardous waste in containers meeting the requirements of § 262.30 at the transfer facility (i.e., "a central collection point to accumulate waste") for a period of ten days or less in order to avoid regulation as a TSD facility for storage of those wastes (see 40 CFR 262.20, 263.11-.12).

I hope the responses to your questions are of assistance. Of course, state and local agencies may have regulations that are more stringent and would thus, as a practical matter, supersede the Federal regulations. Furthermore, the answers to the questions you raised are likely to vary from site to site and from state to state depending on the particular situation and the particular state's regulations. Therefore, I suggest that you contact the state waste management agency where specific paint removal activities are planned for relevant requirements and regulatory interpretations. In addition, you may want to contact the local EPA regional office, particularly if you plan on activities within states which do not have approved hazardous waste management programs.

If you have any further questions, please contact Daryl Moore of my staff at (202) 475-6721.

Sincerely yours,

David A. Bussard
Director
Characterization and Assessment Division

cc: Carrie Wehling, OGC
John Austin
Gail Hansen
RCRA/Superfund Hotline
MICE Line

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL - 9 1991

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

Mr. Craig S. Campbell
Regulatory Analyst
Health and Environmental Affairs Department
American Petroleum Institute
1220 L Street, N.W.
Washington, D.C. 20005

Dear Mr. Campbell:

In response to a request made during a recent meeting with Mr. Jim Greene of Mobil Corporation, we are providing you with the following information on the methodologies employed in our 1989-1990 used oil sampling activities.

To fill data gaps in the pre-1985 generated used oil characterization data and to provide source-specific waste characterizations using improved analytical techniques, EPA initiated a sampling and analysis program in 1989. To accomplish this, the Agency stratified the used oil universe into limited categories based on the source and application of the used oil. Seven used oil categories identified include: automotive crankcase oils; diesel engine crankcase oils from trucks and buses, heavy equipment, and railroads; hydraulic oils and fluids; metalworking oils and fluids; electrical insulating oil; natural gas-fired engine oil; and aircraft and marine engine oils.

The Agency developed sampling strategy by conducting literature research, data base searches, and telephone interviews with industry, State, and local officials, as well as telephone book listings. Each facility identified as a used oil generator was defined as a unit selected on a random basis in one of the used oil categories noted above.

To use available funds effectively by focussing on the analysis rather than the national representation of used oil sample, the sampling activities were undertaken in the Washington, D.C. area, unless samples of used oil from a specific segment could not be obtained there. The sampling program was not intended to characterize variations in used oil based on geographical location, since it is assumed that no significant differences in constituent concentrations are attributable to geographic area.

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When possible, samples of "as generated" used oil and facility storage tanks or containers were taken. This allowed EPA to determine "as-generated" constituent concentrations and the extent of adulteration endemic to the generator.

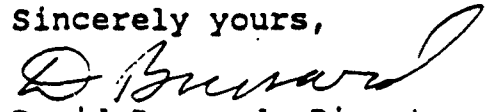
The Agency developed field procedures to sample numbering and labeling, equipment use and decontamination, sample protocols, and sample containerization and preservation, as well as documentation of sampling activities. Chain of custody forms accompanied each shipment of samples from the field to the laboratory.

The analytical program was designed to characterize used oils with respect to the compositional concentration of the constituents of concern and with respect to the Toxicity Characteristic (TC). In order to do this, the Toxicity Characteristic Leaching Procedure (TCLP) was applied to used oil samples, and after filtration, the liquid phase (filtrate) of the samples were analyzed for selected constituents of concern using analytical methods from SW-846, "Test Methods for Evaluating Solid Waste (Physical/Chemical Methods), Third Edition," as noted in the table on the next page.

For volatile organic contaminants, the Agency found that the traditional purge and trap GC/MS method (Method 8240) did not provide detection limits that were sufficiently low. As an alternative, the Agency has modified an existing headspace screening method (Method 3810) to include isotope dilution. This modified method includes the addition of several standard isotopes that correspond to each of the target analytes. For semi-volatile organics analyses, the Agency had similar difficulties. The existing SW-846 methods were adequate for analyzing most samples, but the used oil matrix required dilutions that yielded unacceptable detection limits. To improve the detection levels, the Agency utilized a specific ion monitoring (SIM) option on the GC/MS. Instead of scanning the sample for a full spectrum of semi-volatile compounds, the Agency found that analytes with lower concentration could be easily detected using SIM.

Attachment 1 is a copy of the Sampling and Analysis Plan for the Characterization of Used Oil, and Attachment 2 is the table of SW-846 Methods employed to characterize used oil. The results of the sampling and analysis effort will be publicly available at the time of publication of the used oil proposed rule. Thank you for your interest in EPA's used oil program.

Sincerely yours,



David Bussard, Director,
Characterization and Assessment Division

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AUG 30 1991

MEMORANDUM

SUBJECT: Lead Paint Removal Debris and the TCLP Procedure

FROM: David A. Bussard, Director
Characterization and Assessment Division
Office of Solid Waste (OS-330)

TO: Toxicity Characteristic (TC) Rule Regional Contacts
Regions I - X

Since the promulgation of the TC rule (March 29, 1990), there have been a number of generator and state inquiries regarding the applicability of the TC rule (i.e., Toxicity Characteristic Leaching Procedure (TCLP)) to lead-paint removal debris. Specifically, questions have been raised regarding the regulatory status of lead-paint removal debris that are generated with a mineral abrasive which includes an additive which "masks" (intentionally or not) the lead in a subsequent TCLP test. We anticipate that you will be receiving similar inquiries regarding the regulatory status of the above-mentioned waste.

In summary, there are two scenarios that may exist regarding the addition of agents or additives to mineral abrasives that are used for lead paint abatement projects:

1. Agents or additives that are mixed with the mineral abrasive prior to the abatement process (i.e., before a waste is generated) for purposes of preventing waste from exhibiting a hazardous characteristic.

2. Agents or additives that are mixed with the mineral abrasive subsequent to the abatement process (i.e., after a waste is generated) for purposes of preventing waste from exhibiting a hazardous characteristic.

The purpose of this memorandum and the attachment is to provide you with a copy of a letter that responds to these and other questions regarding the applicability of the TC rule and hazardous waste regulations to lead-paint removal debris.

Should you have any questions regarding the information in the attachment, please contact Daryl Moore of my staff on FTS 475-6721 or (202) 475-6721.

Attachment

cc: RCRA Branch Chiefs - Regions I - X
Nancy Brown (OWPE)
Frank McAllister (PSPD)
RCRA Hotline

OCT 9 1991

Dr. Irving M. Kipnis
Gascoyne Laboratories, Inc.
2101 Van Derman St.
Holabird Industrial Park
Baltimore, MD 21224-6697

Dear Dr. Kipnis:

I am writing in response to your letter of September 13, 1991 requesting an exemption from the particle size reduction step in the Toxicity Characteristic Leaching Procedure (TCLP).

The RCRA hazardous waste regulations allow a generator to use his/her knowledge of a waste (which could include previous testing data on wastes known to be very similar) or the processes that generated a waste to determine if it should be regulated as a hazardous waste. We do not require you to test. If you decide to test for the Toxicity Characteristic, however, you must use the TCLP (Method 1311). At this time, the particle size reduction step is included in the TCLP, and laboratories are required to follow the steps in the method. Because TCLP does not explicitly describe how to reduce the particle size of all materials, a laboratory analyst must use his/her best professional judgement for determining an appropriate method. This might include cutting, crushing or grinding. The responsibility lies with the generator to make that determination.

In addition, the TCLP states that one must collect a representative sample of the waste as generated for analysis. If you scrub your subsamples prior to TCLP testing, then you may not be testing a representative sample. We have no way of knowing whether the cleaning procedure will alter or affect the sample's physical or chemical composition (and therefore its leaching potential) in some way. ~~Since the generator is ultimately responsible for making the determination that a representative sample is collected for analysis,~~ we cannot make an up-front determination that your proposed method is an acceptable or appropriate step.

If you have any additional questions, please feel free to call me at (202) 260-4761.

Sincerely yours,

Gail Hansen
Chief,
Methods Section (OS-331)

cc: Alec McBride
Dave Topping
David Bussard
Carrie Wehling, OGC
RCRA/Superfund Hotline
MICE Line

OCT 29 1991

Mr. Michael Miller
Laboratory Manager
Betz Analytical Services
P.O. Box 4300
9669 Grogans Mill Rd.
The Woodlands, TX 77380

Dear Mr. Miller:

I am writing in reference to your letter of October 8, 1991, to Alec McBride, concerning the handling of TCLP extractions as they apply to liquid wastes, including oils and solvent-based products.

It is important to keep in mind that EPA does not require testing to determine whether a waste is hazardous; the generator may use other information (such as knowledge of the process by which the waste was generated) in making that determination. Also, certain oily material destined for recycling, is exempt (under Section 261.6(a)) from hazardous waste management requirements.

Liquid hazardous wastes are subject to hazardous waste management requirements regardless of whether they are destined for landfill disposal. As a result, there are many reasons why a generator or transporter would and should want to test the waste that they manage. For example, a generator may need to determine what types of storage, handling or transport requirements are applicable to the waste. The generator may also need to test the waste to determine compliance with the RCRA Land Disposal Restrictions program, under which wastes are subject to requirements for treatment by specified technologies prior to land disposal.

Given these considerations, if the generator still wishes to test his/her waste for the Toxicity Characteristic (TC) determination, then the TCLP must be followed. Once the fluid to be analyzed has been obtained (from either the initial filtration

step or the leaching procedure), the laboratory may use any appropriate determinative step for the analysis. If the methods currently in SW-846 do not achieve the required detection limits, then other methods should be used. This has often been necessary with volatile organics for oily matrices. At this time, the Agency is conducting studies of an automated headspace analysis methodology coupled with isotope dilution mass spectrometry in order to achieve greater analytical sensitivity for all TC volatile analytes. We suggest the use of this approach be considered. Currently, only a working draft method (copy enclosed) is available. Pending the outcome of Agency studies, the draft method will be revised and proposed for inclusion in SW-846.

For further assistance, please call the MICE (Methods Information Communications Exchange) at (703) 821-4789. Calls are recorded on an answering machine and, for the majority of questions, responses are provided within 24 hours. I hope this information has sufficiently addressed your questions.

Sincerely yours,

Gail Hansen

Gail Hansen
Chief,
Methods Section (OS-331)

cc: David Bussard
Alec McBride
Dave Topping
Carrie Wehling, OGC
RCRA/Superfund Hotline
MICE Line

BLWP132.91

December 17, 1991

Ms. Sharon Meves
Quality Programs Coordinator
WMI Environmental Monitoring Laboratories, Inc.
2100 Cleanwater Drive
Geneva, Illinois 60134

Dear Ms. Meves:

I am writing to you in response to your inquiry of November 18, 1991, concerning the handling and analysis of samples containing volatile organic compounds. You do not mention any specific matrix in your letter, but the tone of it indicates to us that your questions refer to aqueous samples. My responses are also limited to samples regulated under the Resource Conservation and Recovery Act, and represent the point of view of the Office of Solid Waste.

In general, aqueous samples should be hermetically sealed in volatile organic vials at the time of sampling, and must not be opened prior to analysis to preserve their integrity. The vials should be completely filled at the time of sampling, so that when the septum cap is fitted and sealed, and the vial inverted, no headspace is visible. At the time of analysis, the aliquot to be analyzed should be taken from the vial with a gas-tight syringe inserted directly through the septum of the vial. Only one analytical sample can be taken from each vial. If these guidelines are not followed, the validity of the data generated from the samples is suspect.

The following is the response to your specific questions:

1) The sample should exhibit no headspace "at the time of sampling" as I have previously mentioned. However, due to differing solubility and diffusion properties of gases in aqueous matrices at different temperatures, it is possible for the sample to generate some headspace during storage. This headspace will appear in the form of micro bubbles, and should not invalidate a sample for volatiles

2) The presence of a macro bubble in a sample vial generally indicates either improper sampling technique or a source of gas evolution within the sample. The latter case is usually accompanied by a buildup of pressure within the vial, (e.g. carbonate containing samples preserved with acid). Tom Bellar of the Environmental Monitoring Systems Laboratory in Cincinnati (EMSL-Ci) (unpublished data) states from a study that he did several years ago that "pea-sized" bubbles (i.e. bubbles not exceeding 1/4 inch or 6 mm in diameter) did not adversely affect volatiles data. These bubbles were generally encountered in wastewater samples, which are more susceptible to variations in gas solubility than are groundwater samples.

3) There is no reason to "flag" data from acceptable samples. However, finite volatiles concentrations (i.e. values above detection limits) from samples containing excessive headspace should either be identified as minimum values or discarded and new samples should be taken. Non-detectable results are invalid.

If you have any further questions, please call me at 202-260-7459.

Sincerely yours,

Barry Lesnik
Chemist
Office of Solid Waste-Methods Section

Commanding Officer
Department of the Navy
Naval Weapons Support Center (PM-4)
Crane, Indiana 47522-5000

On December 11, 1990 and April 18, 1991 you sent a letters (#8026 - Ser 50222/U5224, - Ser PM4/U5471) to our office requesting that the Navy be exempted from the provisions of the Toxicity Characteristic Leaching Procedure (TCLP) when determining if munitions items (DOT Class C, Hazard Class 1.4), which are being processed through an incinerator for disposal, exhibit toxic characteristics. This letter responds to your specific concerns. I want to apologize for not responding sooner to your initial letter.

Under the existing regulations, persons who generate solid waste are not specifically required to test their waste to determine whether they exhibit the Toxicity Characteristic or any other characteristic. Instead, solid waste generators are required to make a determination as to whether or not their waste are hazardous (see 40 CFR 262.11). This determination may be made by either applying knowledge of the waste, the raw materials, and the processes used in its generation or by testing.

In your initial letter you stated that, "the TCLP requirement to reduce particle size for toxicity determination should not be applicable because of the inherently unsafe procedure of crushing, cutting or grinding of munitions items." The Agency recognizes that the particle size reduction requirement (step. 7.3 - TCLP) could create an inherently unsafe situation when testing these items. Therefore, we suggest that determinations for these items be made by using knowledge of the process or any other available data that characterizes the properties of the above prescribed waste (e.g., EP Toxicity results).

On January 11, 1991, our office called Mr. Keith Sims, and on January 14, 1991 we spoke with Mr. J. Lawson, both of your office, regarding the Navy's request for exemption from the TCLP. In our phone conversations, we explained that the TC rule does not require generators to test in order to make a hazardous waste determination, as described above. Based on their knowledge of the process, if they think the above munitions items would

fail the TCLP-extract analysis for lead or dinitrotoluene, then these wastes could be declared as hazardous, and no testing would be necessary. However, these wastes would have to be managed and disposed of according to Subtitle C requirements. Both Mr. Sims and Mr. Lawson acknowledged that they understood our explanation and requested that we send you the above clarification in writing.

Of course, State and local agencies may have additional regulations that differ. The appropriate EPA Regional office or State and local regulatory agencies should be contacted for additional assistance or clarification.

If you have further questions regarding the TC rule, please contact Daryl Moore at (202) 475-8551.

Sincerely yours,

Sylvia K. Lowrance, Director
Office of Solid Waste

cc: Mr. J. D. Lynch (PM-4)
Mr. G. S. Edwards (5022)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Mr. Nathan Fishback
Assistant U.S. Attorney
Room 330
517 E. Wisconsin Avenue
Milwaukee, Wisconsin 53202

Dear Mr. Fishback:

This letter is to follow up on a discussion with Mr. Richard Ross of your office in which he requested a written clarification of the applicability of certain analytical methods for conducting testing under the toxicity characteristic regulation.

The Technical Assessment Branch in EPA's Office of Solid Waste is responsible for developing and promulgating analytical methods for EPA's hazardous waste program, including the Extraction Procedure (EP) leaching test. Until September 25, 1990, when changes to the toxicity characteristic (TC) became effective, the testing protocol for determining compliance with the TC was the EP test. The EP test was described in Appendix II to 40 CFR Part 261. See 40 CFR Part 261, Appendix II (Superceded test) (1990). Appendix II described the various steps of the leaching procedures itself and then stated that the test methods to be used for analyzing the 14 compounds were those specified in "Test Methods for the Evaluation of Solid Waste, Physical/ Chemical Methods", known as SW-846.

Until June 21, 1990, the methods specified in SW-846 for arsenic, selenium, and mercury were Atomic Absorption, Furnace Technique (methods 7060 and 7740 for arsenic and selenium, respectively); Atomic Absorption, Gaseous Hydride (methods 7061 and 7740 for arsenic and selenium, respectively); and Manual, Cold Vapor Technique (methods 7470 and 7471 for mercury). On June 21, 1990, the Agency also promulgated method 6010 (Inductively Coupled Plasma Atomic Emission Spectroscopy) for arsenic and selenium. The Agency has not promulgated an Atomic Absorption, Direct Aspiration Method for analyzing arsenic, selenium, or mercury.

If you have any questions on this information, please call me on FTS 260-4761.

Sincerely,

Alexander McBride, Chief
Technical Assessment Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 19 1991

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Slade Gorton
United States Senate
Washington, D.C. 20510

Dear Senator Gorton:

Thank you for your letter of November 3, 1991, regarding Chuck Burr's concerns about the disposal of used automobile antifreeze.

My staff contacted Mr. Burr to discuss his concerns regarding a recent revision to our toxicity test and to the regulations that identify wastes as hazardous. Mr. Burr indicated that there is a lack of guidance for businesses in managing their antifreeze. We supplied him with information about the current regulations and exemptions regarding the disposal of antifreeze. I have also enclosed some guidance documents that the Environmental Protection Agency (EPA) has developed for small businesses to make it easier to comply with the Resource Conservation and Recovery Act.

It should be noted that EPA does not regulate household-generated antifreeze. In the case of antifreeze generated by businesses, EPA regulates only antifreeze that fails the revised toxicity test. It may be of interest to you that we have received some information from used automotive antifreeze recyclers and the used antifreeze collection industry, indicating that used antifreeze may, in some cases, fail the revised toxicity test and therefore be a hazardous waste.

In addition, EPA allows businesses that generate less than 100 kg/month (about 30 gallons) of hazardous waste to manage their wastes without complying with the EPA hazardous waste regulation. We are considering further special exemptions so that small business owners can comply more easily. We expect to propose this concept within the next few months.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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SEP 20 1993

Lisa A. Matis
Halliburton NUS
Savannah River Center
900 Trail Ridge Road
Aiken, SC 29803

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Dear Ms. Matis:

I am writing in response to your letter of August 16, 1993 requesting clarification of the status of discarded off-gas piping, equipment, and off-gas scrubber solution from a tank system used for storage of a commercial chemical product listed in 40 CFR 261.33.

The off-gas scrubber solution is not considered to be the listed hazardous waste because the gas contained in the solution is derived from a product, not a waste. Therefore, the derived-from rule is not applicable. However, when the off-gas scrubber solution is being discarded it is a solid waste and you must determine if it exhibits a characteristic. If so, the scrubber solution must be handled as a characteristic hazardous waste.

The liquid residuals removed from the tank are the listed commercial chemical product. However, if the container from which the residuals are removed is empty, the residuals are not subject to regulation under RCRA. The definition of "empty" differs based on whether the commercial chemical product is listed as a "P" (40 CFR 261.33 (e)) or "U" (40 CFR 261.33 (f)) waste; 40 CFR 261.7 discusses what constitutes an empty container for both wastes. In the case of a "U" waste, 40 CFR 261.7(b)(1) states that "the container is empty if all wastes have been removed using the practices commonly employed to remove materials from that type of container...and no more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or no more than 3% by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size."

In the case of a "P" waste, 40 CFR 261.7(b)(3) states that a container or inner liner...is empty if the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or the container has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal."

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In the case of the liquid rinsate, if the material is rinsate from empty containers or from containers that are rendered empty by that rinsing, then by virtue of 40 CFR 261.3(a)(2)(iv)(D), the rinsate is not the listed hazardous waste.

If you have any questions, please call Wanda Levine of my staff at 202-260-7458.

Sincerely,

Jeffery Denit
Acting Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1993(02)

OCT 07 1993

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Gregory L. Crawford
Vice President, Recycling Operations
Steel Recycling Institute
Foster Plaza X
680 Anderson Drive
Pittsburgh, PA 15220

Dear Mr. Crawford:

Over the past several years we have received numerous questions concerning the regulatory status of used aerosol cans under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations. I understand that confusion about these issues may be hindering your efforts to increase steel aerosol can recycling in this country. As environmentally protective recycling is an important part of the Agency's waste management goals, I hope that this letter will help to answer some of these questions.

RESIDENTIAL AEROSOL CANS

First, I would like to emphasize that under the federal RCRA regulations, household waste (including aerosol cans) is excluded from the definition of hazardous waste (40 CFR 261.4(b)(1)). Thus, any aerosol cans generated by households are not regulated as hazardous waste. Because this exclusion attaches at the point of generation (i.e., the household) and continues to apply throughout the waste management cycle, household aerosol cans collected in municipal recycling programs and subsequently managed in recycling programs continue to be excluded from the hazardous waste management regulations.

The data you submitted[1] appear to confirm that the majority of used residential aerosol cans contain very little residual product or propellant. Along with your

[1] Texas Steel Aerosol Can Recycling Program, Final Report; Steel Can Recycling Institute (now Steel Recycling Institute); December 7, 1992.

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experience working with many of the 600 or more communities currently recycling these cans, the data suggest that aerosol cans can be effectively recycled. The Agency does recommend that communities running residential steel recycling programs educate their participants to recycle only empty steel aerosol cans. Participants could also be educated to: 1) purchase only the amount of consumer products that they need to minimize the quantities of unused products, 2) give unused products to someone else who can use them, 3) take unused or partially full containers to a household hazardous waste collection program if available, or 4) dispose of the partially full containers as directed on the label.

COMMERCIAL/INDUSTRIAL AEROSOL CANS

I understand that you are also interested in facilitating the recycling of aerosol cans generated by commercial or industrial generators. The remainder of this letter discusses only these non-household waste items.

We have been asked whether aerosol cans exhibit the characteristic of reactivity. At this time, the Agency is not able to determine whether various types of cans that may have contained a wide range of products are reactive. However, a steel aerosol can that does not contain a significant amount of liquid would clearly meet the definition of scrap metal (40 CFR 261.1(c)(6)), and thus would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv) if it were to be recycled. Therefore, a determination of reactivity or any other characteristic would not be relevant. Aerosol cans that have been punctured so that most of any liquid remaining in the can may flow from the can (e.g., at either end of the can), and drained (e.g., with punctured end down), would not contain significant liquids.

It should be noted that since the process of emptying the aerosol cans is part of a recycling process (i.e., scrap steel recycling), this activity would be exempt from RCRA regulation under 40 CFR 261.6(c) (except as specified in 40 CFR 261.6(d)). The Agency recommends that these activities be conducted in a safe and environmentally protective manner and that care be taken to properly manage any contents removed from the container (both liquids and gases). Any liquids or contained gases removed from aerosol cans may be subject to regulation as hazardous wastes if they are listed in Subpart D of 40 CFR Part 261 or if they exhibit any characteristics of hazardous waste as described in Subpart C of 40 CFR Part 261.

We have also been asked to determine whether used aerosol cans would meet the definition of "empty" under 40 CFR 261.7. Again, if the steel cans are being recycled, it is not necessary to determine whether they are "empty" under the criteria listed in 40 CFR 261.7. As long as an aerosol can being recycled does not contain significant liquids, the can is exempt as scrap metal. However, in order to dispose of a can as non-hazardous waste (rather than recycle it), a generator would have to determine that the can is empty under 40 CFR 261.7 (or that the product it contained

was not hazardous), and that the can itself is not hazardous. If a can is to be disposed of, and either contains or is hazardous waste, it must be managed under all applicable regulations.

Please be aware that this letter addresses only the federal hazardous waste regulations. Authorized State agencies implement the RCRA program in their states (although some parts of the program may be implemented by the U.S. EPA Regions), and that state regulations may be more stringent than the federal regulations. Anyone managing aerosol cans should contact the appropriate state environmental agency or U.S. EPA Regional Office to determine how the regulations of that particular state will apply to their activities.

I hope this information is useful in your efforts to increase steel recycling. Thank you for the assistance that you and the Steel Recycling Institute have provided my staff in researching these issues. If you have any further questions, please call Charlotte Mooney of my staff at (202) 260-8551.

Sincerely,

Elizabeth A. Cotsworth

for Jeffery D. Denit
Acting Director,
Office of Solid Waste

cc: Waste Management Division Directors,
U.S. EPA Regions I - X

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1993(03)

NOV - 4 1993

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Ms. Susan S. Ferguson
Director, Industrial and
Hazardous Waste Division
Texas Natural Resource
Conservation Commission
P.O. Box 13087
1700 North Congress Avenue
Austin, Texas 78711-3087

Dear Ms. Ferguson,

This letter responds to your letter dated November 5, 1992, requesting an interpretation of the Resource Conservation and Recovery Act (RCRA) regulations as they apply to hazardous waste fuels. Specifically, you asked for interpretation and guidance regarding whether fuels containing recovered light hydrocarbon would be regulated as solid wastes or as products under RCRA. I apologize for the long delay in responding to your letter.

Your letter provides examples of three companies that generate light hydrocarbon streams in the production of a primary product and that wish to sell the streams as fuel additives and/or burn them as supplemental fuel in on-site boilers. Your question is whether these secondary materials are RCRA solid wastes.

The determination of whether a secondary material is or is not a solid waste is a complex, largely substance- and situation-specific decision. Therefore, it is difficult to make a general statement regarding the regulatory status of the light hydrocarbon secondary materials referred to in your letter. In essence, the solid waste determination depends on whether the material in question is considered a "by-product" or a "co-product" of the production process. By-products burned for energy recovery are regulated as solid wastes under RCRA; co-product fuels (i.e., products) are not. The by-product/co-product determination is based on a number of factors, each of which must be evaluated in a case-specific context.

A by-product is defined in RCRA as "a material that is not one of the primary products of a production process and is not solely or separately produced by the production process" (40 CFR 261.1(c)(3)). The preamble to the 1985 Definition of Solid Waste

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final rule provides clarification of EPA's intent regarding what constitutes a by-product. It explains that EPA means to include as by-products, "materials, generally of a residual character, that are not produced intentionally or separately, and that are unfit for end use without substantial processing" (50 FR 625, January 4, 1985).

While there is no explicit regulatory definition of the term co-product, the preamble to the 1985 rule also provides some clarification as to what would be considered a co-product, as distinct from a by-product, under RCRA. The preamble describes co-products as, "materials produced intentionally, and which in their existing state are ordinarily used as commodities in trade by the general public" (50 FR 625, January 4, 1985).

Based on these definitions, several factors must be considered in deciding whether a secondary material is a legitimate product or a waste. They include, for example, whether the material constitutes a separate production stream, whether it is fit for end use essentially as is or must undergo substantial additional processing prior to use, whether it is residual in nature or a highly processed material intentionally produced for sale to the public, whether a legitimate market exists for the material, etc.

Given the information you provided, we agree that at least some of the materials described in your letter may potentially meet the definition of solid waste. If the materials meet the solid waste definition and are further determined to be hazardous under RCRA, they must be burned in compliance with the 40 CFR Part 266 standards for burning of hazardous waste in boilers and industrial furnaces. We recognize, however, that the existing solid waste criteria may be ambiguous and difficult to apply. Furthermore, we are aware that the application of those criteria may inappropriately limit the use of clean alternative fuels. Consequently, the Office of Solid Waste (OSW) is currently evaluating the issues surrounding the regulatory status of "clean fuels" through two separate but related efforts.

First, as you know, the Definition of Solid Waste Task Force has been established to review the overall system by which hazardous wastes are defined and recycling of secondary materials is regulated. The Task Force will submit their recommendations to me on how to improve the regulatory and/or statutory framework for regulating secondary materials in March, 1994. We expect the recommendations to reflect the issues raised by you and other members of the Association of State and Territorial Solid Waste Management Officials' subcommittee who have participated in the Round Table process.

Second, for the past several months, EPA has been developing a "Hazardous Waste Combustion and Waste Minimization Strategy,"

to reduce the amount of hazardous waste produced and strengthen the controls on hazardous waste combustors (incinerators, boilers and industrial furnaces). Through this effort, EPA is reexamining its existing regulations and policies on waste combustion in order to develop an integrated program for source reduction and waste management. For further information on the combustion portion of the strategy, you can contact Fred Chanania at (703) 308-8420.

Both of these efforts provide forums through which we hope to address the "clean fuels" issue (e.g., identifying "clean" fuel not subject to RCRA) in the context of the overall program. In the meantime, if you have additional questions or need further information on this issue, please contact Mitch Kidwell of my staff at (202) 260-8551.

Sincerely,

Elizabeth A. Cotsworth

for Bruce R. Weddle
Acting Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1993(04)

NOV 2 : 1993

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Richard A. Guida
Associate Director for Regulatory Affairs
Office of Naval Reactors
Department of Energy
Washington, DC 20585

Dear Mr. Guida:

Thank you for the opportunity to review the reports which you recently submitted to me regarding the Naval Nuclear Propulsion Program's (NNPP) spent nuclear reactor fuels and the RCRA hazardous waste determination. In these reports, the NNPP detailed its efforts at characterizing the Program's spent fuels based both on "process knowledge" and actual analyses conducted in hot cells in accordance with the Toxicity Characteristic Leachate Procedure (TCLP).

First, I want to commend your staff for the extraordinary efforts undertaken to characterize actual samples of irradiated fuel for the Toxicity Characteristic. I recognize that it is a fairly daunting task to sample and analyze these highly radioactive materials, and I believe your Program's efforts are unprecedented in this respect. I also would like to thank Mark Neblett of your staff for his efforts to clarify for my staff portions of the draft report that accompanied your September 20, 1993 letter to EPA, and to hand deliver additional materials to assist the Office of Solid Waste (OSW) in its review.

The entire report was reviewed by both EPA mixed waste policy staff in the Permits and State Programs Division, and RCRA testing methods experts in our Characterization and Assessment Division. Based on my staff's review, the Office of Solid Waste concurs with the reports' conclusion that the NNPP's spent reactor fuels and assemblies should not present any of the characteristics that identify RCRA hazardous wastes. Our concurrence is based on our review and agreement with the NNPP's "process knowledge" analysis, the TCLP analytical procedures used, and the TCLP/quality control measures described in your report. We also believe, given the conservative assumptions which the NNPP employed in selecting representative spent fuel samples (i.e., selecting samples that contained the highest possible concentrations of RCRA hazardous metals), that the reports support a general determination that none of the Program's spent reactor fuels would be classified as RCRA

hazardous wastes. This latter conclusion is, of course, conditioned on the completeness and accuracy of the information shared with EPA on the Program's "process knowledge," particularly with regard to projecting the TCLP test results obtained to other fuels than those that were actually involved in the testing.

As you are aware, EPA delegates the authority to implement the Subtitle C RCRA program to the States. Currently, 35 States and one territory have received from EPA the approval to regulate RCRA mixed waste. We recommend that you share your results with the appropriate hazardous waste personnel in those States where the spent reactor fuel is managed.

Again, we appreciate the opportunity to evaluate the results of the spent fuel "process knowledge" analysis and TCLP test. If you have any questions on EPA's review, please contact Susan Jones, at (703) 308-8762.

Sincerely,

Elizabeth A. Cotsworth

for Michael Shapiro, Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1993(05)

DEC 23 1993

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Peter L. Joseph
United States Department of Agriculture
Animal and Plant Health Inspection Service
6505 Belcrest Road
Federal Building, Room 533
Hyattsville, Maryland 20782

Dear Mr. Joseph:

Thank you for your letter of August 4, 1993, concerning the requirements for disposal of discharged M-44 Cyanide Capsules that originally contained a sodium cyanide pesticide. Your letter identifies two exemptions from the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations that you believe may apply to discharged M-44 capsules. It appears that either or both of these exemptions may apply to your activities. Each exemption is discussed in detail below. Please note that because these exemptions are conditional and self-implementing, it is your responsibility to determine whether or not the conditions of the exemptions are met. Because generation of this waste is not likely to fit the typical hazardous waste generation pattern, it may also be necessary to contact the agency implementing the hazardous waste program in the areas where the pesticide is used to determine the applicability of these exemptions.

First, you identify the empty container provision of 40 CFR 261.7 as a possible exemption. Since the capsules contained a sole active ingredient formulation of sodium cyanide (acute hazardous waste P106, see 40 CFR 261.33(c) and (e)), 40 CFR 261.7(b)(3) would be the appropriate standard. Specifically, 40 CFR 261.7(b)(3) indicates that a container that has held an acute hazardous waste listed in 40 CFR 261.33(e) is considered empty if: 1) the container has been triple rinsed, or 2) the container has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal. In your letter you indicated that the fired capsules are cleaner than triple-rinsed pesticide containers. If the capsules have been cleaned (i.e., the pesticide removed) by a method that has been shown to achieve removal equivalent to triple rinsing, they would be considered empty containers. This exclusion is self-implementing; there is no formal EPA approval process for using an alternative cleaning method under 40 CFR 261.7(b)(3). We would suggest that persons

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using an alternative cleaning method document the equivalency of the method and its use. Note that under 40 CFR 262.40(c), generators of hazardous wastes[1] are required to maintain records of waste identification determinations. It might also be useful to discuss the use of an equivalent removal method with the agency implementing the hazardous waste regulations in the area of use; the state hazardous waste agency if authorized, or the appropriate EPA regional office if the state is not authorized.

Second, you identify the Conditionally Exempt Small Quantity Generator (CESQG) provision of 40 CFR 261.5 as a possible exemption. Specifically, 40 CFR 261.5(e) and (f) indicate that a generator who generates less than one kilogram of acute hazardous waste in a calendar month is a CESQG and is not required to manage that acute hazardous waste in compliance with the full hazardous waste regulations providing that the generator complies with certain requirements set forth in paragraph (f). In addition to waste identification and accumulation requirements, the generator is limited to managing the acute hazardous waste in an on-site or off-site facility that meets one of five criteria listed in 40 CFR 261.5(f)(3)(i)-(v). It should be noted that this requirement would apply to burial of hazardous wastes as well as to burning.

The one kilogram quantity limit applies to each generator, which is defined in 40 CFR 260.10 to mean "any person, by site, whose act or process produces hazardous waste ..." Depending on where and how the M-44 Cyanide Capsules are used, it is possible that each person or organization using the capsules in an area (and/or the owner of the land on which they are used) may be considered a separate generator. As long as any such generator generates less than one kilogram of acute hazardous waste in a month, that waste may be managed under the reduced provisions of 40 CFR 261.5(e) and (f).[2] Users of M-44 Cyanide Capsules should contact the appropriate state or EPA regional office for assistance in defining individual generators based on the facts the pesticide use. Alternatively, if the Animal and Plant Health Inspection Service is the only user of these capsules, it may be possible to identify the total quantity generated annually, and from that determine that all generators generate less than one kilogram per month. Please note that any undischarged capsules that are disposed of would also be included in this calculation.

---

[1]Except Conditionally Exempt Small Quantity Generators, discussed below.

[2]If the actual weight of residue remaining in the container can be identified, it is not necessary to include the weight of the container in this quantity.

Under 40 CFR 261.5(f), a CESQG of less than one kilogram per month of an acute hazardous waste may dispose of that waste at one of several types of facilities. For M-44 Cyanide Capsules, the most useful type of facility is likely to be one that is "permitted, licensed, or registered by a state to manage municipal or industrial solid waste" (40 CFR 261.5(f)(3)(iv)). Please find enclosed a letter that further explains this requirement. It may be possible to obtain permitting, licensing, or registration from the appropriate state agency to dispose of M-44 Cyanide Capsules at the site of use or elsewhere in the field (burning or burial). Alternatively, the capsules would have to be disposed of at an off-site facility meeting one of the listed criteria.

This letter addresses only the federal hazardous waste regulations. Authorized state agencies (or in some cases the appropriate EPA Regional Offices) generally implement the RCRA program within each state, and state regulations may be different (although no less stringent) than the federal regulations. Most relevant for you may be that some states do not recognize the CESQG exemption, or may have different quantity limits than the federal regulations. Thus, persons using M-44 Cyanide Capsules should contact the state environmental agency (or EPA regional office) for the area in which the capsules will be used to determine how the regulations of that particular state will apply to disposal of the capsules.

Thank you for your interest in the safe and environmentally sound management of these wastes. If you have any further questions please contact Charlotte Mooney, of my staff, at (202) 260-6926.

Sincerely,

Elizabeth A. Cotsworth

for Michael Shapiro
Director
Office of Solid Waste

Enclosure

cc: Bill Jacobs, OPP (7505C)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1994(01)

JAN - 4 1993

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Michael C. Campbell
Katec Incorporated
P.O. Box 3399
Virginia Beach, Virginia 23454

Dear Mr. Campbell:

Thank you for your letter of November 12, 1993, commenting on our letter of October 7, 1993, concerning regulation of waste aerosol cans under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations. We appreciate your interest in the safe and environmentally protective management of these wastes.

As we indicated in our letter, we are not at this time able to make a categorical determination as to whether various types of cans that may have contained a wide range of products exhibit the characteristic of reactivity. It remains the responsibility of the generator of any particular waste to make this determination (see 40 CFR 262.11). However, as we indicated in the letter, a steel aerosol can that does not contain a significant amount of liquid (e.g., a can that has been punctured and drained) would meet the definition of scrap metal (40 CFR 261.1(c)(6)), and, if it is to be recycled, would be exempt from regulation under 40 CFR 261.6(a)(3)(iv). Scrap metal that is recycled is exempt from RCRA regulation under this provision even if it is hazardous waste, so generators need not make a hazardous waste determination. Scrap metal that is not recycled, however, is subject to the hazardous waste regulations if it is hazardous, so generators must make a hazardous waste determination.

We appreciate your safety concerns and stress that persons managing both regulated wastes and wastes that are exempt under recycling exemptions should take all necessary precautions to ensure that the wastes are managed safely. Thank you again for your interest in this issue.

Sincerely,

Michael H. Shapiro
Director
Office of Solid Waste

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9442.1994(02)

HOTLINE QUESTIONS AND ANSWERS

February 1994

RCRA

1. K052: Bottoms from Tanks Storing Leaded Gasoline at Petroleum Refineries

According to 40 CFR §261.32, the hazardous waste code K052 applies to "tank bottoms (leaded) from the petroleum refining industry." A variety of petroleum fractions including leaded gasoline are stored in product tanks at refineries. Bottoms from all of these tanks may contain lead. Does the K052 listing apply only to bottoms from tanks storing leaded gasoline, or does it apply to lead-containing bottoms from refinery tanks storing any petroleum fractions?

EPA intended the K052 listing to apply only to bottoms from tanks storing leaded gasoline at petroleum refineries. The listing does not apply to bottoms from tanks storing other petroleum fractions, like diesel, even if those bottoms contain lead. Tanks bottoms that do not carry the K052 code can still be regulated under RCRA Subtitle C if they exhibit one or more characteristics of hazardous waste.

9442.1994(03)

HOTLINE QUESTIONS AND ANSWERS

March 1994

RCRA

1. Off-Specification Paraformaldehyde Meets Commercial Chemical Product Listing

A manufacturer stores product formaldehyde (CAS No. 50-00-0) in containers before use in a manufacturing process. While in storage, some of the pure formaldehyde polymerizes to form paraformaldehyde (CAS No. 30525-89-4), which is unusable in the manufacturing process because it does not meet required specifications. The manufacturer separates the paraformaldehyde from the usable formaldehyde and sends the off-specification chemical for disposal. Unused commercial chemical products containing formaldehyde are listed as U122 when discarded (40 CFR §261.33(f)). Paraformaldehyde is not found on the P- or U-list (40 CFR §§261.33 (e) or (f)). When discarded, is the off-specification paraformaldehyde a listed hazardous waste?

In the above scenario, paraformaldehyde is an off-specification form of formaldehyde and meets the U122 listing (40 CFR §261.33(b)). When a commercial chemical product listed in §§261.33(e) or (f) undergoes a chemical change that renders the chemical off-specification, the applicable P- or U-listing for the original chemical applies, even in cases where the chemical composition has changed sufficiently to require assignment of a different CAS Number.

9442.1994(04)

APR - 8 1994

MEMORANDUM

Subject: Regulatory Status of Wood Stickers Used For Wood Preserving Operations

From: Rick Brandes, Chief
Waste Identification Branch

To: Jeff Ingalls, Inspector
Oregon Department of Environmental Quality

This letter is in response to your request that we make a regulatory interpretation as to the status of discarded wood stickers which were used during wood preserving operations.

Wood stickers are typically used in wood preserving operations to separate bundled wood to ensure that more surface area of wood is exposed during treatment. Typically, these stickers are reused for multiple wood treating operations. When these wood stickers have reached their useful lifetime, they are discarded, and it is how these stickers are disposed of which is the basis of this letter.

Wood stickers which are disposed of by plants following wood preserving operations that use pentachlorophenol, creosote, or CCA are classified as listed hazardous waste for the following reason: Drippage from wood preserving operations that use pentachlorophenol, creosote, and CCA is classified as F032, F034, and F035, respectively. Wood stickers, because of their intended use, come in contact with this drippage, thereby carrying the hazardous waste code when disposed. The Agency does not consider these stickers to be treated wood product since they are part of the process of treating the wood.

These stickers, however, do not need to be a part of a plant's monthly hazardous waste reporting requirement until they are ultimately discarded since they are being used as a tool to treat the wood.

If you have any questions or comments regarding this issue, please contact Mr. David J. Carver on (202) 260-6775.

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WASHINGTON, D.C. 20460

9442.1994(05)

APR 15 1994

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Theodore L. Kinne
Vice President
Interstate Natural Gas Association of America
555 13th Street, N.W.
Suite 300 W
Washington, D.C. 20004

Dear Mr. Kinne:

Thank you for your letter dated July 1, 1991, requesting clarification regarding the status of natural gas pipeline condensate under Resource Conservation and Recovery Act (RCRA) regulations. I apologize for the long delay in responding to your request.

As you correctly state in your letter, off-specification fuels (such as natural gas pipeline condensate) are not considered solid wastes under 40 CFR Part 261 when burned for energy recovery. While this interpretation has not been altered since 1985, EPA has since attempted to clarify what constitutes legitimate burning for energy recovery and may have caused some confusion as a result.

The Agency addressed the issue of legitimate vs. "sham" burning for energy recovery in the February 21, 1991, final rule on Burning of Hazardous Waste in Boilers and Industrial Furnaces. (56 FR 7134). In the preamble to that rule, EPA cited burning of ignitable off-specification natural gas condensate as a motor fuel as an example of an inappropriate or sham type of burning for energy recovery. The Agency further stated that natural gas condensate, when used in this manner, would be a solid and hazardous waste subject to Subtitle C controls (see 56 FR 7184). EPA now recognizes, however, that this was a poorly worded example of what would be considered sham burning for energy recovery. A more precise example, and one that the Agency has found to have occurred, would be the sale or use of contaminated, low energy value "natural gas pipeline condensate" as a motor fuel, or fuel additive (such that additional octane enhancers also had to be added).

In general, the January 4, 1985 preamble discussion you cite (50 FR at 630) still applies. Accordingly, use of unadulterated natural gas pipeline condensate with high Btu/lb content as a

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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JUL 29 1994

9442.1994(06)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Ms. Karen Sahler
Environmental Committee
New York Gas Group
500 Fifth Avenue
Suite 428
New York, New York 10110-0469

Dear Ms. Sahler:

In your letter to Michael Shapiro of May 17, 1994 you requested EPA assistance in determining the regulatory status of natural gas regulators that contain mercury under the Resource Conservation and Recovery Act (RCRA). You write that you believe that these regulators meet the definition of a scrap metal.[1] You also correctly point out that scrap metal is exempt from regulation when reclaimed. 40 CFR §261.6(a)(3)(iii). You have asked EPA whether natural gas regulators meet the definition of a scrap metal so that NYGAS members would not have to manage these materials as solid wastes and hazardous wastes when sent for reclamation.

EPA cannot concur with this interpretation. Since your letter states that the natural gas regulators contain mercury, these regulators cannot be scrap metal. When EPA revised the definition of solid waste in 1985, it created a new category of secondary material in the final rule, scrap metal. 50 FR 614, 624 (January 4, 1985). In setting up this new category, EPA stated "Materials not covered by this term include...*liquid metal wastes (i.e., liquid mercury)* [emphasis added]...." 50 FR at 624. The argument that the regulator taken as whole unit is mostly metal and does not contain a "significant liquid component" is inapplicable here. In general, any quantity of liquid mercury other than trace amounts attached to or contained in a spent material precludes that material from being a scrap metal.

In addition, EPA agrees with the New York State position that used equipment of this type cannot be considered to be a commercial chemical product. Based on our understanding of this material, we believe that when removed from service, natural gas regulators containing mercury best meet the definition of a spent material. 40 CFR §261.1(c)(1). Therefore, the regulators are solid wastes and hazardous wastes when sent for reclamation. 40 CFR §261.2(c)(3). These natural gas regulators would be subject to applicable RCRA Subtitle C regulations, 40 CFR Parts 262-265, 268 and 270.

"Scrap metal" is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars) which when worn or superfluous can be recycled. 40 CFR §261.1(c)(6).

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Although these mercury-bearing natural gas regulators cannot be regulated as scrap metal, the natural gas regulator may meet the definition of a scrap metal and be exempt from regulation once the mercury component is removed from the regulator (provided it does not contain other liquids and otherwise best meets the definition of scrap metal). Also, you may wish to consider petitioning the Agency to include these regulators as part of the proposed Part 273 Special Collection System regulations when these regulations become final. If included in the Part 273 regulations, these regulators could be shipped under reduced Subtitle C regulatory requirements (e.g., a manifest would not be required). EPA requested comment on the potential usefulness of Part 273 regulations to mercury-containing thermostats in the proposed rule. 58 FR 8102, 8110 (February 11, 1993).

Please be aware that under Section 3006 of RCRA (42 U.S.C. Section 6926) individual States can be authorized to administer and enforce their own hazardous waste programs in lieu of the Federal program. When States are not authorized to administer their own program, the appropriate EPA Regional office administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6929) States retain authority to promulgate regulatory requirements that are more stringent than Federal regulatory requirements.

I hope that this letter sufficiently responds to your questions and concerns. If you have any further questions or comments, please contact Paul Borst of my staff at (202) 260-6713.

Sincerely,

David Bussard, Director
Characterization and
Assessment Division

N.Y. GAS
NEW YORK GAS GROUP
500 FIFTH AVENUE • SUITE 403 • NEW YORK [illegible]

May 17, 1994

MEMBERS

Mr. Michael Shapiro
Director
Office of Solid Waste and Emergency Response
United States Environmental Protection Agency
401 M Street S.W.
Washington, D.C. 20460

Dear Mr. Shapiro:

The New York Gas Group ("NYGAS") wrote to you on December 22, 1993, to request your assistance with an issue under the Resource Conservation and Recovery Act ("RCRA").

NYGAS has been working with the New York State Department of Environmental Conservation ("NYSDEC") to determine the appropriate classification under RCRA for natural gas regulators; devices to reduce and regulate the flow and pressure of natural gas to the consumer. As we stated in our previous letter, some natural gas regulators contain small amounts (approximately 2 ounces) of mercury to regulate the flow of natural gas. The mercury is located in a small cup in the interior bottom of the regulator. The regulator itself is metal with some gasket and diaphragm materials.

In our December 22 letter we noted that in the past, NYSDEC had characterized the regulator as a non-hazardous waste when removed from service and had regulated the mercury within as a separate commercial chemical product. This interpretation changed, and in a letter to the Long Island Lighting Company dated May 7, 1993, NYSDEC concluded that when EPA published its proposed "Universal Waste" rule in February 1993, "it became apparent to us that this policy would be inconsistent with EPA's position that the mercury in used equipment does not qualify as a

commercial chemical product" and that "for the present we must consider used equipment to be spent material, and subject to the hazardous waste regulations whenever the unit fails the Toxicity Characteristic."

In our previous letter, we asked whether EPA would allow NYSDEC to reinstate the earlier policy of regulating the mercury as a commercial chemical product. We also brought to your attention an alternative approach adopted by USEPA Region I that the used, but still functional equipment is not a "spent material".

After further discussions with NYSDEC, we have concluded that there is an approach in the regulations which allows the members of NYGAS to reclaim the regulators without having to manage the equipment as hazardous waste, and which also avoids the necessity of deciding whether the regulators are "spent" or if the mercury within the regulators qualifies as a "commercial chemical product." Specifically, the regulators qualify as "scrap metal" within the meaning of 40 CFR §261.1(c)(6) (and the comparable NYSDEC definition) and are exempt from regulation when reclaimed pursuant to 40 CFR§261.6(a)(3)(iv).

By definition the category of scrap metal encompasses manufactured metal goods such as radiators, automobiles and railroad box cars, 40 CFR §261.1(c)(6), and the definition has been applied to other manufactured goods, such as used naval torpedoes (reference letter dated February 25, 1986 from Marcia Williams to Christian Valz [9441.1986(14)]). "Put another way, scrap metal is defined as products made of metal that ...are recycled to recover their metal content." 50 Fed Reg. 614, 624 (January 4, 1985). Wastes consisting entirely of liquid metals, such as mercury, or of products with a significant liquid component, such as spent batteries, are not regarded as "scrap metal" (50 Fed. Reg. 624); however, metal products which do not contain large amounts of liquid are regarded as scrap metal. Automobiles are a prime example. Scrap automobiles contain oil and other automotive fluids as well as non-metallic materials, nevertheless, an automobile is defined as "scrap metal".

Natural gas regulators are metal products (approximately **15-20 pounds**) which contain some non-metallic parts and a small amount of liquid mercury (approximately **2 ounces**). Based on the precedent established with respect to automobiles, radiators, torpedoes and other metal goods and equipment, we believe the used regulators are "scrap metal" and are presently exempt from regulation in accordance with 40 CFR §261.6(a)(3)(iv).

Thus, even assuming the used regulators are a "spent material" which exhibit a characteristic of hazardous waste due to the presence of mercury, and that the mercury has lost its status as a "commercial chemical product", the regulators are scrap metal which are not currently subject to regulation.

NYSDEC has indicated to us that it may be willing to apply the State's comparable exemption for recycled scrap metal to our situation, if NYGAS obtains confirmation from EPA that the regulators would qualify as scrap metal under the Federal regulations.

In lieu of a response to our letter of December 22, 1993, the members of NYGAS urgently request your immediate assistance in this matter in order to eliminate the uncertainty inhibiting the replacement of our equipment.

Please feel free to call me at 716-724-8684 with any questions or concerns; I look forward to receiving your written response. Thank you in advance for your time and assistance.

Very truly yours,

Karen Sahler

Karen Sahler
Environmental Committee,
NYGAS

cc: Steven Silverman, Esq., USEPA
Mitch Kidwell, USEPA
Lawrence J. Nadler, NYSDEC
William Yeman, NYSDEC
NYGAS Environmental Committee

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1994(03)

MAY 24 1994

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Mark Veckman
Comprehensive Environmental Assessments
8662H Lee Highway
Fairfax, Virginia 22031

Dear Mr. Veckman:

This letter addresses the questions raised in your Freedom of Information request of March 11, 1994. You requested information on the applicability of information provided in 1990 by EPA Region V to the State of Ohio. The issue centered on the status of wastes generated from abatement of lead-based paint (LBP).

Since the enactment of the Residential Lead Paint Hazard Reduction Act of 1992 requiring the elimination of lead paint hazards to children, there has been a significant increase in the generation of LBP waste. Several federal agencies, States, and advocacy groups have raised concerns about the effect the RCRA hazardous waste management regulations may have on residential LBP abatements. The Agency is currently evaluating various disposal alternatives for LBP waste resulting from abatement, rehabilitation, and demolition. EPA may amend the existing RCRA regulations or may propose different rules governing LBP waste disposal.

In response to your specific request on the applicability of household waste exemption under RCRA to the disposal of LBP waste, we have reviewed the information contained in the September 12, 1990 letter from EPA Region V. Disposal of LBP waste has been subject to RCRA Subtitle C since 1980 and some LBP wastes may be hazardous due to Toxicity Characteristic for lead (see 40 CFR 261.24). In the preamble to a Federal Register notice addressing this issue (49 FR 44998, November 13, 1984, copy enclosed), EPA discusses the limited scope of the RCRA exemption for household wastes. This notice indicates that the EPA Region V letter should be clarified on the following key points.

Household waste, to be excluded pursuant to 40 CFR Section 261.4(b)(1) must fulfill two criteria: first, household waste has to be generated by individuals on the premises of a household and, second, "the waste stream must be composed primarily of materials found in the waste generated by consumers in their homes." LBP waste from construction, demolition, or renovation does not meet

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these two criteria. Therefore, these wastes are not excluded from RCRA Subtitle C as household waste.

EPA does not distinguish between waste generated at a household by a homeowner and waste generated at a household by a person other than the homeowner (e.g., contractor) provided that the waste is generated as part of daily living (e.g., routine residential maintenance). Under EPA's current reading of the household waste exemption, LBP waste is not similar to the waste typically generated by household (e.g., household trash comprising of discarded consumer goods), and should, therefore, be evaluated for its potential to be RCRA hazardous waste. However, solid waste generated by a homeowner, resident, or a contractor at a home as part of routine residential maintenance (as opposed to building construction, renovation, and demolition) would be part of the household waste stream, and thus would be covered under the RCRA household waste exemption.

LBP waste that is hazardous (i.e., exceeds the toxicity characteristic limit of 5 ppm for lead in waste leachate), if generated in small quantities (i.e., less than 100 kg per month of hazardous waste), may be exempted from RCRA Subtitle C as the conditionally exempted small quantity generator waste, if State programs provide the federal exemption. Nearly all States are authorized to implement the RCRA program. Therefore, you should contact the State waste management agency where the LBP waste would be generated and disposed, for further assistance in determining the appropriate waste management and disposal requirements.

If you have any other questions on this issue, feel free to call Ms. Rajni Joglekar of my staff at 202-260-3516.

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

Enclosure

cc: Directors, Hazardous Waste Division, EPA Regions I - X
Chief, Ohio Permitting Section, EPA Region V
Mr. E.A. Kitchen, RCRA Technical Assistance Section, OSHWM, Ohio EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1994(04)

JUL 12 1994

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Christopher R. Rhodes
Director of Environmental, Safety & Governmental
Relations Programs
IPC
7380 N. Lincoln Avenue
Lincolnwood, Illinois 60646-1705

Dear Mr. Rhodes:

This letter is in response to your March 9, 1994 letter in which you requested a regulatory interpretation regarding photoresist solids ("skins") generated in the printed circuit board manufacturing industry. You asked for a decision as to whether these wastes are or are not F006 listed hazardous waste. This longstanding issue arose originally when the Virginia Department of Environmental Quality asked EPA's Region III office for assistance in making a site specific hazardous waste determination at a printed circuit board manufacturing facility in Virginia.

We have reviewed the data available to us, including the State and Regional interpretations you have provided, and have conducted further analyses of the manufacturing processes involved. Based on this review, I have made the following determination regarding the status of photoresist solids.

For the reasons stated below, we cannot categorically state that photoresist solids generated in stripping operations are not F006 wastes. Their regulatory status is dependent on the type of operation employed at each individual facility. Therefore, the determination as to whether or not skins are hazardous waste will be dependent on the analysis of the individual facility by the State or Regional regulatory authority. Regulatory authorities should make this determination based on the following interpretation of the F006 hazardous waste listing description:

o The crux of this issue is whether the stripping of photoresist solids from printed circuit boards is an electroplating operation included within the scope of the F006 listing as defined by the Agency in the Interpretative Rule on this subject which was published in the Federal Register on December 2, 1986 (51 FR 43350). Please note that although the printed circuit board manufacturing industry is no longer specifically identified in the F006 listing as a result of the December 2, 1986 interpretive rule (51 FR 43350), the processes used (e.g., electroplating, chemical etching, and cleaning

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and stripping) may still cause wastewater treatment sludges to meet the F006 listing. The interpretive rule was merely a correction to reflect the Agency's policy of referring to "processes" only, rather than specific industries in the "non-specific source" F listings; the notice did not otherwise change the scope of the listing with respect to the printed circuit board industry. This was also explained in the attached memorandum from Sylvia K. Lowrance, Director, Office of Solid Waste, to Ted A. Hopkins of the Oregon Department of Environmental Quality.

If stripping solutions are within the scope of the listing and are, therefore, electroplating wastewaters, the filtering of skins from that solution should be considered the generation of wastewater treatment sludge from electroplating operations and thus would be considered F006 listed hazardous wastes. If stripping solutions are not electroplating wastewaters then the skins would not be wastewater treatment sludges and thus not F006.

o Because the "cleaning and stripping" subcategory of electroplating operations is a conditional one (cleaning and stripping operations are only defined as electroplating operations when they are associated with common and precious metals electroplating, anodizing, or chemical etching and milling operations), and because there has not been specific guidance issued as to when there is a strong enough "association" between a cleaning and stripping operation and another included process, we are issuing the following determination as to when a cleaning or stripping operation is defined as an electroplating operation for purposes of the F006 listing:

> If the stripping operation is in line with or contiguous with an electroplating operation, then the stripper solution itself becomes an electroplating wastewater. "In line with or contiguous with" in this case would mean the stripping operation is not physically separated from these operations and the printed circuit boards are not rinsed and dried prior to the photoresist stripping operation. The stripper solutions thus could be mixed or intermingled with electroplating wastewater.
>
> Photoresist solids generated in this case would be F006 wastes.
>
> If the stripping operation is not in line with or contiguous with an electroplating operation the stripping solution itself does not become an electroplating wastewater.
>
> Photoresist solids generated in this case would not be F006 wastes.

The rationale for this interpretation is based on the intent of the listing of F006 wastewater treatment sludges. F006 hazardous wastes were listed for reasons explained in the November 14, 1980 RCRA Background Document for listed hazardous wastes. Among the reasons was the conclusion that these wastes frequently contain cadmium, hexavalent chromium, nickel, and complexed cyanide in significant concentrations. The listing process is designed to insure that wastes which meet the listing criteria are managed as hazardous

wastes. (Please note that wastes which meet the listing description but do not contain the constituents or do not exhibit the properties for which they were listed can petition the Agency or authorized State for a site-specific exclusion). If there is any possibility of skins stripping solutions being mixed or commingled with other electroplating wastewater, or if the hazardous constituents generated by other electroplating processes can otherwise be "carried forward" by the nature of the association of the two processes, the skins themselves could become contaminated with these hazardous constituents.

Our analysis suggests that physical separation of the two operations together with rinsing and drying operations of printed circuit boards prior to stripping serve to prevent the carryover of potential hazardous contaminants from the electroplating and etching operations to the stripping operation.

Conversely, our analysis suggests the lack of separation and rinsing and drying operations can result in the carryover of wastewater from the electroplating processes into the stripping solution. In these cases, the filtering of the skins from the contaminated stripping solution would constitute treatment of an electroplating wastewater and would result in the generation of F006.

Although skins may in some cases be determined to not be F006 listed hazardous waste under federal regulations, the skins may be subject to more stringent state or local regulations. However, even if the skins do not meet the listing description for federal or state regulations, they are still subject to evaluation for hazardous waste characteristics, as specified at 40 CFR Part 261 Subpart C.

The Agency may revisit this issue at a later time based on new information or facts which it may gather.

Thank you for your patience in this matter. If you have any further questions, please contact Rick Brandes of my staff at (202) 260-4770.

Sincerely yours,

Elizabeth A. Cotsworth

for Michael H. Shapiro, Director
Office of Solid Waste

Attachment

cc: Waste Management Division
Directors, Regions I - X

IPC

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THE INSTITUTE FOR

INTERCONNECTING

AND PACKAGING

ELECTRONIC CIRCUITS

March 9, 1994

Mr. Michael Shapiro
Director, Office of Solid Waste
U.S. Environmental Protection Agency
401 M Street, SW/5301
Washington, DC 20460

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Altron Incorporated
Wilmington, MA

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Technical Director
Dieter W. Bergman

Dear Mr. Shapiro:

For almost two years, the IPC and the American electronic interconnection industry have been seeking a resolution from your office on a regulatory interpretation problem brought about by the EPA Region III office. Unfortunately, we have still received no written response. Therefore, we are writing you today on behalf of the 800 independent circuit board manufacturers in the United States and strongly requesting an expedited resolution of this issue.

To briefly restate the issue, on 24 June 1991, John Humphreys, Chief of the General States Permits Section for U.S. EPA Region III, issued a written interpretation to a PWB fabrication facility in Virginia that photoresist solids separated from the facility's stripper solution (commonly called "skins") should be classified as a hazardous waste, designated as F006. As you know, the RCRA waste code F006 is reserved for waste water treatment sludges from electroplating operations.

Mr. Humphreys' decision was apparently based on two opinions. First, Mr. Humphreys considered an in-process filtration operation that separates photoresist solids from the stripper solution in order to recycle the stripper solution to be a waste treatment operation. In addition, Mr. Humphreys considered the residue resulting from the recovery of the resist stripping solution to be a categorical hazardous waste because of its connection with electroplating operations. A copy of Mr. Humphreys' letter is enclosed.

This issue has been carefully reviewed by members of the IPC Environmental, Health, Safety & Transportation (EHST) Committee, as well as several industry suppliers who provide photoresist for circuit board manufacturing and other uses. After carefully reviewing all facts including process flow information, TCLP data, and other regulatory documents, IPC's EHST Committee feels that Mr. Humphreys' interpretation is erroneous for numerous reasons.

First of all, we disagree that solids filtered from an in-process recycle loop should be considered "waste water treatment sludges." This filtration process is a closed recycle loop, and the resist skins are filtered out to prevent plugging of spray nozzles, prevent redeposition on panels, and prolong bath life for the stripper solution. Such a closed loop recycling system qualifies for the 261.4 (a)(8) "closed-loop" exemption.

Second, we argue that photoresist skins are not categorical F006 waste because they are not inherently connected to the plating operation. Photoresist application and stripping is distinct from electroplating in PWB manufacturing. In fact, in some cases, no electroplating appears anywhere in the manufacturing process at all. This operation is called "print and etch" in which a photoresist pattern is applied to copper clad laminate, which is then etched prior to photoresist stripping.

In addition, the IPC has collected TCLP data from more than 20 companies on their photoresist skins and solid residues. All samples passed the TCLP test. None showed toxicity characteristics high enough to be classified as characteristic hazardous waste. In order to properly monitor and control the filtered skins, IPC encourages all of its members to conduct periodic TCLP testing on the skin residues. We feel that these photoresist skins are already properly regulated through the present TCLP testing regimens.

Despite letters and supporting data from the IPC (enclosed) and state EPAs as well as extensive communication from DuPont and other photoresist suppliers, we have still received no written clarification or resolution of this issue from the Federal EPA office. As a result, the Region III interpretation has caused industry-wide confusion and is increasing waste handling costs for circuit board manufacturers without yielding any environmental benefit. Capturing non-hazardous photoresist solids under the RCRA F006 classification greatly increases manufacturing costs while using up precious hazardous waste landfill capacity that is needed for genuine hazardous waste.

If the Region III ruling is allowed to stand, it could add up to 10 million pounds annually to the national hazardous waste stream. This unnecessary and costly expense would further reduce the competitiveness of an industry already hard pressed by foreign competitors operating under less stringent environmental and safety regulations.

While waiting for a response from your office, a number of IPC member companies or regional circuit associations have proceeded with seeking interpretations from the state and local authorities. We have enclosed copies of all such rulings received to date. Thus far, every single state ruling has contradicted the Region III interpretation.

For these reasons, we feel that the Region III decision is clearly erroneous and should be overturned by your office. We respectfully ask that you please expedite resolution of this issue at your earliest convenience. If you need additional information or have questions, we would be happy to discuss this issue and answer any questions at your convenience.

Thank you for your time and consideration.

Sincerely,

Christopher R. Rhodes
Director of IPC
Environmental, Safety
& Government Relations
Programs
708-677-2850

Dr. John Lott
Senior Technical
Consultant
DuPont Company
919-248-5046

Michael Kerr
Circuit Center
Chairman of IPC
EHST Committee
513-435-2131

cc: Rick Brandes, Chief
Waste Identification Branch

DuPont Electronic Materials
14 TW Alexander Drive
P. O. Box 13999
Research Triangle Park, NC 27709-3999
Tel. (919) 248-5000

DuPont Electronic Materials

Chronology of Appeal on Resist Skins

• June 16, 1992 - DuPont letter to U.S. EPA asking for clarification on why resist stripper skins and sludge were classified as F006 classification, based on industry data that there were no hazardous materials in the skins and sludge.

• July 2, 1992 - IPC letter on behalf of the industry was sent to Sylvia Lowrance, USEPA, asking that a clarification and reconsideration be made onof EPA Region III decision on F006 classification for photoresist skins.

• Feb. 3, 1993 - Meeting between EPA Chief of Waste Identification Branch, Rick Brandes, and his staff with DuPont representatives and their lawyer. EPA asked for additional information to confirm the contention that PWB manufacturers do not intentionally allow metals into their stripper solution in order to dispose of them. EPA indicated at the time that Federal EPA was in agreement with at least the skins NOT being F006, but would need some time to "mend their fences with the regions". Nothing was put into writing.

• August 2, 1993 - letter sent to EPA by DuPont with arguments answering questions raised at the February meeiting, among them were ones showing that the metal concentration in strippers were not being used as a method of disposal for metals.

• December 6, 1993 - DuPont spoke to Rick Brandes by phone to find out what had been done with respect to the F006 issue. Mr. Brandes indicated that there were still problems with some of the regional EPAs as to their interpretation. DuPont indicated that Minnesota had decided that both skins and sludge were NOT F006 and give Mr. Brandes the name of the EPA official who had been sent the Minnesota information.

• January 24, 1994 - DuPont discussed the problem with Mr. Gregory Helms (Chief, Characteristic Section - Waste Identification Branch) who was standing in for Mr. Brandes at the AESF/EPA convention in Orlando. Mr. Helms indicated that Region III was still not cooperating with Washington EPA on the interpretation. Mr. Helms said that another follow-up letter might help.

• February 3, 1994 - DuPont sent a follow-up letter to Mr. Brandes - reiterating all the above, indicating that the Minnesota state EPA had found that the material are not F006, and that the interpretation was causing the industry an unnecessary expense and loss of competitiveness. A copy of the letters from Minnesota and Midwest Circuits Association was included.

• March 1, 1994 - We met with Mr. Brandes, but were unable to reach a resolution of the skins issue.

JWL - 3/11/94

E. I. du Pont de Nemours and Company

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Summary of States/Regions Findings on F006

Region 2 - New York State - finds resist skins and sludge are NOT F006
[Hadco]

Region 4 - Florida State - finds that skins and sludge are NOT F006
[Name withheld]

Region 5 - Minnesota State - finds that resist skins & sludge are NOT F006.
[Midwest Circuit Association]

Region 9 - Arizona (and soon to be California) - find that resist skins & sludge are NOT F006.
[Continental Circuits Inc.]
[Printed Circuit Alliance]

JWL - 3/11/94

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1994(05)

JUL 15 1994

Mr. Scott Tease
Technical Representative
HUBBARD-HALL INC.
P.O. Box 969
Inman, S.C. 29349

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Reference: Applicability of Hazardous Waste Codes to the LASER EX chemical polishing system

Dear Mr. Tease:

This responds to your letter dated June 15, 1994, requesting an interpretation of the potential applicability of hazardous waste codes to your process for chemical polishing.

It is our understanding, that LASER EX is a peroxide-based chemical polishing system, which entails the chemical oxidation of the surfaces of brass and copper alloys as the final step after production and prior to plating, lacquering, antiquing, or assembly. Specifically the process dips parts to be chemically polished in an oxidative chemical bath. The actual process entails an aqueous wash followed by a sulfuric predip, the LASER EX bath, and a sulfuric acid post dip. A cold water rinse is performed between each step. The process reportedly does not employ electroplating or use cyanides.

Based on the information you have provided us, the process does not employ electroplating or the use of cyanides and is separate and distinct from any such operations. Such process wastes are not within the scope of the wastes listed in 40 CFR Part 261 Subpart D. However, solid wastes which are not listed hazardous wastes in 40 CFR Part 261 Subpart D, may also be classed as hazardous wastes, if they exhibit any of the characteristics of a hazardous waste found in 40 CFR 261 Subpart C.

For example, based on the reported compositions of the baths it is possible for waste baths or rinses containing sulfuric acid to exhibit the characteristic of corrosivity (40 CFR 261.22). Aqueous wastes which have a pH less than or equal to 2 or greater than or equal to 12.5 must be managed as EPA Hazardous Waste Number D002. In the case of the LASER EX bath and subsequent washes, these waste baths and subsequent rinses may exhibit the characteristic of ignitability and would require management as EPA Hazardous Waste Number D001 (40 CFR 261.21). This is because the bath contains the inorganic oxidizer hydrogen peroxide, which is capable of severely exacerbating a fire once started by yielding

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oxygen to stimulate the combustion of organic matter. Once the hydrogen peroxide has been chemically decomposed, the wastes would no longer exhibit the ignitability characteristic due to the presence of an oxidizer. Wastes which are hazardous because they exhibit one of the 40 CFR 261 Subpart C characteristics of hazardous waste remain hazardous and subject to the regulations governing hazardous waste management, until they no longer exhibit the characteristic. However, as stated in the final sentence of 40 CFR 261.3(d)(1), "wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of 40 CFR Part 268, even if they no longer exhibit a characteristic at the point of disposal."

The above discussion is limited to hazardous waste codes which are most likely to be produced in the LASER EX process, as described to us. This in no way limits the obligation of any waste generator to fully characterize solid wastes being generated (see 40 CFR 262.11) and to manage such wastes in accordance with all applicable federal or state regulations. States may impose regulations more stringent than the federal program. Therefore, you should also consult the local RCRA regulatory authority for where the process is to be utilized.

Sincerely,

Rick Brandes, Chief
Waste Identification Branch

HUBBARD-HALL INC.
P O BOX 969 • INMAN, S C 29349
(803) 472-9031 • FAX (803) 472-2117

June 15, 1994

Mr. Micheal H. Shapiro
Office of Solid Waste
United States Environmental Protection Agency
401 M Street SW
Washington, DC 20460

Dear Mr. Shapiro:

I am writing you to request a ruling on the waste classification of a new chemical process. We have named our newest chemical polishing system the *Laser EX;* it is based on hydrogen peroxide and a stabilizer package. The polish is intended for use on brass and copper alloys. I have already met with Max Diaz on the line, his initial response was that the waste should not need to be classified as long as the sludge produced in waste treatment passes a leech test. I have given him much more information than I can include in this short letter.

The *Laser EX* process is very simple. It involves an aqueous clean, a sulfuric predip, the Laser dip step, and a sulfuric acid post dip. There is cold water rinses in between each step; it is the waste that is carried over into these rinses that we need the ruling on. I have included with this letter a product data sheet and an M.S.D.S. for more information.

Unlike most peroxide based systems, this system does not etch the surface. Rather, it oxidizes the surface to form a protective brown copper oxide coating over the alloy. When we remove this dark brown oxide film a bright, leveled, and very clean surface is the result. Some examples of where the *Laser EX* may find uses is as the final step after production prior to plating, lacquering, antiqueing, or assembly. *Laser* can take the place of hand buffing which leaves a very difficult soil to clean off the part. The *Laser EX* is also a good replacement for strong acid mix bright dips. There is no chance that there will be water carried over into this step from a plating solution. *Laser EX* does not use any electrical current for brightening. It may

HUBBARD-HALL INC.
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not effect your ruling but the system uses no chelators, cyanides, chromates, phosphates, or ozone deleting solvents.

Mr. Shapiro, I would like to thank you in advance for your help. If there are any questions that you need answered please feel free to give me a call. You can leave me a voice mail message at (800) 632 5017 box #256, or you can contact me directly at (919) 217 8281. Along with the information on the *Laser EX,* I have included information on our company. We have been in business for over a century and a half; I hope you can tell by our literature that we our a responsible supplier. Again, thank you so much for your help. Please take care and God Bless.

Sincerely,

Scott Tease

Scott Tease
Technical Representative

cc. Max Diaz

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

November 3, 1994 9443.1994(06)

MEMORANDUM

SUBJECT: Classification of Discarded Ammunition of 0.50 Caliber or Less

FROM: Sonya Sasseville, Chief
Alternative Technology Section (5303W)
Office of Solid Waste

TO: David Neleigh, Chief
New Mexico/Federal Facilities Section (6H-PN)
Region VI

This is in response to your request of June 14, 1994 in which you ask for a clarification of EPA's policy regarding the disposal of munitions less than or equal to 0.50 caliber. EPA's policy was set forth in a June 2, 1988 memorandum on **Classification of Discarded Class C Explosives**.

In that June memorandum, EPA stated "To date, only those Class C explosives identified as off-specification small arms ball ammunition up to and including 0.50 caliber have been demonstrated not to be subject to the Subtitle C hazardous waste requirements." However, EPA did not intend to imply that small arms ball ammunition could not be regulated for reasons other than reactivity. The Agency has maintained that small arms ammunition intended for disposal, up to and including 0.50 caliber, is not reactive within the meaning of 40 CFR 261.23(a)(6). The sole fact that small caliber ball ammunition is not reactive does not necessarily exempt the waste from Subtitle C regulation. Non-reactive wastes exhibiting another hazardous waste characteristic would be regulated. For example, certain small caliber ammunition may fail the TCLP for lead. Generators of discarded small caliber ammunition must determine whether their waste exhibits any other hazardous waste characteristics identified in §261 Subpart C.

Your memo also describes an instance where a waste is disposed of in a popping furnace "that does not fit the description of an incinerator and the munitions are less than or equal to 0.50 caliber, then this would not be regulated under Subtitle C ..." You are correct in that a device treating discarded ball munitions less than or equal to 0.50 caliber, would not be subject to Subtitle C regulations, unless the waste fails for another characteristic rendering it hazardous. However, please note that EPA classifies "popping furnaces" as incinerators because the process that occurs in the enclosed unit is controlled flame combustion, as discussed in the attached July 17, 1987 letter from Bruce Weddle to Jesse Cabellon.

This document has been retyped from the original.

If you have any questions, please contact Jeffrey Gaines at (703) 308-8655.

Attachment

cc: Permit Section Chiefs, Regions I-V, and VII-X
Subpart X Permit Writers' Workgroup
Waste Combustion Permit Writers' Workgroup
Frank McAlister, PSPD
Jim Michael, PSPD
Jeffrey Gaines, PSPD

This document has been retyped from the original.

FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1995(01)
OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Charles D. Duthler
ICI Composites, Inc.
2055 East Technology Circle
Tempe, AZ 85284

Dear Mr. Duthler:

This is in response to your letter of July 12, 1994, concerning the characterization of waste streams from polymeric coating operations. You stated that you are working on a project to ensure that waste streams from polymeric coating operations are properly characterized and you ask several questions related to these waste streams. We have addressed your questions in the discussions below. In some cases, the determinations you seek are based on site-specific factors and are best made by the appropriate regulatory agency (i.e., State, or EPA Region implementing the RCRA program for a particular State). Where applicable, we have provided general information to assist you in making your determinations, but we recommend that you contact other more appropriate offices for the determinations you seek.

1. How does a generator determine if his/her equipment qualifies as a manufacturing process unit?

As you have noted, the preamble language at 45 FR 72025, October 30, 1980, describes examples of manufacturing process units. These include "...distillation columns, flotation units, and discharge trays of screens..." The preamble language also describes these units as "tanks, or tank-like units (*e.g.*, distillation units) which are designed to hold valuable products or raw materials in storage or transportation or during manufacturing." (45 FR 72025, October 30, 1980) A determination of whether the units you describe are manufacturing process units is best made by the regulatory agency (i.e., EPA Region or State) implementing the RCRA program in the area of operation. In addition, States with authorized programs may impose more stringent requirements. For these reasons, consultation with the State in which polymeric coating operations will take place is recommended.

2. If an ignitable residue is removed from a unit with a wiper, does the resulting waste carry the ignitability characteristic, or is the contaminated wiper to be evaluated to determine if it exhibits the characteristic? How does the mixture rule apply to wipers used to clean hazardous wastes?

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A material that is a solid waste is by definition hazardous waste if it either 1) meets one of the listings in 40 CFR Part 261, Subpart D, or 2) exhibits one or more of the characteristics described in 40 CFR Part 261, Subpart C. Because there are no explicit listings for "used wipers" in Part 261, Subpart D, a wiper can only be defined as listed hazardous waste if the wiper either contains listed waste, or is otherwise mixed with hazardous waste. Whether or not a used wiper contains a listed hazardous waste, is mixed with listed hazardous waste, only exhibits a characteristic of hazardous waste, or is not a waste at all, will require site-specific determination. Any determinations or interpretations regarding this diverse and variable waste stream should be made by the appropriate State or EPA Region. We have enclosed a memo from Michael Shapiro to EPA Regional Waste Management Division Directors dated February 14, 1994, on the subject of industrial wipers and shop towels for your information.

3. What is the status of the proposed rule amending SW-846 to identify the technique suitable to determine if a material contains a liquid for an ignitability determination?

The proposed rule is still undergoing Agency review. Promulgation of the Agency's final ruling should occur in early 1995. In the interim, the Paint Filter test is the method to use to determine if a free liquid is present for ignitability determination.

4. How does a generator determine if his/her wastes exhibit the potential for spontaneous combustion?

No test method has been promulgated for "spontaneous combustion". It is the generator's responsibility to compare the properties of his waste with the narrative definition at 40 CFR §261.21(a)(2) and determine if the waste poses a hazard if improperly disposed. Also be aware that the U. S. Department of Transportation, at 49 CFR §173.124(b), discusses "spontaneously combustible material" and describes a Test Method for Materials Liable to Spontaneous Combustion in 49 CFR Part 173 Appendix E.

I hope this letter is of assistance. If you have further questions, please contact Ann Codrington at (202)260-4777, or Oliver Fordham at (202)260-4778.

Sincerely,

David Bussard, Director
Characterization and
Assessment Division

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 7 1995

9442.1995(02)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Richard W. Goodwin
Environmental Consultants Associates
14 Ramapo Lane
Upper Saddle River, New Jersey 07458

Dear Mr. Goodwin:

Thank you for your letter of October 3, 1994 requesting information about policies regarding self-certification of non-hazardous waste.

Policies do exist for self-certifying that some types of waste are non-hazardous but not for others.

If waste is not "listed" nor derived from a "listed" hazardous waste it would be hazardous only due to characteristics at 40 CFR 261, Subpart C. In this case, a generator may either test the waste or use knowledge to determine that it does not exhibit one of the regulatory "characteristics" in 40 CFR 261 and thus is not a hazardous waste.

If the waste is "listed" or derived from a "listed" hazardous waste, that is, if it appears on one of the lists in 40 CFR 261, Subpart D, then the generator cannot currently self-determine that a treated or mixed waste is no longer hazardous. Instead, they must petition EPA to remove their waste under 40 CFR Sections 260.20 and 260.22. The waste is regulated until EPA grants the petition. All of this is true whether the waste is to be disposed of, or beneficially recycled, although EPA has certain special exemptions in 40 CFR 261.2(e), 261.4, and 261.6, for certain kinds of recycling.

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EPA is currently developing a procedure by which listed wastes can also be self-certified as no longer hazardous. That rulemaking is referred to as the Hazardous Waste Identification Rule. We expect proposal of this rule to be published in the Federal Register by fall, 1995.

Thank for your interest, and I apologize for the delay in responding to your inquiry.

Sincerely yours,

Elizabeth A Cotsworth

for Michael Shapiro, Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 27 1995 9442.1995(03)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Daniel Wozniak
Environmental and Safety Engineer
YKK AP America, Inc.
100 Firetower Road
Dublin, GA 31021

Reference: Clarification of F006/F019 Interpretive Letter

Dear Mr. Wozniak:

This letter is in response to your request for further clarification of our October 20, 1994 interpretive letter in reference to wastes generated from your aluminum coating process. The following is the revised version of the letter, reproduced here for future reference purposes. This action is being taken because the phrase "metal salts" was inadvertently included in the original letter and is irrelevant with respect to the intent of the listing.

Your process consists basically of three unit operations which are described below, together with a discussion of the relevant hazardous waste listing descriptions:

- The aluminum is first anodized in sulfuric acid. The F006 listing description (40 CFR 261.31) specifically excludes wastewater treatment sludges from sulfuric acid anodizing of aluminum.

- The anodized material is next sealed and colored by immersion in solutions of inorganic or organic colorants. Neither ferrocyanide nor chromate-containing solutions are used in this coloring process. The material is finally coated by electro-deposition with a clear acrylic film.

Based on the information you provided us, these processes apparently do not involve the use of chromates or cyanides; thus, any wastes generated from this process do not satisfy the descriptions of F006 or F019. Additionally, since these processes are not identified in any of the specific or non-specific source hazardous waste listings in 40 CFR Part 261, Subpart D, any wastes generated from this

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process would only be subject to evaluation for hazardous waste characteristics, as specified at 40 CFR Part 261 Subpart C.

Please be aware that under Section 3006 of RCRA (42 U.S.C. Section 6926) individual States can be authorized to administer and enforce their own hazardous waste programs in lieu of the Federal program. When States are not authorized to administer their own program, the appropriate EPA Regional office administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6929) States retain authority to promulgate regulatory requirements that are more stringent than Federal regulatory requirements. Although this interpretation indicates that the wastes generated from the above processes are not subject to the hazardous waste listings under federal regulations, the wastes may therefore be subject to more stringent state or local regulations.

Thank you for your patience in this matter. If you have any further questions, please contact Max Diaz of my staff at (202) 260-4786.

Sincerely yours,

William F. Brandes
Chief, Waste Identification Branch

cc: Jeffrey T. Pallas, Region IV
Renee Hudson Woodley, Georgia DNR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 15 1994

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Daniel Wozniak
Environmental and Safety Engineer
YKK AP America, Inc.
100 Firetower Road
Dublin, GA 31021

Dear Mr. Wozniak:

This letter is in response to your letter of November 24, 1993, outlining your aluminum coating process, and inquiring if any of the wastes generated meet the hazardous waste listing descriptions for F006 or F019 published at 40 CFR 261.31. We have consulted with Mr. Jeffrey T. Pallas, Hazardous Waste Management Branch, U.S. EPA Region IV and Ms. Renee Hudson Goodley, Georgia Department of Natural Resources in preparing this response.

According to your description in your letter, your process consists basically of three unit operations which are described below, together with a discussion of the relevant hazardous waste listing descriptions:

- The aluminum is first anodized in sulfuric acid. The F006 listing description (40 CFR 261.31) specifically excludes wastewater treatment sludges from sulfuric acid anodizing of aluminum.

- The anodized material is next sealed and colored by immersion in solutions of inorganic or organic colorants. Neither ferrocyanide nor chromate-containing solutions are used in this coloring process. The material is finally coated by electro-deposition with a clear acrylic film.

Based on the information you provided us, these processes apparently do not involve the use of metal salts, chromates, or cyanides; thus, any wastes generated from this process do not satisfy the descriptions of F006 or F019. Additionally, since these processes are not identified in any of the specific or non-specific source hazardous waste listings in 40 CFR Part 261, Subpart D, any wastes generated from this process would only be subject to evaluation for hazardous waste characteristics, as specified at 40 CFR Part 261 Subpart C.

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Please be aware that under Section 3006 of RCRA (42 U.S.C. Section 6926) individual States can be authorized to administer and enforce their own hazardous waste programs in lieu of the Federal program. When States are not authorized to administer their own program, the appropriate EPA Regional office administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6929) States retain authority to promulgate regulatory requirements that are more stringent than Federal regulatory requirements. Although this interpretation indicates that the wastes generated from the above processes are not subject to the hazardous waste listings under federal regulations, the wastes may therefore be subject to more stringent state or local regulations.

Thank you for your patience in this matter. If you have any further questions, please contact Max Diaz of my staff at (202) 260-4786.

Sincerely yours,

William F. Brandes
Chief, Waste Identification Branch

cc: Jeffrey T. Pallas, Region IV
Renee Hudson Woodley, Georgia DNR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 25 1995

9442.1995(04)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Priscilla F. Adler
DEMETRIOU, DEL GUERCIO, SPRINGER & MOYER
801 South Grand Avenue, 10th Floor
Los Angeles, California 90017-4613

Dear Ms. Adler:

I am writing in response to your May 10, 1995 request for an interpretation of 40 CFR 261.32 with respect the scope of EPA Hazardous Waste No. K052 ("tank bottoms (leaded) from the petroleum industry"). Specifically, you inquired whether or not tank bottoms removed from tanks containing only naphtha would be deemed to be K052 hazardous wastes.

The scope of the K052 hazardous waste listing is limited to only those tank bottoms generated at or as part of a petroleum refinery from tanks employed in the storage of leaded gasoline or leaded blending fractions. These tank bottoms are covered by the K052 hazardous waste listing even if they do not exhibit any other characteristic of a hazardous waste.

Naphtha is an unleaded petroleum fraction isolated for blending or production of other blending stocks. The tank bottoms from only naphtha storage at a refinery would not be a listed hazardous waste under 40 CFR 261.31, and would not otherwise be subject to regulation as a hazardous waste unless they exhibited one of the characteristics of a hazardous waste, as provided for in 40 CFR 261.21 - 261.24.

Please note that under section 3006 of RCRA, individual states can be authorized to administer and enforce their own hazardous waste programs in lieu of the Federal program. In addition, section 3009 of RCRA allows states to promulgate regulatory requirements that are more stringent than the Federal program. Therefore, you should contact the appropriate state environmental agency in your state for other applicable laws and regulations that may exist.

If you have any further questions, please contact John Austin at (202) 260-4789.

Sincerely,

Elizabeth A. Cotsworth

for Michael Shapiro, Director
Office of Solid Waste

FaxBack# 11941

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DEMETRIOU, DEL GUERCIO, SPRINGER & MOYER
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CHRIS G. DEMETRIOU (1915-1989)

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JAMES P. DEL GUERCIO
WILLIAM ELLIOTT VINEY
JOHN S. McDONALD
MARGARET B. HILDEBRAND

FAX (213) 624-0174

May 10, 1995

receive
5/15/95

Mr. Michael Shapiro
Director, Office of Solid Waste
U.S. Environmental Protection Agency
401 M Street, Room 2101
Washington, D.C. 20460

Re: Request for Rule Interpretation

Dear Mr. Shapiro:

We are herewith requesting that the U.S. Environmental Protection Agency (the "EPA") provide to us a written interpretation of 40 CFR § 261.32 with respect to the scope of the EPA Hazardous Waste No. K052 ("tank bottoms (leaded) from the petroleum industry"). Specifically, are tank bottoms removed from tanks containing naptha deemed to be K052 hazardous wastes, if the tanks have never held leaded gasoline?

Doug of the EPA RCRA Hotline informed me on May 9, 1995 that, pursuant to a February, 1994 oral interpretation by the EPA, K052 refers only to tank bottoms from tanks that have held leaded gasoline. We are seeking a written rule interpretation so that we may properly advise our clients of any federal requirements applicable to the disposal of naptha tank bottoms.

Please telephone me if you have any questions.

Sincerely,

Priscilla F. Adler

PFA:mhs

WP008\NPTHK052.LTR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1996(01)

MAR 25 1996

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Patricia A. Tucker
Gobe Enterprises
49 Essex Court
Meriden, CT 06450

Dear Ms. Tucker:

This is in response to your February 20, 1996 letter regarding the waste characterization of the unused chemical "potassium hexacyanocobalt(II)-ferrate(II)," and of the spent material that results after use of that chemical for the selective removal of Cs-134 and Cs-137. In particular, you ask for the Agency's assessment of whether or not the spent material would be considered a hazardous waste and hence a mixed waste (hazardous and radioactive).

A solid waste is considered hazardous if it is either listed or fails one of the four "characteristics" (40 CFR 261), assuming it has not been otherwise excluded from the definition of hazardous waste. Neither the unused product nor the spent material you describe in you letter is a currently listed hazardous waste and, based on the analysis provided, neither appear to exhibit any of the characteristics of a hazardous waste (40 CFR 261.20). Based upon the Agency's assessment of the physical properties of the hexacyanocobalt(II)-ferrate(II) ion-exchage media, it also appears unlikely the media would exhibit the characteristics of a hazardous waste. Therefore, the unused discarded potassium hexacyanocobalt(II)-ferrate(II) product or spill residues thereof would not be RCRA hazardous waste.

However, if 40 CFR 261.24 toxicity characteristic constituents are present in the wastes being treated, then there is some potential for the spent ion-exchange media to become a hazardous mixed waste. In general, the Agency would not expect spent hexacyanocobalt(II)-ferrate(II) ion-exchage media to become characteristically hazardous due to contaminants adsorbed during the treatment of Cs-134 and Cs-137 bearing waste streams. However, this eventuality cannot be assessed fully without knowledge of the characterization of the waste stream to be treated. It is the responsibility of the waste generator to determine whether or not a waste is hazardous (40 CFR 262.11) by either testing the waste or by applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used, and to dispose of the wastes in compliance with all applicable regulations.

If you have further questions concerning mixed waste, please contact Nancy Hunt at (703) 308-8762. If you have questions regarding hazardous waste characteristics, please contact John Austin at (202)260-4789.

Sincerely yours,

Michael H. Shapiro, Director
Office of Solid Waste

PATRICIA A. TUCKER
GOBE ENTERPRISES
49 ESSEX COURT
MERIDEN, CT 06450

TEL - (203) 235 7838
FAX - (203) 237 1855

2/27/96

February 20, 1996

Mr. Michael Shapiro
M/C 5301
Office of Solid Waste
U.S.E.P.A.
401 M Street, SW
Washington, DC 20460

Dear Sir:

On November 17, 1995, my colleagues and I visited staff members in your office to discuss the waste characterization of a chemical which we intend to import from Finland. This chemical, Potassium cobalt hexacyano ferrate, is a black granular media resembling ground charcoal. Its intended use, as expressed in our low level exemption of our PMN, will be the selective removal of Cs-134 and Cs-137 from various liquid waste streams.

Our media has a strong affinity and enormous capacity for Cesium removal. The decontamination factor (DF) is two orders of magnitude greater than any other media currently available. The resulting volume reduction of solid radioactive waste is equally huge by comparison. We have recently demonstrated, for example, that Callaway Nuclear Plant in Fulton, MO would need to bury 9 cu. ft. of our media instead of 375 cu. ft. of the "next best" ion exchanger to remove cesium from the same volume of water.

The use of this chemical would be prevalent at nuclear plants and for U.S.D.O.E. cleanup efforts at sites such as Hanford. When the media eventually becomes chemically exhausted, it must be buried in a high integrity container (HIC) at an approved radioactive waste burial site such as in Barnwell, SC.

Our concern has been the detrimental effect a hazardous waste characterization under RCRA might cause. If characterized as hazardous, the resulting spent media would be a mixed waste (hazardous and radioactive) and undisposable at current burial sites. Concerns expressed by potential clients has made it obvious to us that our media will not be accepted unless they are confident that we have worked closely with your office to insure proper characterization. They must feel confident that they will be able to dispose of the media when it is spent.

Our media is not specifically listed under 40 CFR as hazardous, and it does not exhibit any characteristics of hazardous materials as defined under 40 CFR 261 Subpart C. During our November 17th meeting, members of your staff were particularly concerned with the possibility of free cyanide gas liberating from the media under various pH conditions. It was agreed that an outside source would test for cyanide liberation under conditions defined in EPA method 9010 (Revision 2, Sept. 1994). I have attached a copy of the report from the University of Helsinki verifying that no free cyanide gas is liberated by our media. I have also attached copies of a toxicity report, 11/17/95 meeting notes and our written

correspondences, to date, as evidence that we have thoroughly explored the question of hazardous classification.

Since our potential customers have expressed concerns about this product, we respectfully request that your office verify our findings in the form of a letter. We would like you to state that based on the evidence presented and on the current regulations, this media would not be considered hazardous in either its unused (potassium) or spent (cesium) forms.

Thank you in advance for considering this request and a special thanks to your staff members who have been quite helpful in our efforts to work with you. If you need any further documentation or if you have any further questions, please do not hesitate to call me at (203) 235-7838.

Sincerely,

Patricia Tucker

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1996(02)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

July 5, 1996

Randall A. Jones
Director, Regulatory Affairs
Molten Metal Technology, Inc.
400-2 Totten Pond Road
Waltham, Massachusetts 02154

Dear Mr. Jones,

Thank you for your letter of June 19, 1996 on EPA's revised "Policy on Enforcement of RCRA Section 3004(j) Storage Prohibition at Facilities Generating Mixed Radioactive/Hazardous Waste." In that letter you express concern that the policy defines "commercially available treatment technology and disposal capacity" to include a facility that has a RCRA permit, interim status, a Research, Development, and Demonstration permit, or a Land Treatment permit. You indicated that based on this definition a generator might assume that recycling facilities are not included as acceptable alternatives for mixed waste disposal. I would point out that the policy does suggest several available alternatives (without specifically endorsing any one of the alternatives) which a generator might explore to dispose of material that is both hazardous and radioactive. Molten Metal's trademarked Quantum-Catalytic Extraction Process is mentioned in the policy as a recent technological development.

There was no intent in the definition to exclude legitimate recycling facilities, but rather to emphasize the use of permitted facilities for waste treatment and disposal. Of course, if the material is legitimately used as an ingredient in a manufacturing process, or if a legitimate recycling facility that meets, or is exempt from, RCRA requirements is available to accept materials EPA would not extend the enforcement policy to generators that did not avail themselves of legitimate recycling opportunities. EPA seeks to encourage the reuse of materials when this is possible. I trust this clarifies this issue. If you have further questions, you may wish to contact Nancy Hunt at 703-308-8762, since she chaired the EPA workgroup that drafted the revised enforcement policy.

Sincerely yours,

Matthew Hale, Director
Permits and State Programs Division

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9442.1996(03)

OCT 24 1996

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Peter H. Weiner
Heller, Ehrman, White, and McAuliffe
333 Bush St.
San Francisco, California 94104-2878

Dear Mr. Weiner:

Thank you for your letter of March 12, 1996 regarding the regulatory status under the Resource Conservation and Recovery Act (RCRA) of spent copper etchants managed by Heritage Environmental Services, Inc. ("Heritage"). You raised an important question, and we appreciate your interest in this matter. I hope the following discussion addresses your concerns.

As we understand it, Heritage receives spent etchants from the manufacturers of printed wire boards. At its facility in Indiana, Heritage then uses the etchants to produce tri-basic copper chloride (TBCC), an animal micronutrient. A residue generated in the TBCC manufacuring process is then treated by adding additional chemicals to produce "fresh" alkaline etchant. Heritage argues that they are using the spent etchant as an ingredient in an industrial process to make a product (i.e, TBCC). This kind of use would exclude the etchant from the definition of solid waste as long as no reclamation occurred (see 40 CFR 261.2(e)(1)(i), adopted verbatim by the State of Indiana at 329 IAC 3.1)). The Indiana Department of Environmental Management (IDEM) has determined that the spent etchant at Heritage's facility is indeed being used as an ingredient in an industrial process, and that this use meets the terms of the regulatory exclusion.

As stated in your letter, you believe that Indiana was incorrect in its interpretation, and you asked the Environmental Protection Agency (EPA) to request that the state revise its determination. Your belief is based upon the Agency's preamble discussion of this regulation at 50 FR 614, 619 (codified at 40 CFR 261.1(c)(5)(i)). In that discussion, EPA stated that "when distinct components of the material are recovered as separate end products (i.e., recovering lead from scrap metal in smelting operations), the secondary material is not being used, but rather reclaimed and thus, would not be excluded under this provision". Since Heritage is producing separate products at its plant (i.e., TBCC and "new"etchant), you have argued that reclamation is occurring which would disqualify the entire process from exclusion under 40 CFR 261.2(e)(1)(i).

At issue in this case are two operations. In the first operation, a spent material is used as an ingredient to make a product (TBCC), resulting in a residue. The second operation uses the

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residue from the first to make another product (fresh etchant), but the second operation may involve reclamation (although the IDEM has not made a formal determination on this point). If we assume reclamation occurs in the second operation, the question is whether a facility would be barred from claiming the use-as-ingredient exclusion because of the subsequent reclamation. The answer to this question depends on whether the operations are considered to be one industrial "process" (in which case the reclamation would presumably disqualify the facility from claiming the exclusion) or two sequential "processes" (in which case the reclamation in a subsequent process would not generally nullify the exclusion).

RCRA regulations, preambles, and past interpretations do not define how many (or how few) operations may be included in an industrial process. In EPA's experience, situations at different facilities vary so much that it is not possible to develop a general rule about whether operations should be considered one process or multiple processes. The Agency believes that any such rule would inevitably be too inflexible to address the many different types of industrial operations being conducted throughout the country. For this reason, we have historically left the determination of this question to States authorized to administer and enforce the RCRA program under section 3006, or to EPA Regions where the State is is not authorized. A uniform national interpretation would not be adequate to address the large variety of circumstances prevailing at different industrial facilities. States and Regions are more competent to evaluate the site-specific factors that must necessarily enter into this kind of decision.

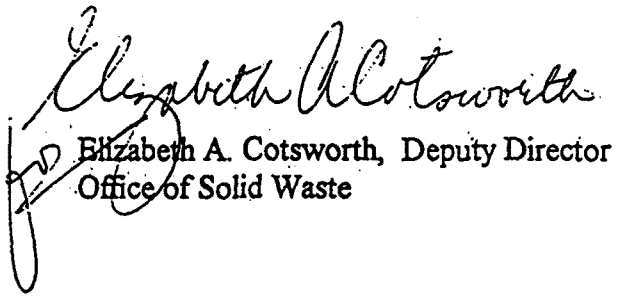
We have consulted with Region V after their meeting on June 25, 1996 with representatives from Phibrotech, the Illinois Environmental Protection Agency, and the IDEM. The Region and the States would like to thank Messrs. Jack Benheim and Tom Moran for taking the time to further discuss these issues with them. As you are aware, most of the issues discussed during the meeting had been evaluated before, but the discussions served to underscore the complexity of these regulatory determinations, particularly with respect to the Heritage operation. Follow-up discussions between Region V and the IDEM indicate that the IDEM remains committed to its original ruling on the Heritage process.

Based on our discussions with Region V and the State of Indiana, and a review of existing policy, we believe that Indiana's interpretation of 40 CFR 261.2(e)(1)(i) is not inconsistent with the language of this provision. For this reason, we will not request the State to revise its determination.

As you may be aware, EPA is currently engaged in an effort to change the RCRA regulations governing hazardous waste recycling. This effort has three goals. First, we want to clarify and simplify these regulations to make them more "user-friendly" for all concerned, while still fully protecting human health and the environment. We also want to remove disincentives that may lead industries to dispose of their wastes rather than reusing them. As part of this effort, we plan to reexamine and possibly change the current regulatory distinctions between "reuse" and "reclamation". The Agency hopes to propose these regulatory revisions in early 1997.

Thank you again for the time and attention you have devoted to this matter. These are important environmental issues, and we appreciate your concern. If you have any questions, please call me at 703-308-8895.

Sincerely yours,



Elizabeth A. Cotsworth, Deputy Director
Office of Solid Waste

Characteristics Of Hazardous Waste (Subpart C)

Mr. Jack L. Cooper, Director
Environmental Affairs
National Food Processors Association
1133 20th St. N.W.
Washington, D.C. 20036

Dear Mr. Cooper:

I am writing in response to your letter to me of July 30, 1980 and your visit to the Agency on July 25, 1980. You raised several issues in these communications which relate to the impact of the hazardous waste regulations (as promulgated in the Federal Register on May 19, 1980) on food processors.

Specifically, the food processors frequently use a dry-caustic peeling process which produces a waste which may, on occasion, exhibit the hazardous waste characteristic of corrosivity since its pH would equal or exceed 12.5. You further indicated that this waste is always neutralized to well below a pH of 12.5 and thus would not be a hazardous waste when it leaves the plant for final disposition. You also indicated that you feel such wastes, and the facilities generating and treating such wastes, should not be included in the RCRA Subtitle C program.

In re-evaluating the regulations and our intent to only control those hazardous wastes which if improperly managed may present a potential hazard to human health and the environment, it appears that some modification to the regulations may be warranted. The Agency disagrees, however, that the appropriate approach is to declare caustic food processing waste non-hazardous. To do so would be inconsistent with EPA's May 19, 1980 regulations which identify highly corrosive wastes (pH above 12.5 or below 2.5) as hazardous wastes. Such wastes can cause serious burns or seriously pollute surface waters. In the case of your industry, overflows and leaks resulting from improper operation could result in injuries to persons who might have access to the area. Improper management could also result in the release of toxic lists and fumes.

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In sum, we don't think it appropriate to exempt a waste as non-hazardous because it is usually adequately managed. Such of the Act. The structure of RCRA involves a determination first appropriate regulation, the Agency is directed to assure the public that management is safe. Unless regulations requiring, proper handling are imposed, the Agency and the public have no assurance that proper management is being achieved.

To make this same point another way, an interpretation such as the one you are requesting would allow a great majority of waste producers to seek exclusion from the program on the grounds that they manage their wastes properly.

On the other hand, the Agency agrees that imposition of some of the provisions of the May 18, 1980, regulations may be unnecessary for relatively simple neutralization facilities. A more appropriate approach might be to establish a special set of standards applicable to neutralizations to implement such an approach. We hope to make a decision on this regulations before November 19, 1980, the effective date of the May 19, 1980, regulations.

I would like to thank you for bringing this particular problem to our attention. Our goal is to promulgate a set of regulations which will protect human health and the environment from the improper management of hazardous waste, but yet not place an unnecessary burden on American industry. Please feel free to call Mr. Alfred Lindsey if you have any further questions. Mr. Lindsey can be reached at (202) 755-9185.

Sincerely yours,

Eckardt C. Beck
Assistant Administrator

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF SOLID WASTE

JUN 17 1981

OFFICE OF WATER
AND WASTE MANAGEMENT

Mr. M. J. Boris
American Steel Foundries
3761 Canal Street
East Chicago, IN 46312

Dear Mr. Boris:

I am writing in response to yor letter of May 11, 1981 requesting a ruling on whether the American Foundrymen's Society (AFS) Standard Test Procedure in which the container is handshaken twice daily by inverting it 15 times is an acceptable agitation procedure to employ when conducting the Extraction Procedure toxicity test [40 CFR 261.24].

The AFS method is not acceptable since it does not meet the definition of acceptable agitation; "...an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid". Specifically the AFS method is deficient in that during the 12 hours or more that the sample remains undisturbed, stratification is likely to take place.

The magnetic stirrer method you also asked about may however be used if, after application of the Structural Integrity Procedure, the waste material is a monolithic piece. By suspending the sample in a continuously stirred bath of extraction fluid, the objectives described in the aforementioned specification will be met.

I hope that this answers you question. If you have any additional questions, please feel free to give me a call at (202) 755-9187.

Sincerely,

David Friedman

David Friedman
Manager, Waste Analysis Program
Hazardous and Industrial Waste Division (WH-565)

JAN 10 1983

RE: WCBDF0345

MEMORANDUM

SUBJECT: Ignitable Solids Definition

FROM: John H. Skinner, Acting Director
Office of Solid Waste (WH-562)

TO: David A. Wagoner, Director
Air and Waste Management Division, Region VII

As you requested in your memo of December 15, I am writing to clarify the definition of an ignitable solid under 40 CFR 261.21 as it applies to materials such as titanium swarf.

As Gene Crumpler correctly advised Greg Weber of Region V, in order for a solid waste to be an ignitable waste it must be capable, under standard temperature and pressure, of both causing fires through friction, absorption of moisture or spontaneous chemical changes and burn so vigorously and persistently that it creates a hazard. Thus, if the titanium swarf is very difficult to ignite it would not be classified as a hazardous waste even though, once ignited, it may pose a hazard.

In order to remove the ambiguities inherent in such a definition, OSW is in the process of developing specific testing methods and hazardous waste definition thresholds for ignitable solids. However, such tests are not expected to be ready for proposal until FY 84.

If you have any comments or questions concerning the ignitable waste definition please give David Friedman or Florence Richardson a call at FTS 382-4770.

WH-565B:DFRIEDMAN:df:S248:382-4770:WSM:1-5-83 Disk DF:03:45

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

JANUARY 83

2. Question: A wastewater which is not identified or listed in 40 CFR Part 261 is placed in a surface impoundment for dewatering. A constituent of the wastewater is reactive when dry. Does the surface impoundment became subject to RCRA if it never dries out during its active life?

Answer: The surface impoundment becomes subject to RCRA when it dries out after receiving its final volume of waste. If the waste is immediately removed as it becomes reactive (dewatered), then the operator would be a generator for that waste. If the waste dries out first and becomes reactive, then the surface impoundment would be subject to the regulations.

9443. 02 (83)

Source: Fred Lindsey
Research: Irene Horner

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

FEBRUARY 83

5. Question: If a material is 80% solid and 20% water, can the PH be measured under 261.22(a)(1)?

Anwser: It is still testable if it contains free liquids (water). The aqueous phase of the proposed paint filter test could be used to determine if there are free liquids.

Source Karen Gale 9443.03(83)
Research: Florence Richardson

9443.1983(04)

JUL - 5 1983

Mr. B. H. Conlin
Komex Consultants Ltd.
#300, 1615-10th Avenue S.W.
Calgary, Alberta, Canada T3C 0J7

Dear Mr. Conlin:

I am writing to you in response to your letter of May 18, 1983, regarding practices and regulations for containment and disposal of solid wastes in the resource processing industry.

At the present time, waste gypsum produced as a by-product of processing phosphate rock is exempted by statute from regulation as a hazardous waste. The exemption, under Section 3001(b)(3)(A)(ii) of the Resource Conservation and Recovery Act of 1976 (RCRA), is in effect "until at least six months" after the date of submission of a report required under Section 8002(p) on "materials generated from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from uranium mining." EPA plans to submit the required report in October 1984.

The Agency is conducting two studies related to the phosphate industry. The first study, which focuses on the metals mining and processing industry, also includes sampling and analysis of phosphate industry solid wastes in Regions IV and X. A total of 77 waste samples (64 solid and slurry samples and 13 liquid samples) were collected and analyzed from the phosphate mining industry. Although most of these samples were collected from mining and beneficiating wastes, two samples were collected from gypsum waste--gypsum pond liquid and gypsum pond embankment. Analytical results indicate that metals concentrations in the gypsum pond liquid exceeded EP toxicity values for cadmium and chromium. Acetic acid extract from the gypsum pond embankment did not fail any of the EP toxicity criteria. The gypsum pond pond embankment sample, however, contained 5.4 picocuries/gram of Radium 226.

On December 18, 1978, EPA proposed hazardous waste regulations containing guidelines in the form of an advanced notice of proposed rulemaking concerning Radium 226. According to the advanced notice of proposed regulations, a waste would be considered hazardous when the total analysis for Radium 226 was equal to or greater than a concentration of 5 picocuries/gram for solids. To date EPA has not

WH-565A/Jim Antizzo/Room S-242/Phone: 382-4761/plk/6-24-83

promulgated this contemplated standard. If EPA does promulgate the standard at 5 picocuries/gram, the waste gypsum could be considered hazardous again, pending completion of the study and report to Congress.

In addition to this ongoing mining study, EPA has recently initiated another study focused specifically on waste gypsum from the phosphate processing industry. Initial sampling of wastes is scheduled to begin July 11, 1983. Currently, the EPA is negotiating with the Florida Institute of Phosphate Research (located in Bartow, Florida) to conduct the study as a joint effort.

At the present time, EPA is not regulating phosphate wastes as hazardous wastes. The State of Florida, however, has regulatory requirements for phosphate wastes. These requirements include groundwater monitoring of gypsum piles and will, in the near future, include groundwater monitoring of other phosphate waste disposal practices.

As you mentioned in your letter, wastes from the gas processing industry are frequently hazardous under EPA's hazardous waste characteristics (40 CFR 261). If wastes fail a characteristic or are listed as hazardous, the full standards for hazardous waste treatment, storage, or disposal facilities (40 CFR 264-265) apply. There are no special requirements for gas processing wastes.

You may obtain a copy of up-to-date regulations from the U.S. Government Printing Office at (202) 655-4000.

If you have any further questions, please contact Ms. Penelope Hansen of my staff at (202) 382-4761.

Sincerely,

John E. Skinner
Director
Office of Solid Waste (WH-562)

Enclosure

JUL 27 1983

RE: WCBNA3408

Mr. Leroy J. Wilder, Jr.
Ray-O-Vac
630 Forward Drive
Madison, WI 53711

Dear Mr. Wilder:

I am writing in response to your July 14, 1983 request for clarification of the Resource Conservation and Recovery Act (RCRA) hazardous waste identification regulations as they apply to waste batteries and cells.

As we discussed in our telephone conversation on July 7, 1983, most common batteries and cells rapidly degrade when placed in a landfill. Thus, when testing such products to determine if they exhibit the Extraction Procedure Toxicity characteristic (40 CFR 261.24) the batteries and cells should be cut up into small pieces (i.e., to pass 1 cm sieve). If, after such preparation, none of the concentrations listed in 40 CFR 261.24 Table 1 are exceeded the batteries are not hazardous wastes and may be disposed of in a sanitary landfill. Batteries that yield extracts exceeding one or more thresholds are hazardous wastes and must be disposed of in a RCRA permitted facility.

Certain batteries and cells, however, are manufactured in such a manner as to prevent disintegration after disposal. Such products may be tested without being cut up. At this time, we have not developed testing thresholds for identifying such abuse resistant products. Pending development of such tests you may evaluate the corrosion resistance of your products using a salt water solution. If after submersion for 1 month in a salt water solution no leakage occurs, the product can be considered to be corrosion resistant. If the package is also structurally resistant to crushing, it can be evaluated in the EP Toxicity test without being cut up.

I trust that this explanation assists you in evaluating your wastes. I would like to also bring to your attention the fact

that we have a toll free hotline (1-800-424-9346), if you ever need assistance with any aspect of the RCRA regulations.

Sincerely yours,

David Friedman
Manager
Waste Analysis Program

WH-565B/DFRIEDMAN:NA:S248:X24770:7/26/83:DISK:NA3408

9443.1984(03)

June 4, 1984

Tooele Army Depot

Matthew A. Straus, Acting Chief
Waste Identification Branch, (WH-562B)

Jon P. Yeagley, Chief
State Program Section (8AW-WM)

We have reviewed your submissions related to the Chemical Agents Munitions Disposal System facility. Our preliminary assessment of the properties of agents GB (isoproplyl methyl phosphonofluoridate) VX (Ethyl-S-diisopropyl aminoethyl methyl phosphonothidoate), and HD (Bis-2-chloroethyl sulfide) lead us to conclude that the wastes should be considered hazardous due to their reactive nature. While the wastes are not specifically listed at this time, we believe them to be reactive according to the definition of §261.23 (a)(4) -- namely, when mixed with water, they generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The gases of concern in each case are as follows: for GB, emissions of hydrogen fluoride which has a TLV of 3 ppm in air; for HD, emissions of hydrogen chloride which has a TLV of 5 ppm; and for VX, emissions of diethyl methyl phosphonate, bis-ethyl methyl phosphonic acid and bis-S-(diisopropyl amino ethyl) methyl phosphonodithiolate. In the case of VX, the emitted gases are indicated as toxic decomposition products that would be emitted upon addition of VX to water. (The reference for these anticipated emissions is the Army's field manual on military chemistry.) Sufficient quantities of any of these chemical agents, when mixed with water, would be expected to emit gases at levels of concern and, thus, exhibit the characteristic of reactivity. In addition, mustard gas could meet the criteria in §261.23(a)(5), due to emissions of sulfides.

With respect to our ultimate plans vis-a-vis these wastes, we do expect to develop listings for all three agents. These listings would probably be developed under the criteria of §261.11(a)(2) and result in the designation of the wastes as Acute Hazardous Waste. Unfortunately, other priorities and a general dearth of available information will hinder our efforts and may result in the passage of considerable time before these listings are finalized. We are not overly concerned about this delay, however, since the State's letter suggests that these wastes are being managed in a manner consistent with their extreme toxicity. In addition, as we have stated above, the wastes are currently regulated. Nevertheless, it would be useful to our efforts if your group or the State agency could submit information on the wastes and the corresponding treatment and disposal options under discussion.

This has been retyped from the original document.

Do not hesitate to call Ed Abrams (382-4775) of my staff if you require further information.

cc: Julia Bussey (T-2-2) Region IX

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RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

JULY 84

5. a. How does one perform the EP toxicity test on oily wastes? The waste in question does not pass through the filter and is immiscible in water.

   b. Is there another extraction procedure test for such wastes?

   a. The EP toxicity test is conducted using the filtrate from filtering a sample. Solid or oily material that do not pass through the filter are subject to the EP extraction and the resulting extract analyzed to determine if the waste is hazardous.

   b. There is a variation of the EP toxicity test specifically for oily wastes which is used in the delisting program. It is not regulatory, however, under 261.24. A copy of this procedure may be obtained for use in experiments from Todd Kimmell USEPA OSW by calling (202) 382-4795.

   Source: Dave Friedman
   Research: Ken Jennings

11 SEP 1984

MEMORANDUM

SUBJECT: Status of Blasting Caps as Reactive Wastes

FROM: John Skinner, Director
Office of Solid Waste (WH-562)

TO: David Wagoner, Director
Air and Waste Management Division
Region VII

This is in response to your recent memorandum requesting clarification of the definition of a reactive waste as it applies to out-dated blasting caps. According to 40 CFR 261.23, a waste which is capable of detonation or explosive reaction, if subjected to heat or a strong initiating force, is a reactive hazardous waste. Blasting caps clearly fall within that definition.

As you brought to our attention, Section 2.1.3 of "Test Methods for Evaluating Solid Waste" (SW-846) appears, however, to suggest otherwise. A note in the manual states that blasting caps in quantities of less than 1000 are not a hazardous waste. This is a mistake. SW-846 is a compilation of sampling and analytical methods that may be used to test for the presence of Appendix VII or VIII constituents. It is not, however, the basis on which the identification or listing of a particular material as a hazardous waste is made. Thus, Note 5 in Section 2.1.3 of SW-846, should be disregarded.

A package of revisions and updates to SW-846 is currently in preparation; as part of this update, Note 5 will be deleted to prevent future misunderstandings. We appreciate your bringing this problem to our attention. If you have any questions, please contact Florence Richardson of my staff. She can be reached at FTS 382-4801.

WH-562B/FRichardson/382-4801/9 Sept 1984/ 10 Sept 1984/ 11 Sept 1984/ Control No. OSW-086

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

AUGUST 84

9443.1984(06)

An aqueous waste containing small amounts of an organic compound flashes in a Pensky-Martens Closed Cup Tester. Is this waste RCRA ignitable or is it excluded from that definition because it "contains less than 24% alcohol?" The waste has no alcohol in it.

If an aqueous waste contains no alcohol, it is not excluded from the definition of ignitable as is wine or latex paint. Hence, if the flashpoint is less than 140°F, the aqueous waste is deemed ignitable. EPA is working on developing a test for such wastes to determine if they would sustain combustion or only flash in the Closed Cup Tester.

Source: Florence Richardson
Research: Denise Wright

I-5621/JSales/margaret/rm 5248/502-4//07/11-21-84
11:04:02

NOV 23 '84

Mr. Donald Dean
Environmental Manager
Imperial Manufacturing Company
Underwood Avenue
P.O. Box 280
Plattsburgh, N.Y. 12901

Dear Mr. Dean:

This letter responds to your inquiry of November 9, 1984, regarding the correct designation for waste ink and solvent mixtures generated from printing facilities.

First, waste inks containing solvents are not listed hazardous waste; however, these inks are considered hazardous wastes if they exhibit one or more of the characteristics of hazardous waste (i.e., ignitability, reactivity, EP toxicity and corrosivity). In your particular case, waste ink containing MEK, MIBK, toluene, xylene, and acetone will probably exhibit ignitability. Should this be the case, these wastes are deemed hazardous waste and, as such, should be designated as EPA Hazardous Waste Number D001.

Solvent mixtures from the cleaning of pumps, lines and tanks, as described in your letter, are not currently covered by the solvent listings in 40 CFR 261.31. Therefore, they are hazardous waste only if they also exhibit one or more of the characteristics of hazardous waste. Within the next few months, the Agency will propose to amend the listing to include certain solvent mixtures. Thus, many of these solvents will be brought under Subtitle C control.

If your waste management activities occur in a State that has been authorized under RCRA, then the State rules, rather than the Federal rules, apply.

We recommend that you consult with the appropriate States to determine whether they interpret their listing as covering solvent mixtures. Agency data indicate that New York State

interprets their listing as applying to solvent mixtures as well as single solvents. In addition, it is within the authorized State's discretion to determine the appropriate classification for wastes that are both listed and exhibit a characteristic.

Should you have questions, or require additional information, please contact Jacqueline Sales, of my staff, at (202) 382-4807.

Sincerely,

Eileen Claussen
Characterization and Assessment Division
Office of Solid Waste

DV 29 1984

9443.1984(09)

NL Baroid
NL Industries, Inc.
Mr. W. H. Yancey
P.O. Box 1675
Houston, TX 77251

Dear Mr. Yancey:

I am glad to clarify the issues of hazardous waste identification you raised in your letter dated November 15, 1984.

First, you asked if physically solid forms of sodium hydroxide and potassium hydroxide (granular or pellets) are currently regulated as RCRA corrosive hazardous waste. The answer is no. Title 40 CFR §261.22(a) defines corrosivity for aqueous solutions within given pH ranges and for liquids that corrode steel faster than a quarter of an inch per year under specified test conditions. The May 19, 1980, preamble, 45 FR 33109 states:

> "...there is no demonstrated need to address corrosive solids at this time. EPA will, however, continue to seek information on the dangers presented by these wastes and will consider specific regulatory measures if the need for more control becomes apparent."

At this time, the Agency is developing a test protocol to evaluate the leachability of solid-phase corrosives. Furthermore, the new RCRA amendments direct EPA to minimize effects of hazardous waste on human health and the environment. So you can see that the status of corrosive solids may be subject to change in the future.

Second, you wondered if products that contain preservatives ~~are~~ listed in 40 CFR §261.33(f) are subject to regulation as RCRA hazardous waste. In particular, you asked about potato starch that has been treated with formaldehyde. The comment after 40 CFR §261.33(d) explains that commercial chemical products are manufactured for commercial use and are commercially pure or technical grades or formulations in which the chemical is the sole active ingredient. The comment also says that a waste that contains a chemical listed in §§261.33(e) or (f) is only a RCRA waste if the waste is listed in §§261.31 or 261.32 or if the

waste is hazardous by characteristics identified in §§261.20 to 261.24.] The comment is in brackets and thus is not part of the regulations, but it conveys the intended meaning of the definition of commercial chemical products. Thus, the potato starch, when a waste whether it is used or not, does not contain a commercial chemical product, since the formaldehyde has already been used in the mixture as a preservative. Furthermore, there are no listed potato starch waste streams. You should determine whether or not the potato starch meets the criteria for ignitability, corrosivity, reactivity, or EP toxicity. In any case, the starch is not a hazardous waste by the mixture rule.

Third, as you know, 40 CFR §261.23(a)(5) does not specify the amount of cyanides or sulfides that would identify a waste as reactive. Presently, EPA is in the process of developing test protocols to quantify the reactive characteristic for cyanides and sulfides. In the meantime, the enclosed regulatory interpretive letter, RIL #2, outlines the Agency's suggested guidelines. Below 10 ppm, the waste will not be considered reactive, and above 200 ppm, it will be considered reactive unless the generator can show why it is not. Between 10 and 200 ppm, the decision will be based on the potential releasibility of H_2S or HCN on a case-by-case basis.

All but about seven States and three territories have programs that operate in lieu of the Federal RCRA program, and eight of these programs have received full authorization. When a State has been granted authority to operate the RCRA program, you are subject to the State regulations which may be slightly different. The RCRA/Superfund Hotline at (800)424-9346 can send you a copy of the State hazardous waste agency addresses and phone numbers if you need it.

If you wish to discuss these questions further, please do not hesitate to call me at (202)382-4804.

Sincerely yours,

Irene S. Horner
Studies and Methods Branch

Attachment

30 NOV 1984

...ocument vc/ma/em S248/JB2-4770/11-29-84/Disk SMMA:04:04

MEMORANDUM

SUBJECT: Classification of Small Arms Ammunition With Respect to Reactivity

FROM: John H. Skinner, Director
Office of Solid Waste (WH-562)

TO: David Wagoner, Director
Air & Waste Management Division
Region VIII

Recently, a question arose as to the status under RCRA of off-specification small arms ammunition (ball or sporting ammunition of calibers up to and including 0.50) intended for disposal. The issue concerned whether such wastes are "reactive wastes" within the meaning of 40 CFR 261.23(a)(6) and, therefore, subject to RCRA hazardous waste requirements. Because the ammunition contains an ignition source that may be shock and heat sensitive and is designed to generate high pressure during use, it had been our opinion that it is probably "reactive." However, on the basis of information that was received from the Remington Arms Company and the Army, we now conclude that such materials are not "reactive" within the meaning of 40 CFR 261.23 (a)(6).

Section 261.23 (a)(6) of Title 40 provides that a solid waste which is "capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement" is "reactive." As discussed in the May 19, 1980, preamble to 40 CFR 261.23, shock and thermal instability are important elements of this definition. While presently there is no Agency guidance regarding these criteria, the Remington Arms Company of Independence, Missouri, and the U.S. Army have provided information which addresses both of these factors.

Remington Arms Company submitted details on the effects of heat and impact to small arms ammunition. There was no explosion when a box of ammunition was set afire. Small arms, when subjected to the SAAMI (Sporting Arms and Ammunition Manufacturer's Institute) Impact Test, showed no evidence of mass propagation or explosion.

The Department of the Army has a rigorous safety and hazard testing program on all munition items. The tests, which include drop tests from 5, 7, and 40 feet to simulate handling errors and "heating under confinement," 160°F for 48 hours, also showed no evidence of detonation or explosion with respect to small arms ammunition. The tests were performed on both the individual munition and a package containing a prescribed number of items.

As noted above, we feel that results from these tests show that off-specification small caliber ammunition up to and including 0.50 is not "reactive" within the meaning of 40 CFR §261.23 (a)(6). We, therefore, believe that the disposal of such ammunition is not subject to Subtitle C hazardous waste requirements.

We appreciate your cooperation. If you have any questions regarding the matter, please call David Friedman or Florence Richardson at FTS 382-4770.

cc: Air & Waste Management Divisions Directors,
Regions I-VI and VIII-X

FEB 21 1985

MH-3029/11011/1/87/1 ...

Mr. R. B. Morris, Jr.
IBM
44 South Broadway
White Plains, NY 10601-4495

Dear Mr. Morris:

This is in response to your letter of January 7, 1985, which questions the proper management of excavated construction soil that contains detectable quantities of volatile organic compounds. RCRA regulates the characteristic wastes discussed in 40 CFR Subpart C and listed wastes designated in 40 CFR Subpart D.

To qualify as a characteristic waste, the soil would have to be ignitable (§261.21(a)(2)), or contain a liquid phase that is corrosive (§261.22), or exhibit any of the reactivity criteria (§261.23), or be above the EP toxic levels (§261.24).

In order to be a listed waste, the soil would have to contain known listed waste that are:

1) commercially unused §261.33(e) or (f) chemicals or off-specification species, formulations containing them as sole active ingredients, and container residues or spilled material of the above;

2) specific industrial waste streams specified in §261.32; or

3) non-specific waste streams listed in §261.31.

As you stated, in many cases, the exact source of the volatile organics cannot be determined.

Under the Comprehensive Environmental Response, Compensation, and Liability Act, hazardous substances are currently only those specified under the Clean Water Act, the Clean Air Act, the Toxic Substances Control Act, and RCRA listed and characteristic waste. Therefore, disposal of soil contaminated with hazardous substances must follow CERCLA guidance also.

You should be in touch with the States because they may regulate soils that contain volatile organic compounds in a different manner. Please feel free to contact me or Alan Corson of my staff again if you have any other questions.

Cordially yours,

Eileen B. Claussen
Division Director
Characterization and Assessment Division

cc Patrick Aurrichio

9443.1985(02)

FEB 26 1985

Mr. Kevin J. Walter
Bureau of Technical Services
Division of Environmental Enforcement
Department of Environmental Conservation
State of New York
50 Wolf Road
Albany, New York 12233-0001

Dear Mr. Walter:

I am writing in response to your recent letter requesting clarification of the definition of the characteristic of ignitability for hazardous wastes.

Your understanding that the words "it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume" were intended to exclude alcoholic beverages, such as wine, and non-liquid materials is correct. However, while the Agency's intent was that this exemption apply to potable beverages only, because the term "alcohol" was used instead of "ethanol," all aqueous wastes which are ignitable only because they contain alcohols (here using the term alcohol to mean any chemical containing the hydroxyl [-OH] functional group) are excluded from regulation.

While the Agency completes the process of officially adopting a method for identifying "free liquids," for use in the land disposal regulations, it is our current practice to employ Method 9095 (see "Test Methods for Evaluating Solid Waste, SW-846") for such purposes. Any material passing through the paint filter is deemed to be a liquid.

With respect to what constitutes an "aqueous solution," such a solution is one in which water is the primary component. This means that water constitutes at least 50 percent by weight of the sample. Although, we have not officially approved any test methods for determining a waste's water content, any competent laboratory should be able to make such a determination using standard techniques (e.g., Karl Fisher titration, GC).

We share your concern over the ambiguities in the current ignitability definition and have a program underway to correct the characteristic's shortcomings. Specifically, changes are under development to replace the alcoholic solution exclusion

with a generic exclusion for those wastes which, while possessing a flash point below 60°C, neither continue to burn nor, if they do burn, release enough energy to cause a major fire. In addition, steps are being taken to expand the ignitability characteristic to include wastes which are physical solids. Both of these changes will involve proposal and promulgation of specific definitional test methods and thresholds.

I hope this information clears up any questions you may have about the ignitability characteristic. If you have any further questions concerning any of the hazardous waste characteristics, please contact David Friedman, of my staff, at 202-382-4770.

Sincerely yours,

JS

John H. Skinner
Director
Office of Solid Waste

bcc: G. A. Lucero, WH-527
A. Corson
David Friedman
Regional Solid Waste Branch Chiefs
Hotline

July 16, 1985

Mr. Terry L. Thoem
Manager, Environmental Conservation
Conoco Incorporated
P.O. Box 2197
Houston, Texas 77252

Dear Mr. Thoem:

I am writing to clarify several aspects of the sulfide reactivity characteristic that you asked about in your letter of June 24, 1985.

At present, there is no approved test method for determining whether a waste exhibits the characteristic of reactivity. I have enclosed a draft of a test method for determining Total Available Sulfide. Work currently being done on the agitation and waste introduction steps may result in significant changes in the subsequent proposed test. However, pending the conclusion of our investigations, we recommend, and will accept, use of this draft procedure. While threshold concentrations have not yet been promulgated by the Agency, we have adopted 500 mg/kg Total Available Sulfide as an interim action level. We consider any waste that yields sulfide values at or above the action level, using the draft procedure, to be hazardous.

The 500 mg/Kg action threshold was arrived at by considering a scenario in which a truckload of waste is discharged into a pit containing (non-hazardous) acidic waste. As a result of the reaction of the waste with the acid, a rapid, high level release of toxic gas ensues. The objective of the characteristic is to identify those wastes which, if such an activity were to take place, pose a hazard to those persons in the general vicinity of the disposal site. While we have considered dispersion in arriving at the action threshold, the specific dispersion model that will be used in the upcoming proposal is still under development.

Ground water monitoring of all wastewater treatment lagoons containing hazardous wastes, is required including those containing only reactive wastes. The only exemption from ground water monitoring that is defined by the RCRA regulations is in the case of neutralization ponds receiving wastes hazardous only by reason of corrosivity (§265.90(e)).

This monitoring is necessary because the Agency is not aware of any mechanism which can assure that such wastes will not also have toxic chemicals which pose a hazard to ground water. The

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fact that a waste is not listed or does not exhibit the characteristic of Extraction Procedure Toxicity does not insure the absence of leachable toxic species in the waste.

If you have further questions concerning the reactivity characteristic please contact David Friedman (202/382-4770) of the Methods Program. For information on the regulatory requirements pertaining to ground water monitoring, contact Robert April (202/475-8860) in the Ground Water Program.

Sincerely yours,

John H. Skinner
Director
Office of Solid Waste

bcc: Claussen
Lehman
Weddle
Corson
Shuster
Friedman
April
Hotline
Region VI

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UNITED S ES ENVIRONMENTAL PRC

JUL 22 1985

MEMORANDUM

SUBJECT: Regulation Interpretation for Pesticide Applicator Washing Rinse Water

FROM: John H. Skinner, Director
Office of Solid Waste (WH-562A)

TO: William Hathaway, Acting Director
Air and Waste Management Division (6AW)
Region VI

This is in response to the memorandum from Allyn Davis dated April 22, 1985, regarding the regulatory status of washwaters that are generated by washing the exterior of a pesticide aerial applicator's airplane. As we stated in a previous memorandum to Region VII (dated June 16, 1982), the airplane washing rinsewater is a hazardous waste via the mixture rule (§261.3(c)) if the pesticide residue on the aircraft is listed in 40 CFR 261.33(e) or (f) (see attachment). This regulatory interpretation has created some concern, especially regarding the excessive impacts the hazardous waste rules will have on pesticide applicators and regulatory agencies. Consequently, we have been asked to reconsider our position on this issue.

Upon reconsideration, we now believe that we have misinterpreted the rules and that the airplane washing rinsewater is not hazardous via the mixture rule. In particular, the mixture rule states that when a hazardous waste is mixed with a non-hazardous waste, the entire mixture is hazardous, unless the waste does not exhibit any of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, and extraction procedure (EP) toxicity) or, in the case of a listed waste, the mixed waste is delisted pursuant to 40 CFR 260.20 and 260.22. In the case of the airplane washing rinsewater, the mixture would have to be one of water and commercial chemical product--namely, the pesticide. The Agency does not believe that the pesticide residue left on the aircraft is a discarded commercial chemical product. The residue does not qualify as material discarded or intended to be discarded. See generally 45 Federal Register 33115, May 19, 1980. In

CONCURRENCES

OL	WH-562B	WH-562B	WH562B	LE-132S	OGC	TS-769-C	TS-766C
SURNAME	Fribush	Shaw	Clay	M Brennan	Heard	Kruger	Setzer
DATE	5/8/85	5/10/85	5/13/85	7/12/85	7/15/85	7/17/85	7/17/85

EPA Form 1320-1 (12-70) See Comments OFFICIAL FILE COPY

*U.S. GPO : 1985-467-853

listing commercial chemical products, EPA intended to cover those products which, for various reasons, are thrown away. Id. The Agency did not intend to cover those cases, as here, when the chemical is released into the environment as a result of use. Unless we take such a position, one could argue that the pesticide that is sprayed that does not fall directly on the crop (but falls on the ground next to the crop) would be disposal of an unused commercial chemical product; such an interpretation is a distortion of the commercial chemical product rule.

Consequently, we are withdrawing our previous interpretation that airplane washing rinsewater is a hazardous waste via the mixture rule.1/ Rather, this rinsewater would be defined as hazardous only if it exhibits one or more of the characteristics identified in Subpart C of Part 261.

Should you have any further questions concerning this matter, please contact Matthew A. Straus of my staff on (202) 475-8551.

cc: Air & Water Management Division Directors (I to V and VII to X)
Air & Waste Management Branch Chief (I-X)
S. Schatzow
P. Gray
R. Ehardt
B. Weddle
J. Lehman

1/ It should be noted that the remainder of the regulatory interpretations discussed in the June 16, 1982 memorandum are still appropriate and should be considered valid.

WH-562B/HFRIBUSH/ecm/475-8551/7-8-85 Disk HF#1-32

9443.1985(07)

September 18, 1985

Mr. John Polich, P.E.
Gabriel and Associates
1814 North Marshfield
Chicago, Illinois 60622

Dear Mr. Polich:

I am responding to your letter of July 18, 1985 requesting clarification of the RCRA permit requirements that apply to a specific wastewater stream, which is a mixture of methanol and water, and which possesses the following characteristics:

Volume (30,000-50,000 gpd)
5-day BOD (25,000 mg/L)
Suspended solids (300 mg/L)
Methanol (20,000 mg/L)

This wastewater stream is a listed RCRA hazardous waste (EPA No. F003) under 40 CFR §261.21. Since the waste is listed for the characteristic of ignitability and because it is a mixture of a solid and hazardous waste (§261.3(a)(2)(iii)), it can only be exempted from all RCRA requirements if you can demonstrate that the waste is not ignitable. To make this demonstration, you must follow the procedures in §261.21 using a representative sample of the wastewater stream. If your waste is not ignitable, as a result of analysis according to these test methods, you should notify Mr. Horst Witschonke, Chief of the Illinois RCRA Unit, U.S EPA Region V at (312) 886-0987. He will evaluate the test data and consider exempting the waste from RCRA regulations.

Another option is to seek approval from the local POTW, which has an NPDES permit, and which meets all the other requirements of 40 CFR §270.60(c) for a RCRA permit-by-rule, to accept your hazardous waste. The POTW could allow you to pipe the wastewater stream directly into a sewer, pipe, or other similar conveyance at the point of generation, or to discharge the waste at the POTW. In the latter case, the hazardous waste must continue to be manifested and transported according to the RCRA requirements of 40 CFR Part 262.

Finally, you should be aware of a new RCRA requirement (Section 3005(h)) mandated by the Hazardous and Solid Waste Amendments of 1984 requiring the owner or operator of an on-site

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RCRA facility to certify that he has a program in place to reduce the volume or quantity and toxicity of hazardous waste generated. (See 50 FR 28733-34, July 15, 1985.) To comply with this requirement, I recommend that you consider reclaiming or recycling the spent methanol in the wastewater (see 50 FR 616-668, January 4, 1985 for the definition of hazardous waste recycling activities).

If you have any additional questions on these permitting issues, please call Nancy Pomerlean at (202) 382-4500.

Sincerely,

Peter Guerrero, Chief
Permits Branch

cc: Art Glazer
Bob Scarberry (WH-562B)
Horst Witschonke, Region V

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RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

SEPTEMBER 85

EP Toxicity for Oily Wastes

1. With regard to the EP toxicity test specified in §261.24, there was a method 1330 for oily wastes proposed to be added to SW-846, "Test Methods for Evaluating Solid Wastes," which appeared in the October 1, 1984 Federal Register (49 FR 38804). At what oil concentration should one use this modified EP toxicity test for oily wastes?

   Method 1330 "Oily Waste Extraction Procedure" was developed for wastes containing oil or grease in concentrations of 1% or greater. This method has been used by EPA for generators petitioning EPA to exclude their oily hazardous wastes from the hazardous waste listings (i.e., "delisting").

   Currently, when determining if a non-listed waste is hazardous with respect to EP toxicity, a generator must follow the procedure specified in 40 CFR 261 Appendix II, not method 1330. Method 1330 should be used only when requested by EPA for the purpose of delisting a hazardous waste.

   Source: Jim Poppiti (202) 382-4665

9443.1985(09)

OCT 3 1985

Mr. Donald A. Robbins
Department of Environmental Sciences
ASARCO Incorporated
3422 South 700 West
Salt Lake City, Utah 84119-4191

Dear Mr. Robbins:

Thank you for your recent letter and suggestions on approaches to the difficult problem of regulating the management of those mining wastes which pose a hazard if improperly managed. We share your concerns both with respect to the suitability of using the Toxicity Characteristic Leaching Procedure (TCLP) to identify which mining wastes warrant RCRA regulatory control and the need for tailored management standards for hazardous mining wastes.

The TCLP was developed primarily to simulate the leachability of an industrial waste co-disposed with sanitary refuse or other putrescible materials. Mining wastes, because of the relatively large volumes of material involved, are not likely to encounter such disposal conditions even if not regulated. However, although mining wastes are generally not acidic, many mining wastes contain pyritic minerals which generate an acidic leachate upon exposure to air. Thus, the acidic environment modeled by the EP/TCLP may be appropriate for mining wastes even if the model environment used to develop the TCLP is not. In fact, the leachate generated by mining wastes can often be more acidic than the refuse derived leachate. Thus, a different leach procedure (which, for some mining wastes, could be more aggressive than the TCLP) might be appropriate.

No decision has yet been made as to what type of test procedure to use in identifying which mining wastes require regulation under Subtitle C of RCRA. A decision tree process is one approach that is being considered. Any such decision tree will require a method for determining the waste's acid generation potential. While we do not presently have any work ongoing to develop test methods for determining a waste's acid generating potential, we welcome your thoughts on this problem. We would also be willing to work with you and other interested parties in a cooperative effort to develop such a test.

As to your request for tailored management standards, we agree with the need to develop tailored management standards for mining wastes before subjecting them to Subtitle C control and will indicate same in the 1986 Report to Congress.

I appreciate ASARCO's offer of assistance in developing protocols to assess the leaching potential of mining wastes. I would suggest that you contact Alan Corson or David Friedman (202/382-4770) to follow up on developing a cooperative program in this area.

Sincerely yours,

Marcia E. Williams
Director
Office of Solid Waste

bcc: E. Claussen
A. Corson
D. Friedman
J. Lehman
W. Porter
T. Kimmell

OCT 21 1985

Mr. Robert B. Carroll
P.O. Box 442
Laramie, Wyoming 82070

Dear Mr. Carroll:

I am writing in response to your petition requesting a change in the extraction medium employed in the Extraction Procedure (EP) from mild acetic acid to the tetra sodium salt of diethylene triamine pentaacetic acid (DTPA). We apologize for the delay in responding to your petition, but your original letter was lost.

The EP is designed to model waste leachability under a specified mismanagement scenario. This scenario assumes disposal of the waste with municipal refuse. The Resource Conservation and Recovery Act charges EPA with identifying, as hazardous, those wastes which may pose a danger to human health if mismanaged. The codisposal scenario was chosen because we believe that it accurately represents a reasonably aggressive mismanagement scenario (i.e., it is unlikely that wastes which are not regulated as hazardous will be exposed to leaching conditions more aggressive than those modelled by this scenario). While the EP is an accurate simulation of this disposal environment, it is possible that oil shale management constitutes a more aggressive leaching situation than the codisposal scenario. How poorly the EP procedure simulates the leachability of the oil shale waste under commonly occurring oil shale mismanagement appears to be the question?

In your petition you cite the study by Esmaili, et.al., to show that the EP "does not work for retorted oil shale waste." While DTPA may, admittedly, be a more aggressive extraction medium than the mild acetic acid employed in the EP, we are not aware of any data which indicates that DTPA more closely simulate "real world" leachate generation than the EP does. The fact that DTPA is more aggressive does not, in and of itself, make it more accurate.

Since the EP does not model the specific environment encountered during the disposal of oil shale waste, it may fail to identify such a disposal situation as hazardous. The RCRA listing process could be used, however, to bring such management under regulatory control, if the waste can be shown to present a significant danger to human health or the environment. Site and waste specific leaching procedures can be used in making such a demonstration. If you have specific data with which we can assess the accuracy of this procedure or other candidate leaching procedures under the disposal conditions encountered during oil shale management, it might help speed up the development of such procedures. Since, in the case of petitions, the burden of proving the value of a proposed test falls on the petitioners, unless we receive additional data to support the need for the change you have requested (e.g., a comparison between actual leachate from retorted oil shale waste disposal facilities and EP and DTPA leaching data) we will not be able to proceed any further with the petitions. You had also requested that we publish your petition in the Federal Register. It is our policy only to publish a notice of receipt of petitions and not the complete petition. We anticipate publishing such a notice in the near future. If you would like to discuss the specific information needed to proceed with this petition, please contact David Friedman, of my staff (202-382-4770).

Sincerely yours,

Original Signed By
Marcia E. Williams

Marcia E. Williams
Director
Office of Solid Waste

Enclosure

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

NOVEMBER 85

A. RCRA

1. Solvent Mixture Rule

A product contains two active ingredients, toluene and benzene. This unused product is spilled on the ground. How is the spill and spill residue regulated under RCRA? Will the proposed solvent mixture rule in the April 30, 1985 Federal Register (50 FR 18378) affect this?

Currently, if a product with more than one active ingredient is spilled, it will not be classified as a "P" or "U" spill residue per §261.33 since the product contains more than one active ingredient. The proposed solvent mixture rule (50 FR 18378) does not change the answer since the proposed rule only addresses spent solvent mixtures.

If the soil mixed with the spilled product meets a characteristic of hazardous waste in Part 261 Subpart C, then the soil is a RCRA waste. If the soil mixture does not meet a characteristic of hazardous waste, RCRA is not applicable. CERCLA reporting may be required if the reportable quantity is exceeded since benzene and toluene are hazardous substances.

Source: Jackie Sales (202) 382-4770
Steve Hirsch (202) 382-7703

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1986(02)

JAN 17 1986

Mr. Jack Corpuz
Indiana State Board of Health
1330 West Michigan St.
Indianapolis, IN 46206

Dear Mr. Corpuz:

This is a follow up to our conversation of January 14, 1986 concerning spent iron sponge. A spent iron sponge material which evolves more than 500 mg/kg H_2S is considered reactive by our current reactivity method. The Department of Transportation (DOT) requires a ten day period of exposure to the atmosphere as a stabilization time prior to shipment (40 CFR 173.174). The facility performing this stabilization requires a permit from the EPA to operate (40 CFR 270.10), and if they can show that the waste is nonreactive after treatment, then the waste's disposal can be regulated as a non-reactive material.

Enclosed is a copy of an iron sponge report which may be of interest to you. If you have any further questions, please give me a call (202) 475-6722.

Sincerely yours,

Gail Ann Hansen

Gail Ann Hansen
Environmental Health Scientist
Methods Program (WH-562B)

Enclosure

JAN 22 1986

9443.1986(04)

Mr. Randall F. Andrews
Industrial and Agricultural Chemicals, Inc.
Route 2
Box 521-C
Red Springs, N.C. 28377

Dear Mr. Andrews:

This is in response to your letter of December 27, 1985, concerning the regulatory status of the copper plating solution that you receive at your plant site. As I understand your situation, you obtain from a copper plating operation a copper sulfate bath (which exhibits the characteristic of corrosivity) at your plant site and react it with a chelating agent to produce a material that is registered with the North Carolina Department of Agriculture as a commercial fertilizer. This material no longer exhibits the corrosivity characteristic. This material is then sold to farmers for use as a fertilizer or is sold to fertilizer companies for inclusion into fertilizer for resale.

Under this scenario, the copper sulfate bath that you receive at your plant site is a solid and hazardous waste and is subject to the transportation and storage requirements under the hazardous waste regulations. The material that is produced at your plant site (i.e., the commercial fertilizer), however, is no longer subject to regulation under the hazardous waste rules and may be managed as such. The basis for this decision is as follows: On January 4, 1985, EPA promulgated its final rules which deal with the question of which materials are solid and hazardous wastes when they are recycled. Among other things, these rules state that all hazardous secondary materials that are placed on the land for benefical use or incorporated into products (referred to as waste-derived products) that are placed on the land for benefical use are solid and hazardous wastes. (See enclosed copy of regulations.) In the Agency's view, these practices are virually the equivalent of unsupervised land disposal, a situation RCRA is designed to prevent. The many damage incidents resulting from wastes being placed on the land for benefical use bear out the Agency's concern. This type of recycling activity has also

been a particular concern of Congress. In particular, in a number of Congressional reports, they describe various damage incidents involving wastes that are placed on the land for benefical use. These reports reflect not only Congress' concern but its intent that EPA regulate this type of activity. Therefore, we believe that this type of recycling activity constitues waste management and need be subject to regulatory control.

By asserting jurisdiction over waste-derived products that are placed on the land, we are also asserting jurisdication (and regulating) the materials that go into these products, provided these materials are hazardous (i.e., exhibit one or more of the hazardous waste characteristics or are specifically listed). Therefore, since the copper plating solution is corrosive, it is subject to regulation. More specifically, the generator and transporter of this material is subject to the appropriate generator and transporter standards, including the hazardous waste manifest, while you (being the recycler) would be subject to the appropriate storage standards. (See 40 CFR 261.6(b) and (c) for specific regulatory requirements.) As indicated earlier, however, the material that is produced at your facility -- the commerical fertilizer -- is no longer subject to regulation since this material is no longer defined as hazardous.

Since this regulation has gone through formal rulemaking, your only alternative (at this time) is to submit a rulemaking petition under 40 CFR Part 260.20 (See enclosure for specific information requirements). Please feel free to give me a call if I can be of any further assistance; my telephone number is (202) 475-8551.

Sincerely yours,

Matthew A. Straus
Chief
Waste Identification Branch (WH-562B)

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

JANUARY 86

1. Spent Solvent Mixtures

In the December 31, 1985, Federal Register (50 FR 53315), EPA amended the listing of hazardous wastes in §261.31 to include certain spent solvent mixtures. In this final rule, spent solvent listings F001, F002, F004, and F005 were redefined to include mixtures containing ten percent or more total listed solvent (by volume). However, the ten percent threshold for solvent mixtures was not applied to the F003 solvents listed solely for ignitability because the Agency determined that these solvents may not be ignitable at such low concentrations. Additionally the Agency did not remove these ignitable spent solvents from the list of hazardous waste since the solvents have not been evaluated for their toxicity. How then are mixtures of ignitable solvents regulated?

If a spent, non-halogenated solvent has been listed only for showing the ignitability characteristic (i.e., listed as F003), then mixtures or blends of such solvents will remain listed as F003 wastes as long as the mixture or blend consists only of F003 listed solvents. For example, a blend of 80% ethyl acetate and 20% xylene would be classified as F003 while a blend of 80% ethyl acetate and 20% petroleum solvents would not be F003. However, the ethyl acetate and petroleum solvent would probably exhibit the ignitability characteristic and be classified as D001. Finally if a solvent blend consists of a solvent listed under F003 plus 10% or more of any solvent listed under F001, F002, F004, F005, then the resultant spent mixture will be listed as F003 and the other spent solvents (i.e., F001, F002, F004, or F005) respectively.

Source: Jacqui Sales (202) 382-4807

MAR 12 1986

Paul Agid
Dames & Moore
155 N.E. 100th Street
Suite 500
Seattle, Washington 98125

Dear Mr. Agid:

In our telephone conversation of March 11, 1986, we discussed the detection limit for the EP leachate concentration of selenium (<0.2 ppm) cited in the delisting petition (#620) filed for the residual waste/contaminated soil pit at the Boeing Commercial Airplane Company - Fabrication Division facility in Auburn, Washington. I indicated that, if the detection limit was used as a maximum EP leachate value in the VHS ground water model analysis, the predicted compliance point concentration would exceed the Agency's regulatory standard of 0.01 ppm. Further analysis is necessary in order to produce lower detection limits, e.g. <0.1 ppm, that would not produce a negative VHS finding. It should be possible, if the samples are archived, to re-test the existing samples using a method permitting finer detection limits. Otherwise, additional representative samples must be tested to achieve lower detection limits for selenium.

I have recently assumed responsibility for the review of Boeing's petition. Please forward this data to me as soon as possible, so that the timely review of the petition may be assured. If you have any questions, please call me at (202) 382-4783.

Sincerely,

Scott J. Maid
Environmental Protection Specialist
Office of Solid Waste (WH-562B)

9443.1986(09)

APR 30 1986

Mr. Ritchey Vaughn
Quicksilver Products, Inc.
200 Valley Drive, Suite 1
Brisbane, California 94005

Dear Mr. Vaughn:

I am writing in response to your request for a definitive opinion on whether discarded fluorescent and mercury vapor lamps would be classified as a hazardous waste under Section 261.24 of the Resource Conservation and Recovery Act (RCRA) regulations.

With only the data you submitted, it is not possible for me to give you a definitive answer to your question. For example, using the data presented on the GE MVR1000/VBU lamp as a worst case, the amount of mercury that is potentially available is 223 mg/kg of waste. If all the mercury was extracted into the Extraction Procedure (EP) extract during the test, this would yield an extract concentration of 11.3 mg/l. However, mercury is a relatively inert metal, with respect to reactivity toward nonoxidizing acids such as the acetic acid used as the extraction medium in the EP. In addition, while mercury has a relatively high solubility in water (as compared to most metals), it solubility is only .02 mg/l which is substantially below the regulatory threshold of 0.2 mg/l.

While I do not believe that either fluorescent or mercury vapor lamps would be hazardous waste under the RCRA regulations, actual EP testing would have to be conducted before any definite conclusion could be drawn. You should keep in mind, however, that RCRA is a State administered program in those States that have applied for and received authorization. In such States it is the State program which must be adhered to. Some States have more stringent regulations than those of the Federal program. Thus, it is possible that a State may elect to regulate a waste as a hazardous waste based on its total mercury content and not on leachable mercury. California may be one such State. I recommend you contact the California Department of Health Services for State-specified regulations.

If you have any further questions, please feel free to call me at (202) 382-4770 or you may call the RCRA/Superfund Hotline at (800) 424-9346.

Sincerely yours,

David Friedman
Manager
Methods Program

bcc: E. Claussen
A. Corson
S. Weil
M. Strauss
K. Conners
Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1986(10)

MAY - 5 1986

Mr. Dave Alff
Analytical Testing and
Consulting Services
1947 Brook Lane
Jamison, Pennsylvania 18929

Dear Mr. Alff:

This letter is to confirm our conversations regarding your intent to market equipment used to run the Toxicity Characteristic Leaching Procedure (TCLP). As we discussed, your designs for the rotary apparatus indicate that the device meets the requirement for end-over-end agitation at approximately 30 rpm. I will be adding your device to the list of suitable rotary agitation equipment.

You also presented designs for a zero-headspace extractor (ZHE). Unfortunately, it is not possible to make a decision regarding suitability without data comparing the performance of your device to the other equipment. To reduce potential variability, it is necessary to insure that all devices are capabable of producing similar results.

As I suggested, you should consider evaluating your device for comparability in two steps. First, to insure that you are in the right ballpark, you should initiate experimental work to determine recoveries of spiked volatiles from water (or from TCLP extraction fluid) that has been run through the ZHE. We have done this work through one of our contractors with the other two ZHE devices, and comparable results would provide evidence that your ZHE should be suitable. Please call Dr. David Taylor of S-Cubed at (619) 587-8369 for information regarding identity of the volatiles we used, the spike levels, the spiking method, and the expected recoveries. I have alerted Dr. Taylor to expect your call.

Assuming that your recoveries are acceptable, testing of actual wastes, and comparison to results obtained with the other ZHE devices, would be the next step. Since you understandably wish to avoid having to buy other devices in order to make these comparisons, participation in our collaborative study, also being managed by S-Cubed, would be advisable. Please contact Dr. Taylor if you wish to participate.

Another alternative would be for you to initiate comparative work through a laboratory that has already obtained these devices. This alternative has several distinct advantages. For one, it would eliminate several variables that always exist in collaborative studies, such as analytical variability. A more distinct advantage to you would be time. You indicated that you wished for your ZHE to be listed with the other ZHE devices when the proposed TCLP becomes published in the third edition of SW-846 (our solid waste testing manual), even if it was listed with the caveat that it was still undergoing evaluation. I have talked this over with my management, and the decision was made that the manual should only indicate that equipment which has been shown to be acceptable. For time reasons then, you may wish to elect this other alternative. Of course if you choose this alternative you are still welcome to participate in our collaborative effort.

The time factor may be the deciding factor for you since we will have to make a decision on equivalency by the end of June to include your equipment in the 3rd edition of SW-846. I recognize that this leaves you with less than two months to initiate and complete the necessary comparative work. If you choose this route, however, I would be glad to provide you with more assistance.

I am sorry for having to present you with these hard choices. You have obviously put a lot of effort into your development work, and your design seems feasible. I wish you had contacted me much sooner with your intent. We could have probably avoided the time factor. Good luck and please call me at (202)382-4795 if I can be of more help.

Sincerely,

Todd A. Kimmell
Environmental Scientist
Studies and Methods Branch (WH-562B)

cc: David Friedman (OSW)
David Taylor (S-Cubed)

MAY 12 1986

Mr. William R. Blackburn
Travenol Laboratories, Inc.
Deerfield, Illinois 60015

Dear Mr. Blackburn:

This is in response to the letters you have submitted to the Agency in which you raise a number of questions for our consideration. First, let me apologize for the time it has taken to respond to your letters; I hope this has not created any problems for you. You first request that we confirm that the deionization (DI) acid that is generated at Travenol's plant in Cleveland, Mississippi is not a waste. Based on the information provided,1/ we agree with you that the DI acid is not a waste and, therefore, is not subject to the Federal hazardous waste rules. In particular, before a material can be a hazardous waste, one must first determine whether the material is a solid waste. In general, corrosive materials that are neutralized are normally considered wastes. However, where such corrosive materials can be shown to: (1) meet relevant specs with regard to contamination levels, (2) be as effective as the virgin material for which they substitute, and (3) be used under controlled conditions, we believe such materials may not be wastes. The information provided in your letters clearly indicate that the DI acid generated at your Cleveland plant is benefically reused and, therefore, is not a waste. As a result, this material is not subject to the Federal hazardous waste rules. This material would be subject, however, to any State regulations.

With respect to your request regarding the exclusion and whether it applies retroactively under the old regulations, we believe that since the DI acid has always been benefically

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1/ See letters dated: November 14, 1985, from William R. Blackburn to Jack Lehman; December 5, 1985, from Michael Smith to Robert Tonetti; January 13, 1986, from Michael Smith to Matthew Straus; February 6, 1985, from William R. Blackburn to Matthew Straus; and April 17, 1986, from Michael Smith to Matthew A. Straus.

recycled and since this acid is neither listed nor a sludge, this material is not now (and has never been) subject to regulations. Therefore, Travenol does not need to go through closure for this impoundment; we have discussed this interpretation with our Office of General Counsel and they agree. Finally, you requested written explanation as to why no hazardous waste permit is required to dispose of the alcohol to the drain; a verbal response was provided to you by Ms. Irene Horner. A written response, however, has been prepared and should be sent to you shortly.

Please feel free to give me a call if you have any further questions.

Sincerely,

S/ Jeff Denit

Marcia E. Williams
Director
Office of Solid Waste

UNITED S[illegible] ENVIRONMENTAL PROTECTION A[illegible] CY

9443.1986(12)

MAY 23 1986

Mr. Frank Neiderkofler
Supply Service (95)
Veterans Administration
810 Vermont Ave., N.W.
Washington, D.C. 20420

Dear Mr. Neiderkofler

As we discussed last Friday, the National Association of Photographic Manufacturers (NAPM) provided data to the Agency to indicate that used x-ray films, in and of themselves, do not appear to be hazardous under RCRA. Therefore, used x-ray films are probably not subject to the Federal hazardous waste management regulations (see enclosure.) You should be aware, however, that each generator is still responsible for making this determination.1/ In addition, wastes not hazardous under EPA's regulations may be hazardous under authorized State programs. You, therefore, need to contact the States to determine the regulatory status of these films under their program.

Please feel free to give me a call if I can be of any further assistance; my telephone number is (202) 475-8551.

Sincerely,

Matthew A. Straus
Branch Chief
Waste and Identification Branch

WH-562B/MSTRAUS/ecm/475-8551/5-19-86 Disk 8601-27

1/ If the generator determines that these films are hazardous, the only requirements under the Federal regulatins imposed upon the generator would be to get an identification number and to comply with the uniform hazardous waste manifest.

MAY 27 1986

Honorable Patrick J. Leahy
Ranking Minority Member
HUD-Independent Agencies
Appropriations Subcommittee
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Senator Leahy:

Thank you for your letter of May 7, 1986, regarding an inquiry from your constituents in Bristol, Vermont. You requested information regarding residues from municipal waste resource recovery facilities and any federal laws that apply to the disposal of these residues.

Solid residues from municipal waste combustion (MWC) processes consist of fly ash and scrubber sludge recovered from air pollution control equipment, and bottom ash. Disposal of these residues is accomplished by landfilling. Fly ash as well as other residues from MWC processes sometimes exhibit the characteristics of hazardous waste and, therefore, are regulated under the applicable disposal standards in 40 CFR Parts 260 through 265. Other than those occasions when the wastes meet the definition of hazardous waste, the Federal regulations that apply to the landfilling of any nonhazardous solid wastes, including most residues from MWC processes, are the "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR Part 257), which were promulgated on September 13, 1979, under authority of the Resource Conservation and Recovery Act (RCRA). The Criteria include general performance standards that are used to determine which solid waste disposal facilities and practices pose a reasonable probability of having no adverse effects on human health and the environment. A copy of these standards is enclosed for your information.

The 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA require the Environmental Protection Agency (EPA) to complete several new efforts with regard to solid waste disposal. By November 8, 1987, EPA must complete a study and report to Congress on nonhazardous waste land disposal facilities and practices to determine whether the current Federal Criteria

are adequate to protect human health and the environment. In addition, by March 31, 1988, EPA must revise the current Criteria (40 CFR Part 257) for disposal facilities, including municipal waste landfills, that receive household hazardous waste and small quantity generator hazardous waste. HSWA also requires the Agency to develop a report to Congress and guidelines on dioxin emissions from municipal waste incinerators or resource recovery facilities.

In response to these HSWA mandates, we have recently initiated several projects in an effort to address problems pertinent to your inquiry. EPA is currently developing a technical information document for use by State and local governments in evaluating municipal waste combustion projects. We anticipate that this document will be available in February 1987. The EPA contact for this effort is Stephen Greene, (202) 382-4608.

We are also currently engaged in a comprehensive study to determine the characteristics of ash from MWC processes and to assess the potential health and environmental impacts from the disposal of these residues. The results of this study will be incorporated into the February 1987 information document mentioned above. The Agency contact for this ash study is Gerri Dorian, (202) 382-4688.

Your letter presented several questions regarding this matter. I have specifically addressed each of them below.

1. Has EPA tested the wastes from municipal waste resource recovery facilities to determine the characteristics of such wastes? If so, what did those tests find? Have such wastes ever been characterized as hazardous?

Various agencies, domestic and foreign, have performed a range of analyses on these residues. A list of technical papers available to the public is enclosed for your information. EPA will not complete its full evaluation of this until February 1987. However, it is known that ash residues (predominantly fly ash) sometimes exhibit the characteristic of EP toxicity as determined using the RCRA Extraction Procedures (EP) for toxicity (40 CFR Parts 260.20 and 260.21), because of the presence of certain metals, such as lead and cadmium. If a waste is characterized as EP Toxic, it is a RCRA hazardous waste. Additionally, recent testing of fly ash and flue gas from municipal waste combustion processes has, in some cases, demonstrated the presence of polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and polychlorinated biphenyls in both media in relatively small concentrations. EPA has not determined whether the presence of these organic constituents pose a hazard when landfilled.

2. Do EPA's tests for toxicity of the waste include a full range of organic chemicals?

The EP toxicity test (40 CFR Part 261.24) addresses eight inorganics and only six organic constituents. These organics include: Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D, and Silvex. EPA is currently developing a new toxicity characteristic and associated leaching procedure (TCLP) that will result in the evaluation of a broader range of organics. For further information on the TCLP, your constituents should contact Todd Kimmel at (202) 382-4795.

3. If the waste were determined to be a hazardous waste, what requirements would apply to a landfill in which the waste is disposed?

Owners and operators of hazardous waste landfills must comply with all applicable requirements in 40 CFR Parts 260 through 265.

You should be aware that certain States have more stringent or specific standards for the disposal of MWC ash, whether or not the ash is classified as a RCRA hazardous waste. The State of Vermont has proposed regulations that address the disposal of MWC ash. For further information on the State of Vermont regulations (existing and proposed), your constituents should contact:

Mr. John Malter, Director
Waste Management Division
Agency of Environmental Conservation
State Office Building
Montpelier, Vermont 05602
(802) 828-3395

4. Under the Clean Air Act, are there any authorities for controlling the blowing dust particles that may result from the disposal of these wastes?

Under the Clean Air Act, the Agency has the general authority to investigate and regulate emissions, including particulate emissions, from various sources that may pose a threat to human health or the environment. The Agency also has authority under RCRA to control dust. For your general information, the State of Delaware has experienced some dust control concerns regarding municipal waste combustor residues. For more detailed information on the approach Delaware has used, your constituents may wish to contact:

Mr. William Razor, Supervisor
Solid Waste Management Branch
Department of Natural Resources
and Environmental Control
P.O. Box 1401
Dover, Delaware 19901
(302) 736-4781

5. Under the Clean Water Act or any other water-related federal statutes, are there any authorities for controlling leaking ground water from a landfill in which such waste is deposited?

The Clean Water Act does provide EPA some authority for ensuring ground-water protection, but these authorities are less specific to this purpose than those delegated under RCRA. EPA's primary authority for ground-water protection at active landfills is derived from RCRA. For more detailed information regarding these Federal authorities, your constituents should contact our Office of General Counsel, either Dov Weitman at (202) 382-7703 or Ken Gray at (202) 382-7706.

I hope this information is useful to you and your constituents. Should you have any further questions, please do not hesitate to contact us again.

Sincerely,

J. Winston Porter
Assistant Administrator

Enclosures

cc: Mr. John Malter
Mr. William Razor

bcc: M. Williams
J. Lehman
K. Shuster
M. Flynn
G. Dorian

Mr. Peter R. Drew
PME Pty. Ltd.
17A Norfolk Court
Coburg 3058
Melbourne, Australia

JUN 26 1986

Dear Mr. Drew:

This letter is in response to yours dated June 12, 1986 which forwarded information concerning your company's electrolytic silver recovery equipment.

The high recovery rates attributed to your equipment are indeed impressive. I wish you success in marketing this equipment.

Regarding your request for information about EPA limitations on silver discharges to sewer systems, I am unable to comply. I believe you may have some misunderstanding of EPA regulations concerning silver, which I will attempt to remedy.

As you are probably aware, the EPA has established a limit of 0.05 mg/l of silver in public drinking water supplies. Drinking water containing concentrations of silver above this limit are considered to be unsafe.

Under EPA's hazardous waste program, pursuant to the Resource Conservation and Recovery Act (RCRA), materials which have a silver concentration of 5 mg/l or higher in the liquid phase or in an extract from the solid phase are considered hazardous waste and are subject to handling and disposal regulations. However, these regulations do not restrict the discharge of hazardous waste to the sewer.

Discharge of materials to the sewer is regulated by the Clean Water Act (CWA) through EPA's Effluent Guidelines Program. Generally, EPA Effluent Guideline regulations are industry and process specific. In the case of photo-finishing, the Agency has not, as yet, issued a regulation to limit the discharge of used photographic fixers to the sewer. The decision to delay issuance of such regulations is based, in part, on the Agency's belief that current silver recovery practices greatly reduce silver discharges to the sewer.

There are EPA regulations limiting silver discharges to the sewer from metal finishing and electroplating operations. These silver concentration limits are below 1 mg/l.

If you desire additional information of EPA effluent guidelines, I suggest that you contact Marvin B. Rubin (mail code WH-552) in EPA's Office of Water Regulations and Standards.

Also for your information, in case you don't already know, there is a trade association of photographic equipment manufacturers, in the United States. You can contact this association at:

National Association of Photographics
Manufacturers, Inc.
(Attention: Thomas Dutficy)
600 Mamaroneck Avenue
Harrison, NY 10528

Respectfully,

Bernard J. Stoll
Waste Characterization Branch

[redacted]

MEMORANDUM

SUBJECT: How Typical are the Characteristic Hazardous Wastes Generated at Primary Metal Smelting and Refining Sites?

FROM: Frank A. Smith, Economist
Economic Analysis Staff (WH-565)

TO: John Lehman, Director
Waste Management Division

This memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. Three basic comparisons were conducted to answer this question:

(1) waste quantitites produced at individual sites,

(2) resident human populations residing within one and five mile radii from the plants, and

(3) populations served by public water supply systems located near (one and five miles) the generating sites.

The question of whether these wastes are more or less hazardous in terms of constituent concentrations will be addressed in a separate memo regarding toxicity scoring of smelting/refining wastes vs. other similar wastes. Hazardous smelting and refining plant wastes are typically hazardous due to presence of EP toxic metals and/or corrosivity levels.

The basis for comparison in the following summary of results is "all manufacturing sectors" (SIC 2000-3999) as represented by responses from EPA's 1982-83 mail questionnaire surveys of Generators and on-site TSD General waste handlers. Data for smelting and refining are from OSW's 1984-85 surveys of selected smelting and refining sectors, including: aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal and titanium dioxide

(TiO_2). For the most part, these are the largest generators in the primary nonferrous metal sectors since they represent mostly the large volume metals producers.

Results

1. Quantity of Waste Generated

Table 1 compares the salient statistics for six primary nonferrous Smelting and Refining (S&R) sectors (1984) against the OSW 1982 TSD General Survey for manufacturing facilities. In terms of average waste per generator, the S&R's other than TiO_2 have a significantly lower mean (6,200 vs. 62,500 metric tons per year per facility) than that for all manufacturing. On the other hand, S&R's also exhibit a substantially higher median (3,800 vs. 300 tons), indicating that they typically fall above the median size among generators. However, 90 percent of these S&R's generate less than 25,000 tons per year, which is about on a par with the manufacturing sectors as a whole. Excluding TiO_2, the largest individual generators within these six S&R sectors produce characteristic wastes in the 30,000 to 36,000 ton per year range, compared with several million tons per year for the largest individual generators in some other sectors. Statistical estimates based on the TSD general survey indicate that there were about 250 manufacturing facilities in other sectors generating in excess of 36,000 tons per year in 1981.

In summary, two conclusions can be stated:

(1) Most primary nonferrous S&R facilities that generate characteristic hazardous waste produce larger quantities than do a majority of facilities in other sectors, but

(2) S&R generation rates are not extremely large in comparison to the larger waste generators in other sectors.

Titanium dioxide would constitute an exception to these findings. Rates of characteristic hazardous waste generation for the generators in this sector are equivalent to the 85th to 99th percentiles of all waste generators.

What if all hazardous waste except for aluminum potliners is considered characteristic waste? The table below provides a brief comparison with the addition of copper to the list of sectors.

Table 1

Individual Facility Characteristic Hazardous Waste Generation Rates
(Metric tons per year)

Hazardous Waste Statistics	1983 TSD survey	Six sectors	Primary Non-Ferrous Smelting and Refining Sectors*					
			Aluminum	Zinc	Zinc O^2	Lead	Ferro-alloys	Titantium Metal
Mean	62,545	5,791	4,325	10,150	23,595	11,246	4,900	1,850
Median	269	3,800	1,920	8,380	23,595	9,710	5,300	1,500
Minimum	<1	40	140	2,670	7,320	3,790	40	150
Maximum	>10,000,000	39,870	29,030	19,400	39,870	25,280	32,400	4,600
Total HW	234,784,000	341,670	103,800	30,450	47,190	56,230	93,000	11,000
Number of facilities	3750	59	24	3	2	5	19	6

	Six Sectors Per NPR	Seven Sectors	All Mfgr. Sectors
Number of facilities	59	74	3,754
Total H.W.	341,670	750,500	234,784,000
Mean H.W.	5,791	10,140	62,545
Median	3,800	4,600	169
Minimum	40	40	less than 1
Maximum	39,870	91,930	over 10 million

Essentially, the transfer of proposed listed wastes to the "characteristics" category does not change the conclusions. It adds a sector with substantial waste quantities (copper) and adds additional characteristic wastes to several facilities in the lead and zinc sectors. However, it only increases by four the number of facilities with wastes in excess of 30,000 tons per year.

Figure 1 provides a cumulative frequency distribution of facility hazardous waste quantities to illustrate the relation between the 74 S&R facilities and other manufacturing.

2. What if "Large Volume" is defined in terms of Sectors (industry groups) instead of individual facilities?

The 1982 TSD Generator Survey was analyzed in terms of individual four-digit Standard Industrial Classification (SIC) industry hazardous waste management quantities. Comparisons were then drawn between the 194 manufacturing sectors represented in the survey and seven of the larger nonferrous metal smelting and refining (S&R) sectors studied in the reinterpretation.

Sector Totals

The largest hazardous waste generating S&R sector was copper with 360,000 metric tons per year. Thirty-two (32) other individual manfacturing sectors (16 percent of all sectors) in the Office of Solid Waste 1983 Mail Survey reported larger hazardous waste quantities than copper. The second largest S&R sector in our sample of seven was aluminum with 104,000 metric tons per year (excluding potliners). Forty-eight (48) other manufacturing sectors, or 23 percent of all sectors, exceeded 104,000 tons per year of total haardous waste. The average sector total for all seven S&R sectors was also about 104,000 tons per year.

The smallest S&R sector among the seven in terms of estimated hazardous waste was titanium metal with 11,000 tons per year. This was exceeded by 109 (56 percent) other manufacturing sectors and, in turn, was larger than 85 (44 percent) of the other non S&R sectors.

On the basis of these data, we conclude that the smelting and refining waste quantities when viewed as sector totals are well within the "normal" range of sector hazardous waste quantities for all manufacturing categories.

3. Population and Proximity to Public Water Supplies

Smelting and refinery facility locations were compared to locations of other generators based on the 1982 generator survey (NWDMS). Two types of comparisons were performed:

- Population density in the vacinity of the facility (one and five mile radius)
- Population served by public water supply intakes located within one and five mile radii.

Nonferrous smelting and refining sites are somewhat more rurally located than other generators. Average population living within one mile for S&R's was 4,500 vs. 11,800 for other generators; and within five miles average population was 51,000 vs. 198,000. The conclusion is not warranted, however, that S&R's are mainly located in remote areas: 75 percent of S&R's have a population of at least 7,500 within a mile, compared with 15,000 for other generators.

Regarding distance to public water supply intakes, 59 percent of S&R's showed a public water supply intake within one mile, vs. only 40 percent of all generators in the OSW generator survey. Both S&R's and all generators showed a public water supply intake within five miles for every facility in the respective samples. On average, the water supply systems near S&R's served somewhat smaller populations (2,500 vs. 5,000 for systems with intakes located within a mile of the facilities).

cc: Mark Greenwood
Meg Silver
Eileen Claussen
Matt Straus
Jeff Denit

9443.1986(17)

UNIT STATES ENVIRONMENTAL PROTECTI AGE

SEP 3 1986

Mr. David J. Alff,
Analytical Testing and
Consulting Services, Inc.
P.O. Box 537
Warrington, PA 18976-0537

Dear Mr. Alff:

I enjoyed meeting you and getting the chance to discuss your company's zero-headspace extractor (ZHE) during the OSW symposium.

The EPA has tentatively decided to add your ZHE to the list of extractors deemed suitable for conducting evaluations of volatiles. We would like to remind you that your device, as well as others, is in a proposed status as the rules that specify use of the TCLP have not yet been finalized. If we encounter any information which leads us to change our evaluation, we will let you know. Otherwise, you can expect that your extractor will receive formal approval when the TCLP is finalized later this year.

If you have any questions, please call me at (202) 475-6722.

Sincerely yours,

Gail Ann Hansen
Environmental Health Scientist
Methods Section (WH-562B)

cc: David Friedman
Peter Guerrero
Todd Kimmell
~~Pamela Watkins, AICS~~

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1986(18)

SEP 4 1986

Honorable Alan Cranston
United States Senate
Washington, D.C. 20510

Dear Senator Cranston:

Thank you for your August 4, 1986, letter on behalf of your constituent, Mr. Martin Schlaegel, concerning the disposal of dry cell batteries containing mercury and the potential damage they may cause to the environment.

We, like Mr. Schlaegel, are concerned with the toxic effects of mercury on the environment. As you may know, regarding dry cell batteries, the Agency's hazardous waste rules define hazardous as any waste where the leachate exceeds 0.2 mg/l of mercury. Wastes are also defined as hazardous if they are specifically listed by the Agency. At this time, mercury dry cell batteries are not listed as hazardous by the Agency. Although we have no data indicating whether disposed mercury dry cell batteries are hazardous wastes under our rules, we require generater's of such waste to make this determination. To the extent that these batteries are hazardous (i.e., the leachate from the dry cell battery would contain greater than 0.2 mg/l of mercury), they must be managed at a hazardous waste management facility.

There are two exceptions to the requirement that hazardous waste from these batteries be managed at a hazardous waste management facility. First, if the batteries are discarded by a householder, they are not subject to the hazardous waste rules. Second, if the hazardous waste from these batteries is generated in small quantities (defined as less than 100 kg per month), they also are not required to be managed at a hazardous waste management facility. In these cases, the batteries generally would go to a municipal sanitary landfill. Municipal landfills are non-hazardous waste facilities. Because the Agency is concerned that discarding this type of waste in municipal landfills could be a problem we are re-evaluating our non-hazardous waste criteria. After we complete our review of the criteria, we will revise the regulations for non-hazardous waste facilities, including municipal landfills. We will issue these regulations in March of 1988.

If I can be of any further assistance, please feel free to contact me.

Sincerely,

J. Winston Porter
Assistant Administrator

9443.1986(19)

SEP 8 1986

Ms. Jacqueline Daitch
Marketing Manager
Millipore Corporation
80 Ashby Road
Bedford, MA 01730

Dear Jacquie:

As per our phone conversation of September 4, 1986 concerning your glass fiber filters, both David and Todd will not reconsider the ERCO study results. They still feel that your filters do not have the durability required for the rigors of the TCLP. These filters have a tendency to become frayed around the edges while undergoing the pressures of the test. This could contribute to irreproducibility and may cause confusion amoung analysts.

We theretore cannot add your filters to the list of the ones deemed suitable for TCLP purposes. If you have any questions about this decision, please call me at (202) 475-6722.

Sincerely yours,

Gail Ann Hansen
Environmental Health Scientist
Methods Section (WH-562B)

cc: Peter Guerrero
David Friedman
Todd Kimmell

9443.1987(01)

January 6, 1987

Mr. Thomas Dufficy
Executive Vice President
National Association of
Photographic Manufacturers, Inc
600 Mamaronech Avenue
Harrison, NY 10528

Dear Mr. Dufficy:

This is in response to your letters of September 15, October 24, and November 4, 1986, regarding the regulatory status of properly washed chemical recovery cartridges (also referred to in your letters as steel wool cartridges), flake silver from electrolytic recovery cells, and silver-containing ion-exchange resins, under the federal hazardous waste rules. These units (i.e., chemical recovery cartridges, electrolytic recovery cells, and ion-exchange resins) are used to recover silver in a number of operations in the photographic industry.

Based on the data and information provided in your letters (i.e., analytical test data and discussions regarding the representativeness of the data), it appears that when these units are properly washed (in accordance with the instructions provided in your letters), they do not exhibit the characteristic of EP toxicity for silver. You also state that these recovery units do not exhibit the characteristics of ignitability, corrosivity, and reactivity, and I presume that these recovery units are not EP toxic for any of the other toxic contaminants. Thus, those recovery units that are properly washed appear not to be hazardous wastes and, therefore, are not subject to the federal hazardous waste regulations. However, each generator is still responsible for determining whether or not the wastes contained in the recovery units are hazardous. See 40 FR §262.11.

In addition, as we've discussed previously, to the extent that these recovery units would be defined as a sludge (i.e., a pollution control residual), they would not be subject to the federal hazardous waste rules when they were sent for reclamation, since they would not be considered a solid waste. Thus, if any of these devices was used to treat wastewater (for example, to comply with the new BAT/PSES rules), the residues contained in the units would be considered a sludge; if the sludge is sent for reclamation, it would not be considered a solid waste. See 40 CFR §261.2(c)(3).

This has been retyped from the original document.

Finally, as you are aware, States may choose to regulate these recovery units under their State hazardous waste program differently than under the federal program. Therefore, representatives in the various States will need to be contacted to determine the regulatory status of these recovery units under the State hazardous waste rules.

Please feel free to give me a call at (202) 475-8551 if I can be of any further assistance.

Sincerely,

Matthew A. Straus
Chief
Waste Characterization Branch

This has been retyped from the original document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 14 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Les Aspin
House of Representatives
Washington, D.C. 20515

Dear Mr. Aspin:

Thank you for your December 18, 1986, letter requesting that the Environmental Protection Agency (EPA) make a determination as to whether lithium thionyl chloride ($SOCL_2$) batteries are hazardous wastes.

As you may know, wastes are considered hazardous under regulations issued pursuant to the Resource Conservation and Recovery Act (RCRA) if they are either specifically listed as hazardous wastes or if they exhibit one of four characteristics (i.e., ignitability, corrosivity, reactivity, or Extraction Procedure Toxicity). Lithium batteries are not listed hazardous wastes at this time and the Agency is not currently planning to list them as hazardous.

With respect to the characteristics of hazardous waste, determinations as to whether a particular material exhibits a characteristic is, by regulation (40 CFR §262.11(c)), the responsibility of individual generators. Although the Agency rendered an opinion in March of 1984 with respect to lithium sulfur dioxide (LI/SO_2) batteries, we did so only after repeated requests from the Army and because there had already been considerable work done on $LiSO_2$ systems which allowed the Agency to render an opinion without extensive additional study. Further work on other lithium battery systems is not currently underway and other priorities established by the Hazardous and Solid Waste Amendments of 1984 (HSWA) will preclude us from initiating such a study any time in the immediate future. Consequently, we suggest that the Department of Defense, perhaps in cooperation with the battery manufacturers, evaluate these other lithium systems against the characteristics in Subpart C of Part 261.

If I can be of any further assistance in this matter, please do not hesitate to call.

Sincerely,

J. Winston Porter
Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 11 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Lawrence D. Aniballi
Research Products International Corporation
410 North Business Center Drive
Mount Prospect, Illinois 60056

Dear Mr. Aniballi:

This is in response to your letter of December 16, 1986, in which you requested an interpretation of the regulatory status of your liquid scintillation counting cocktail, Bio-Safe II, under the Federal hazardous waste regulations.

Based on telephone conversations you had with Miss Filomena Chau, of my staff, and your letter of January 12, 1987, Bio-Safe II contains less than 0.05 microcuries of radioactive tritium (hydrogen-3) and carbon 14; in addition, this material contains the following scintillators: primary scintillator of PPO: 2,5diphenyloxazole; secondary scintillator of Butyl PBD: 2-(4'-tbutylphenyl)-5-4"biphenyl)-1,3,4 oxadiazole.

The waste, as you described, does not seem to be subject to the Nuclear Regulatory Commission regulations under 10 CFR 20.306(a), since your waste contains less than 0.05 microcuries of hydrogen-3 and carbon-14 per gram of medium. However, your waste appears to be subject to 10 CFR 20.306(d), which states that the generator is not relieved from complying with other applicable Federal, State, and local regulations governing any other toxic or hazardous property of these materials. EPA's hazardous waste management regulations would be an example of such "applicable regulations."

Thus, you must compare the characteristics of your waste against the criteria outlined in 40 CFR Part 261 (see enclosure) to determine whether or not your waste is hazardous. Specifically, you must determine whether your waste exhibits any of the characteristics of hazardous waste (see 40 CFR Part 261, Subpart C, "Characteristics of Hazardous Waste"), or whether your waste is a listed hazardous waste (see 40 CFR 261, Subpart D, "Lists of Hazardous Waste").

With respect to the hazardous waste characteristics, you must determine whether your liquid scintillation counting cocktail is ignitable, corrosive, reactive, or toxic. Liquid ignitable wastes are defined under §261.21 as those with a flash point of less than 140°F. Corrosive wastes are defined under §261.22 as those having a pH of less than or equal to 2 or greater than or equal to 12.5 or is able to corrade steel at a rate greater than 6.35 mm (0.250 inches per year at a test temperature of 55°C (130°F)). Reactive wastes are defined under §261.23 as those exhibiting any of eight properties (see the attached regulations). Section 261.24 defines the characteristic of extraction procedure (EP) toxicity and indicates the test methods to be used to identify the presence of this characteristic for any contaminants listed in Table I of the Section.

Your letter stated that your waste has a flashpoint of greater than 300°F, greater than the highest flash point of regulatory concern, 140°F. The ingredients of Bio-Safe II, as you described, are not any of the contaminants listed in Table I of §261.24; thus Bio-Safe II does not seem to be EP toxic. Your letter did not address whether Bio-Safe II was corrosive or reactive. In addition, neither liquid scintillation cocktails nor laboratory wastes, as a general category, are presently listed as hazardous wastes under §261.30-.33. Therefore, provided the liquid scintillation cocktail is not corrosive or reactive, it does not appear to be a hazardous waste.

However, each generator is still responsible for determining whether or not their waste is hazardous. See 40 CFR 262.11. In addition, you will need to check with your State or local authorities to determine whether this waste is regulated under their authority.

If you have any further questions, please contact Miss Filomena Chau (202-382-4795) of my staff.

Sincerely,

Matthew A. Straus, Chief
Waste Characterization Branch

Enclosure

cc: Michael Bandrowski (ANR-460)
Paul Friedman (WH-562B)
Filomena Chau (WH-562B)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MAR 18 1987

Mr. Carl Berger, Director
Power Sources Division
U.S. Army Laboratory Command
Electronics Technology and Devices Laboratory
Fort Monmouth, New Jersey 07703-5302

Dear Mr. Berger:

I am responding to your letter of August 18, 1986, in which you request an Agency opinion that Lithium/Sulphur Dioxide (Li/SO_2) batteries that have been fully discharged to zero volts no longer exhibit the characteristic of reactivity. Based on information supplied by the US Army Electronics Technology and Devices Laboratory (LABCOM), we generally agree that such batteries are unlikely to be reactive.

Under the hazardous waste regulations, each generator of a waste is responsible for making a hazardous waste determination under 40 CFR 262.11. If the waste exhibits one of the four characteristics of hazardous waste identified in Subpart C of Part 261 or is a waste listed in Subpart D of Part 261, it must be managed in accordance with the hazardous waste regulations. As you know, on March 7, 1984, in response to requests from the Department of the Army, EPA rendered an opinion that spent or discarded Li/SO_2 bateries appeared to exhibit the characteristic of reactivity, as defined in 40 CFR 261.23. The Agency further noted that 264.312 and 265.312 of the hazardous waste regulations prohibit the placement of reactive (or ignitable) hazardous waste into a landfill unless the waste, or waste mixture, is treated, rendered, or mixed before, or immediately after, placement in a landfill such that the waste or waste mixture no longer exhibits the characteristic. Thus, the prohibition would no longer apply if the waste no longer exhibited the characteristic of reactivity (or ignitability).

The Agency continues to believe that fully charged and duty-cycle Li/SO_2 batteries are reactive hazardous wastes and should be managed as such. However, information provided by LABCOM during the August 5 meeting with members of my staff and in your follow-up submission of August 18th indicates that a Li/SO_2 battery that has been fully discharged to zero volts would contain substantially reduced quantities of reactive materials such that the battery is not likely to exhibit any of the properties of the reactivity characteristic. We assume that by fully discharged, LABCOM means that each cell within each battery will have been discharged.

It is our understanding that the mechanism by which the Army intends to effect discharge of all Li/SO_2 batteries to zero volts would be through a battery redesign that would incorporate an additional resistor circuit that would be activated by an external, manual switch. While such an approach would appear to be capable of producing the desired results, it remains the responsibility of the generator or the disposer to ensure that all batteries so discharged have in fact reached a fully discharged state and, thus, are no longer reactive.

In conclusion, the Agency agrees that a Li/SO_2 battery which has been fully discharged is unlikely to exhibit the characteristic of reactivity. However, the responsibility for determining whether a waste exhibits a characteristic of hazardous waste either before or after treatment still remains with the generator and treatment or disposal facility.

Sincerely,

Marcia Williams

Marcia Williams
Director
Office of Solid Waste

Enclosure

APR 8 1987

Honorable Robert Walker
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Walker:

Thank you for your March 5, 1987 letter regarding your constituents' Carol and Richard Kushner concern about incineration. Generally speaking, EPA considers combustion to be a viable alternative to direct landfilling as a means of managing municipal waste. We recognize, however, that concerns have been raised about certain aspects of combustion facilities, including the disposal of residual ash.

The solid residues from municipal waste combustion consist of bottom ash, fly ash from air pollution control equipment, and miscellaneous debris from uncombustible materials. Because these residues can contain potentially toxic metals, proper disposal practices are important.

The presence of large amounts of such metals could cause ash to be classified as a hazardous waste. One way to determine whether a waste must be managed as a hazardous waste is to perform what is referred to as the "extraction procedure (EP) toxicity test", which determines the concentrations of metals that are likely to leach out of the waste when placed in the type of weakly acidic environment typical of a landfill accepting (unincinerated) municipal garbage.

In 1986, EPA performed a search for published reports of the results of EP tests on ash to see what the results of those tests typically showed. These tests had not been scientifically reviewed, and some of the results were several years old. The results indicated that fly ash may exhibit the EP toxicity hazardous waste characteristic, however, when combined fly and bottom ash was tested. This combined ash frequently did not exhibit a hazardous waste characteristic. EPA recently initiated a study of the characteristics and leachability of ash from municipal waste combustion to address these issues in a more complete and careful fashion. Following EPA's evaluation of ash characteristics, the Agency will be in a position to evaluate what types of management practices are most appropriate for ash residues.

If ash residues are found to routinely contain sufficient amounts of metals to be of concern, there are a number of technical measures that may be appropriate for their disposal. First, basic housekeeping practices can be used to cut down on the wind dispersal of ash. Second, the common approach of mixing the acidic fly ash with the alkaline bottom ash to achieve a buffering effect will decrease the tendency of the ash to leach metals. (Acidic conditions tend to enhance the leachability of metals). Third, some design and location practices can reduce the tendency of ash to leach or limit the extent to which leachate would affect groundwater. Monofilling, which is the disposal of ash in a landfill that accepts nothing else, can keep the ash segregated from acids or materials which produce mild acids when they decay. Also, covers can be designed to minimize rainwater infiltration and proper siting of ash landfills can limit contact of the landfill with groundwater.

EPA is also evaluating other aspects of municipal solid waste management. Later this spring, EPA will submit to Congress a report on air emissions from municipal waste combustion facilities. Additionally, EPA is reviewing its program in the general area of solid waste disposal, and will be proposing rules, sometime in 1988 to improve disposal of solid waste at municipal landfills to protect health and the environment.

If I can be of any further assistance, please let me know.

Sincerely,

J. Winston Porter
Assistant Administrator

APR 16 1987

Mr. David L. Bumgarmer
Kemron
200 Putnam Street
Marietta, OH 45750

Dear Mr. Bumgarmer:

This brief note will respond to your letter of inquiry to David Friedman regarding the interpretation of the Characteristic of Ignitability, 40 CFR Part 261.21.

Your questions are repeated below with the appropriate response:

- We have observed apparent flashes on solvent mixtures whose composition would imply they are nonflammable, i.e., 99% Freon 113 mixtures containing trace levels of cyclohexane. The flashes occur at low temperature (20° - 40°C) and are usually not reproducible on the same aliquot. Should these initial flashes be reported as true Flash Points for RCRA characterization?

  Yes, according to the present regulations.

- Many solvent mixtures, including Freon 113, boil at temperatures below 60°C and cannot be properly evaluated by Pensky-Martens. How should such RCRA data be reported to agencies and other clients?

  Only those liquids that flash are considered ignitable.

- Many clients request Flash Point data for soils and other solid materials. They indicate that waste haulers or state or Federal agencies are requiring such data. Does EPA have a standard policy on this matter?

  Current test methods (40 CFR Part 261.21) are designed for liquids only. At the present time there are no suitable, validated procedures for determining the ignitability characteristic of solid (non-liquid) wastes.

We hope these answers are sufficient for your use. If you have additional questions please feel free to call us.

Sincerely,

Florence M. Richardson
Chemist, Methods Section

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

APRIL 87

2. Solvent Drippings from Degreasing Operations

A ball-bearing manufacturer dips metal parts in a degreasing tank of pure 1,1,1-trichloroethane. Once the parts have been dipped, they are ground. The cooling system (either oil or water is used as the fluid) picks ups the grinding sand, metal flakes, and traces of solvent left on the part. The fluid is then filtered for reuse, and the sand-metal-solvent mixture is discarded. Are the traces of solvent left on the parts after degreasing classified as F001? Is the sand-metal-solvent mixture regulated as a hazardous waste when discarded?

The small amount of solvent remaining on the part after it has been dipped will not be regulated as F001. If the sand-metal-solvent mixture exhibits any of the characteristics of hazardous waste as defined in Subpart C of 40 CFR Part 261, then the mixture would be regulated as a hazardous waste.

Source: Matt Straus 475-8851
Steve Silverman 382-7706

Research: Becky Cuthbertson 382-3112

UNITED STATES ENVIRONMENTAL PROTECTION AGEN
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RES

Mr. John Whitehead
Assistant Product Manager
Madison Chemical Industries, Inc.
490 McGeachie Drive
Milton, Ontario L9T 3Y5

May 13, 1987

Dear Mr. Whitehead:

I am responding to your letter of May 4, 1987, to Mr. Alan Corson requesting confirmation of your interpretation concerning the regulation, under the Resource Conservation and Recovery Act (RCRA), of containers that packaged urethane coating chemicals.

Specifically, you stated that since none of the chemicals used in your two-part urethane coating system are currently listed as "P" or "U" wastes in 40 CFR 261.33, the residues in the containers are not hazardous wastes and, therefore, you would not need to determine whether the containers are empty in accordance with 40 CFR 261.7.

Your interpretation is partially correct. Part 261.7 deals with any hazardous waste residues left in containers, not just the commercial chemical products listed in Part 261.33 (or those hazardous wastes listed in Parts 261.31 and 261.32). Therefore, it also will be necessary to demonstrate that the container residues do not exhibit any of the hazardous waste characteristics (ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity) before stating that the residues are not hazardous. If the residues, in fact, are hazardous (i.e., they exhibit a hazardous waste characteristic) then Part 261.7 should be used to determine whether the container is empty.

If you require additional information, please contact Ed Abrams at (202) 382-4787.

Sincerely,

Robert M. Scarberry

Robert M. Scarberry
Chief, Listing Section

cc: Alan Corson, EPA/OSW

9443.1987(11)

JUN 8 1987

Mr. Adolfo Valdes
Environmental Labs Inc.
67 Concordia Street
Ponce, Puerto Rico 00731

Dear Mr. Valdes

Thank you for your telephone call on June 5, 1987 concerning the Agency position on regulating chromium. The Agency under CFR part 261 is currently regulating chromium as total chromium. Until the Agency decides to change its position, continue to analyze for total chromium.

Sincerely,

Martin Meyers

JUN 23 1987

Ms. Karen Eglinton
Free-Coll Laboratories
P.O. Box 557, Cotton Rd.
Meadville, PA 16335-0557

Dear Ms. Eglinton:

The Third Edition of SW-846 requires that the method of standard editions be used whenever the percent recovery of a matrix spike is outside of the range 75% to 125%. The method of standard additions consists of "spikes" of three different levels of analyte into three aliquots of the sample to correct for interferences. This requirement applies to analysis by both atomic absorbtion and ICP.

However, it should also be pointed out that the method of standard additions is required, in all cases, when analyzing Extraction Procedure toxicity extracts (see 40 CFR 261, Appendix II).

Thank you for your kind remarks about the Third Edition of SW-846. We welcome any suggestions that you might have for further improvements. I hope this aleviates your concerns. If you have further questions, please feel free to call me at (202) 382-7458.

Best Regards,

Denise A. Zabinski, Chemist
Methods Program

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1987(14)

AUG 11 1987

Mr. Brian Monson
State of North Dakota
Dept. Of Health
1200 Missouri Ave.
P.O. Box 5520
Bismark, ND 58502-5520

Dear Mr. Monson:

As you requested, during our recent telephone conversation, I am writing to review the regulatory status of Method 1310 (Extraction Procedure) and Method 1330 (Extraction Procedure for Oily Waste.

When testing a waste to determined if it exhibits the characteristic of Extraction Procedure Toxicity one employs Method 1310. This is so even if the waste would be considered to be an "Oily Waste". The Agency proposed the Extraction Procedure for Oily Waste on October 1, 1984 (49 Federal Register 38, 786 and to replace Method 1310 with the new Toxicity Characteristic Leaching Procedure, see January 14, 1986 (51 Federal Register 1602) and June 13, 1986 (51 Federal Register 21, 648). This change has not yet been promulgated. Method 1310 remains the designated acceptable procedure (see 40 CFR 261.24).

The Agency however has been concerned that Method 1310 might not adequately model the potential leachability of toxic species from certain listed oily wastes. Method 1330, therefore, was developed as a worst case estimation of potential toxicant release. For delisting petition evaluation purposes, it serves as a conservative indication of the mobile metal fraction. The mobile metal concentration (MMC) values are compared with delisting thresholds developed using a specially developed fate and transport model.

We agree that the formula for calculating MMC in the recently published 3rd edition of Test Methods for Evaluating Solid Waste (SW-846) contains an error. The weight of crude solid (L2) should be in grams not milligrams. This error will be corrected in the ~~next update of the manual~~.

In summary, under the RCRA regulatory program, Method 1310 is the only method currently approved for use in identifying wastes that exhibit the characteristic of Extraction Procedure Toxicity. I apologize for any confusion this may have caused you and trust this clarifies the status of Methods 1310 and 1330.

Should you have any additional questions in regard to this matter, please contact me at (202) 382-4761.

Sincerely,

David Friedman, Chief
Methods Section

cc: Suzanne Rudzinski
Myles Morse
Martin R. Schock (ND)
Ken Kary (ND)
Larry Wapensky (Reg. VIII)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1987(16)

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

AUG 13 1987

Mr. Martin Lueck
Material Engineer
Nelson Division
Exhaust and Filtration Systems
Highway 51 West, P.O. Box 428
Stoughton, WI 53589

Dear Mr. Lueck:

This is in response to your July 13, 1987, letter requesting an interpretation of whether and how the EPA hazardous waste regulations apply to vehicle filters contaminated with pesticides. For the use you describe, i.e., in farm equipment, it would seem most likely that the filters would become contaminated with pesticides via contact with ambient air near application areas. As such, the filters do not really contain waste pesticide. Rather, the spent filters are themselves a waste that may contain pesticide ingredients as constituents. The generator of any waste must determine whether his waste is hazardous waste, and if it is, must comply with applicable regulations. Most likely, these fiters would only be hazardous if they exhibit the characteristic of E.P. toxicity. (See 40 CFR §261.24. I have photocopied and enclosed the relevant pages of the regulations for your information.)

You should also note that generators of less than 100 kilograms (about 220 lbs.) of hazardous waste per month are conditionally exempt from regulation. (See 40 CFR §261.5.) Many farms, if the filters are hazardous waste at all, may be eligible for this conditional exemption. You might advise customers to determine the amount of hazardous waste they generate each month including the filters in the amount. If the farmer's monthly total is below 100 kilograms, the waste may be sent to a municipal landfill. If the total exceeds 100 kilograms, the farmer may then want to have the filters analyzed to determine if they exhibit E.P. toxicity.

If you have further questions in this area, contact Mike Petruska of my staff at (202) 475-6676.

Sincerely,

Marcia E. Williams, Director
Office of Solid Waste

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1987(17)

AUG 18 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Kevin T. Rookstool
Mineral By-Products, Inc.
240 West Elmwood Drive
Suite 2011
Dayton, OH 45459

Dear Mr. Rookstool:

This is in response to your letter of May 20, 1987, in which you asked whether the characteristic of corrosivity, as discussed in 40 CFR 261.22, applies only to those wastes which are aqueous and or liquid. Section 261.22 presently applies only to aqueous and liquid wastes, unless and until EPA promulgates a definition of corrosivity for solids. The Agency has no plans to do this at the present time.

Sincerely,

Matthew A. Straus, Chief
Waste Characterization Branch

cc: David Friedman
Filomena Chau

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 19 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Dr. Harold Edelstein
Director, Technical Development
Fisher Scientific Company
Chemical Division
1 Reagent Lane
Fair Lawn, NJ 07410

Dear Dr. Edelstein:

This is in response to your letter of May 1, 1987, in which you requested an interpretation of the regulatory status under the Federal hazardous waste regulations of your liquid scintillation cocktail, Scintiverse BD, if disposed.

Under 40 CFR Part 261, a waste can be determined to be hazardous in one of two ways. Specifically, as defined in Subpart D, a waste could be a RCRA listed waste, or a waste, according to Subpart C, could exhibit one or more of the characteristics of a hazardous waste (ignitability, reactivity, corrosivity, or toxicity).

It is clear from the information you provided that your material is not a RCRA listed waste. See 40 CFR Part 261, Subpart D. However, the data did not provide the Agency with enough information to determine if the material would or would not exhibit one or more of the characteristics of a hazardous waste. It must be pointed out that, under 40 CFR §262.11, waste generators are responsible for determining whether or not their wastes exhibit one or more of the hazardous waste characteristics.

With respect to the hazardous waste characteristics, you must determine whether your liquid scintillation cocktail is ignitable, corrosive, reactive, or toxic. Liquid ignitable wastes are defined under §261.21 as those with a flash point of less than 140°F. Corrosive wastes are defined under §261.22 as those having a pH of less than or equal to 2 or greater than or equal to 12.5, or that are able to corrode steel at a rate greater

than 6.35 mm (0.250 inches) per year at a test temperature of 55°C (130°F). Reactive wastes are defined under §261.23 as those exhibiting any of eight properties (see the enclosed regulations). Section 261.24 defines the characteristic of extraction procedure (EP) toxicity and indicates the test methods to be used to identify this characteristic.

You should also note that the Agency has proposed a new leach procedure, the Toxicity Characteristic Leaching Procedure (51 FR 21648, June 13, 1986). When this proposal is finalized, waste generators will be responsible for determining whether their wastes meet this characteristic. In addition, you will need to check with your State or local authorities to determine whether this waste is regulated under their authority.

If you have any further questions, please contact Filomena Chau of my staff at (202) 382-4795.

Sincerely,

Matthew A. Straus, Chief
Waste Characterization Branch

Enclosure

SEP 14 1987

Mr. Stuart J. Gock
Environmental Coordinator
Printing Developments, Inc.
2010 Indiana Street
Racine, WI 53405

Dear Mr. Gock:

The following information is being provided in response to your letter of April 6, 1987, regarding the definition of aqueous as used in the Corrosivity Characteristic, 40 CFR Part 261.22(a)(1).

As you are aware, the corrosivity characteristic does not specifically define what constitutes an aqueous waste. However, we have developed guidance in defining the term "aqueous." In particular, we consider a waste to be aqueous if it has a liquid phase containing more than 50 percent water." (See attached letter from Dr. John Skinner, Director of the Office of Solid Waste, on February 26, 1985.) This position is currently in effect and you should use the 50 percent water cut-off as a basis for evaluating whether or not to test your wastes for corrosivity.

21/87/JC-8701

I should point out that we are considering reviewing this position, as well as the need for a regulatory definition of aqueous waste. Therefore, you should be aware that a regulatory definition of aqueous may be proposed at some point in the future.

If you have any additional questions, please do not hesitate to contact me.

Sincerely,

Robert Scarberry, Acting Chief
Waste Characterization Branch

Attachment

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

SEPTEMBER 87

6. SW-846 Test Method 3060

Why was Method 3060, for alkaline digestion to hexavalent chromium, dropped from the third edition of EPA's "Test Method for Evaluating Solid Waste?" Is there a replacement method?

The SW-846 Test Method #3060 is used to determine the total concentration of hexavalent chromium in solid waste. It uses a basic digestion of the waste sample to solubilize both water-insoluble and water-soluble hexavalent chromium compounds.

Method 3060 was dropped from the third edition of the SW-846 Manual because it yielded inconsistent results from sample to sample within the same matrix and from matrix to matrix. The method also provides the analyst with no way of distinguishing when it would or would not work.

An evaluation study of Method 3060 indicates that not only is it possible to oxidize Cr^{+3} to Cr^{+6}, but that Cr^{+6} can be reduced to Cr^{+3} during digestion. In fact, there is more likelihood that Cr^{+6} is reduced than Cr^{+3} oxidized. Also during the digestion, precipitates are formed which can present problems.

It may be appropriate to continue using Method 3060, provided the user can demonstrate that it works by doing spike recoveries. At this time EPA does not have a current or expected replacement method for Method 3060.

Source: Denise Zabinski (202) 382-7458
Research: Joe Nixon

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

OCTOBER 87

4. Natural Gas Pipeline Condensate and Energy Recovery

Is natural gas pipeline condensate that exhibits the characteristic of ignitability and that is going to be burned for energy recovery a hazardous waste?

According to the January 4, 1985 FR page 630, off-spec fuels burned for energy recovery are not by-products, thus are not considered wastes. This includes natural gas pipeline condensate. The condensate contains many of the same hydrocarbons found in liquified natural gas and certain higher hydrocarbons that have energy value. It is generated in the pipeline transmission of natural gas and is not considered to be a by-product nor a waste when burned for energy.

By-products that exhibit any characteristics of hazardous wastes are, however, hazardous waste when burned for energy recovery.

Source: Ed Abrams (202) 382-4787
Research: Kate Anderson

This has been retyped from the original document.

9443.1987(24)

NOV 5 1987

MEMORANDUM

SUBJECT: Appropriate leaching test to use in evaluating soils contaminated with lead.

DATE: October 30, 1987

FROM: David Friedman, Chief
Methods Section (WH-562B)

THRU: Alec McBride, Chief
Technical Assessment Branch (WH-562B)

TO: Thomas Spittler, Chief
Laboratory Branch, Region I

As you requested, I am writing to review the regulatory status of the various leaching tests that have been developed for use in the hazardous waste program with respect to the problem of assessing the regulatory status of contaminated soils.

When evaluating a soil, or other waste, to determine whether it is a hazardous waste by reason of the toxicity characteristic one should use Method 1310, the Extraction Procedure. While, sometime in the future, we expect to replace Method 1310 with the new Toxicity Characteristic leaching Procedure (TCLP), the TCLP has not yet been promulgated for such use.

As I indicated at the recent meeting in Annapolis of the Regional laboratory chiefs, OSW has recently developed Method 1312 for use in evaluating the leaching potential of in-place soils and debris. This test, which is a modification of the TCLP, employs regional specific simulated acid precipitation as the extraction medium. As you recently noted in your work on neutral soils contaminated with lead, the high acetate concentration of the TCLP relative to the EP means that the TCLP is significantly more aggressive than the EP for such materials. For this, and other reasons, OSW feels that use of the TCLP for determining the ground water contamination of soils and debris that are to remain in place is a misapplication of the procedure. In upcoming guidance manuals on both making clean

SYMBOL | CONCURRENCES |

closure determinations, and on facility investigations, the Agency will approve Method 1312 for use as the leaching estimation tool for those situations. For your convenience, I have enclosed a draft copy of Method 1312.

I hope I have clarified the use of the different methods for you. I want to thank you for calling my attention to the problem you faced when the TCLP was applied to the contaminated soils in your area. I am sorry that I did not get a chance to see you in Annapolis last week.

cc: All Regional Laboratory Chiefs
All Regional ESD Directors
All Regional Solid Waste Branch Chiefs

Enclosure

NOV 4 1987

Bernard E. Cox Jr., Chief
Hazardous Waste Branch
Land Division
Alabama Department of Environmental Management
1751 Federal Drive
Montgomery, Alabama 36130

Dear Mr. Cox:

This is in response to your letter of October 7, 1987, to Matthew Straus concerning previous correspondence from my office on recycling of zinc oxide baghouse dust. In your letter you request that the Agency clarify whether a sludge (zinc oxide) is subject to subtitle C when used to make fertilizer. I apologize if Matt and my previous letters to you and Mr. Tate were not entirely clear.

The rule that applies in this situation is that the determination of whether a material is a solid waste depends on the ultimate management of the material. (See 50 FR 634; January 4, 1985.) Certain ultimate management methods, including incorporation of waste into products that are to be placed on the land, result in designation of the material as solid waste. Therefore, if zinc sulfate is recovered from the zinc oxide and then used to produce fertilizer, the zinc oxide is a solid waste.

The dust in question has not been listed as a hazardous waste; therefore, it would be hazardous only if it exhibits one of the characteristics at 40 CFR Part 261, Subpart C. It is the generator's responsibility to use his knowledge of the waste or to perform the tests described in sections 261.22-24 to determine whether the waste exhibits any of the characteristics of hazardous waste. The solution that you propose (i.e., to regulate the process until the metals are removed) is allowable; but the issue is not when the material ceases to be a solid waste, it is rather when does it cease to exhibit a characteristic.

Finally, you should note that a facility which treats a hazardous sludge to recover a material (i.e., zinc sulfate) that is used to produce fertilizer is subject to 40 CFR section 261.6(c), the requirements for hazardous waste recycling facilities.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 12 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Pulverizing Waste Prior to EP Test

FROM: Scott Maid
Variances Section

TO: Carolyn Bosserman
SAIC

Linda Cessar and I discussed the "pulverizing" issue you raised concerning Eli Lilly (#564A) and we reached a consensus that the metal rings and lids should be included in the ash samples. Our justification for this is that these materials are contained within the volume of hazardous waste, and should be evaluated as such. HSWA requires such an evaluation of other constituents and factors in our evaluation of hazardous waste. Also, the EP toxicity test procedure in 40 CFR Part 261, Appendix II explicitly requires that solid wastes shall be evaluated for particle size, and large pieces of waste should be ground up, crushed, or cut until the waste will pass through a 9.5 mm sieve. This regulatory requirement is quite important since it does not allow for the waste in question to be separated into different sized particles prior to testing.

The 9.5 mm sieve will still allow pieces of metal over 1\3" square to pass through it, which are really pretty large chunks. The connotation of "pulverizing" implies reducing the metal chunks to powder, which we agree is inconsistent with the requirements of the EP toxicity test procedure. If the paragraph about the sampling of ash were re-worded to specify that the waste ash (including metal rings and lids) should be crushed to a uniform particle size in accordance with the EP test requirements, then it may not be perceived to be a problem by Eli Lilly.

Call me if you have questions.

9443.1987(28)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 20 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Lead-Based Paint Residues and Lead Contaminated Residential Soils in Private/Public Housing Units

FROM: Jeffery Denit, Deputy Director
Office of Solid Waste (WH-562)

TO: Walter Kovalick, Deputy Director
Office of Emergency and Remedial Response (WH-548)

The following information is being provided in response to your draft memorandum requesting classification of lead-based paint residues.

BACKGROUND

As you are aware, the question of lead-based paint disposal has been of concern for a long time. As early as 1904, it was recognized that ingestion of paint and paint chips poses a serious health hazard to children. Many buildings, both individual residences and public housing units, especially those built before 1950, contain lead-based paints on interior and exterior walls, window sills, and other surfaces accessible to young children. In addition to paint, some plasters and putties have also been found to contain high levels of lead. Some older primers have been found to contain from 30,000 to 600,000 mg lead per kg of primer. Soils adjacent to residences also have been found to contain high levels of lead due to the leaching of the lead as a result of the weathering of the painted surface. For instance, in a study of lead contamination in Urbana, Illinois, lead was found in concentrations up to 12,000 ppm in soil. Many other cities throughout the United States have similar problems.

Numerous state and Federal agencies have been aware of and concerned about the problem for some time and are pursuing programs to identify lead poisoning and to remove lead-based paint from residences. The Lead-Based Paint Poisoning Prevention Act, as amended, provides the Department of Housing and Urban Development (HUD) with authority to eliminate the hazards of lead-based paint poisoning in HUD-financed and other public residential housing. Unfortunately, the program has been hindered by the lack of a determination of whether or not lead-based paint residues (paint chips, peelings, etc.) should be managed and disposed of as a hazardous waste.

ISSUES

Currently, the question of whether or not lead paint wastes are hazardous is confused by Section 261.4 "Exclusions" of 40 CFR Part 261, Identification and Listing of Hazardous Waste. If these wastes are generated at a commercial facili y and exceed the EP toxicity limit of 5 ppm for lead, then they will be hazardous wastes. However, when the paint residues are generated at private and public residential units, the question arises as to whether the household waste exclusion applies (See 40 CFR 261.4 (b)). This provision excludes household wastes from regulation as solid wastes, and therefore, as hazardous wastes. Household wastes are defined as "any material (including garbage) trash, and sanitary wastes (in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day recreation areas.)"

In the preamble to the Federal Register notice addressing hazardous waste identification and listing (Vol. 49, No. 220, November 13, 1984, page 44998), EPA states that "there is no basis for extending the household waste exclusion to waste such as debris produced during building construction, renovation, or demolition in houses or other residences, as EPA does not consider wastes from these sources to be similiar to those generated by a consumer in a home in the course of daily living." Furthermore, in the preamble to the Final Hazardous Waste Rules, Federal Register, Vol. 45, No. 98, May 19, 1980, EPA noted that wastes generated by Federal agencies are not subject to the household exemption since they cannot qualify as households.

Paint wastes are exempted from regulation as a hazardous waste if they are generated at individual households by the houseowner doing his own removal. On the other hand, if the removal at an individual residence is done by a contractor, the residues are solid wastes and must be evaluated with respect to their hazardousness (EP Toxicity) and must be disposed of according to hazardous waste regulations if found to be hazardous.

In cases where paint residues are regulated under Subtitle C, then commercial contractors who are performing the renovation work and who generate less than 100 kg per month of paint residues (which we believe is likely), will be a conditionally exempt generator (Section 261.5) and their waste will not be subject to regulation under Sections 262 through 266 of RCRA. We believe that only large renovation projects will exceed the 100 kg per month limitations.

While paint residues may not be regulated as hazardous wastes, especially at private individual households or small housing units, information should be made available to homeowners warning them of the hazards associated with improper disposal of paint residues. Directions should be provided regarding the proper disposal of these wastes.

In the case of a larger commercial contractor whose activities result in the generation of more than 100 kg per month of waste, for instance, at a public housing renovation project, then the "hazardousness" of the waste must be determined. In the case of lead-paint wastes, the EP Leachate Test should be performed. If the leachate lead concentration exceeds 5 ppm, then the paint waste is a hazardous waste. If the residues are indeed hazardous, then the generator (removal contractor) must comply with all appropriate regulations, (e.g., Parts 262 Standards Applicable to Generators of Hazardous Wastes and Part 263 Standards Applicable to Transporters of Hazardous Waste), and must send the waste to a facility that is permitted or operating under RCRA interim status.

PROCESSES THAT MAY GENERATE HAZARDOUS WASTE

There are several methods available for removing lead-based paints; however, the conventional lead paint removal techniques currently available are not totally effective and may exacerbate the lead problem by dispersing lead-containing particles throughout the residence. Newer, more effective abatement methods which may be used for lead removal include:

- Peel Away - This consists of a caustic paste that is covered with a plastic film (calcium, magnesium, and sodium hydroxide). This paint removal system can be used on wood, metal, stone and brick, flat and irregular surfaces. It should be noted that in a demonstration project conducted in Baltimore, waste water from the peel away process was found to have a lead content greater than 66 ppm, which was well in excess of the EP toxicity limit of 5 ppm.

- Off-Site Dipping - Wood trim, woodwork, and doors are stripped of paint in enclosed chemical tanks containing methylene chloride. When used for this purpose, spent methylene chloride is a listed hazardous waste.

- High Efficiency Particle Accumulator (HEPA) Sander - This is a power disk sander that attaches to a HEPA vacuum to trap debris. It is used on flat surfaces only. This method would generate a dust which could, depending upon the lead content, fail the EP Toxicity Test.

- Replacement - Removal and replacement of wood trim and old windows with new materials. All of the painted wood products from the residence should be sampled and the EP performed on the wood samples.

In any of the above methods, if the extractable lead exceeds 5 ppm in the waste, then it is a hazardous waste. If the household waste exclusion does not apply then the wastes must be handled and disposed of in accordance with the requirements of 40 CFR Parts 262, 263, and 264, 265 and 270 as appropriate.

CONTAMINATED SOILS

In addition to painted surfaces, the soils immediately adjacent to residences may have high concentrations of lead, due to the lead being leached from the exterior of the structure as the paint weathers and ages. For example, in a study of lead concentration in Urbana, Illinois, concentrations of the lead in the soil were found to range from 132 to 11,760 ppm adjacent to and 240 to 6,640 ppm away from the houses.

Whether or not "contaminated" soils are considered hazardous wastes depends upon whether or not they are 1) removed and transported off-site or left in place, and 2) exceed the lead toxicity limit of 5 ppm.

If the contaminated soil is removed for off-site disposal, it must be evaluated against the characteristics to determine whether or not the soils are hazardous. If the soils fail the existing EP toxicity characteristic, then they must be taken to a RCRA Subtitle C facility. In the case of CERCLA sites such soils must be taken to a RCRA facility which is in compliance with CERCLA requirements for off-site disposal. (See OSWER Directive number 9834.11 "Revised Procedures for Planning and Implementing off-site Response Actions; November 13, 1987.)

The requirements for on-site treatment of lead-contaminated residential soils, which may seldom be practical, differs for CERCLA and RCRA sites. For CERCLA sites, such on-site treatment can be performed without a permit being required. However, for on-site treatment at RCRA sites, a permit is required unless treatment is performed in tanks or containers in compliance with Section 262.34. It should be noted that any on-site treatment must consider the requirements of the individual states in question, which may be more stringent that Federal requirements.

In the case of soil left on site, the property owner will not normally be required to determine whether the soil is a hazardous waste. For soils that are left in place, EPA or the appropriate state agency should set clean-up levels that will ensure that the site will not pose a hazard when returned to normal residential use. I know that the CERCLA program often makes such determinations. For your information, described below is the procedure OSW plans to provide in the RCRA Clean Closure and RFI Guidance Manuals for determining when contaminated soils may safely be left in place and the site returned to residential use. We have had a number of discussions with your staff and we think that there is a general agreement on this approach.

There are two approaches which should be used in making a determination if further soil removal is required. The first is to look at health-based concentration limits in surface soils; the second is an acid precipitation leach test (method 1312 in SW-846).

The health-based limits should be used to determine how much contaminated soil will have to be removed. The RCRA Clean Closure and RFI guidance Manuals provide direction on the appropriate health-based levels to use. Excavation would terminate at the point where soil no longer exceeds the health-based concentration limits.

At that point, method 1312 should be run on soil samples to determine the threat, if any, that might be posed by remaining residual contaminants leaching into ground water. For testing for lead, a pH of 4.2 should be used. In the absence of better numbers, the 5 ppm threshold used for the EP should be the limit for method 1312 as well. Since method 1312 is new, no data on its use is available. Once such data are available, the ppm limit may be revised.

The removed soil should be tested against the EP after removal to see if it fails the 5 ppm limit. If so, it must be sent to a Subtitle C facility. If it does not fail, it can be sent to a Subtitle D facility.

If you have any questions pertaining to the above, please do not hesitate to contact Jerry Coalgate of my staff.

Attachment

NOV 18 1987

Mr. Pat O'Brien
Rashid Geotechnical and
Materials Engineers
P.O. Box 10476
Jubail Industrial City 31961
Kingdom of Saudia Arabia

Dear Mr. O'Brien:

In response to your request of October 24, 1987 for an updated copy of the Toxicity Characteristic Leaching Procedure (TCLP) I have enclosed copies of the two Federal Registers where it has appeared.

The TCLP was actually created for two separate EPA rule-makings. The first rule, the Land Disposal Restrictions Program, was finalized on November 7, 1986. The TCLP was to be used in this rule to determine if a waste could be land disposal by testing it for solvents and dioxins. The second rule, the Toxicity Characteristic, was designed to determine if a waste is hazardous based on its chemical toxicity. This rule was proposed on June 13, 1986 but has not yet been promulgated and will not be finalized until late 1988. At that time, it will replace the current Extraction Procedure (EP) and wastes will then have to be tested for not only the 14 EP constituents, but for an additional 38 organic constituents as well.

If you have any further questions about either of these two rulemakings, or the TCLP, please give me a call at (202) 475-6722 or write me at the following address:

Ms. Gail Hansen
U.S. Environmental Protection Agency
Office of Solid Waste (WH-562B)
401 M Street, SW
Washington, DC 20460
United States of America

Sincerely,

Gail Ann Hansen
Environmental Health Scientist
Methods Section

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 30 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPON

Mr. Phillip C. McGuire
Associate Director, Law Enforcement
Department of the Treasury
Bureau of Alcohol, Tobacco and Firearms
Washington, D.C. 20226

Dear Mr. McGuire:

Thank you for your October 14, 1987, letter regarding the disposal of explosive materials under the Resource Conservation and Recovery Act (RCRA). We have reviewed the information you provided concerning the detonation of seized explosives that you believe would not fall under the RCRA Subtitle C program. We think, however, that the seized explosives may indeed be a solid waste from the moment a decision is made that the explosives must be destroyed and not returned to the original owners.

The basis for the Environmental Protection Agency's (EPA) opinion is that the explosives are not being used for their originally-intended purpose (e.g., demolition of a building, military use, etc.), but rather are being detonated to discard the materials. The explosives, therefore, would meet the definition of a solid waste as defined in 40 CFR Section 261.2(a) and (b). If these explosives exhibit the characteristic of reactivity as defined in 40 CFR 261.23, they would be subject to the RCRA hazardous waste regulations for storage, treatment and disposal. For example, detonation of reactive waste is considered a form of thermal treatment that is subject to Section 265.382, and shipments to the disposal site are subject to 40 CFR Parts 262 and 263.

We recognize the Bureau of Alcohol, Tobacco and Firearms (BATF) has considerable experience in handling explosives. Your internal procedures appear to be comparable to EPA's rules in many respects. There are, however, some differences that may need to be examined. For example, you state that the detonation areas must be at least 1,000 feet from buildings, woods, etc. EPA's regulations (Section 265.382) require farther distances for quantities in excess of 100 lbs.

I would like to suggest that EPA staff meet with your staff to discuss how to reconcile the RCRA rules as they apply to BATF detonation activities. Rulemaking efforts may be required of both agencies to resolve any inconsistencies. In order to schedule a meeting that will be mutually convenient, please contact Mike Petruska, of my staff, on 475-8551. We believe that this meeting will provide the opportunity to discuss several points including what rulemakings may have to be undertaken by either agency, and what exemptions may be possible.

If I can be of any further assistance, please let me know.

Sincerely,

J. Winston Porter
Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 7 1987

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: RCRA Status of Surface Impoundments at Rockwell International, Ashtabula Plant

FROM: Marcia E. Williams, Director
Office of Solid Waste

TO: Judy Kertcher, Acting Chief
Solid Waste Branch (5HS-13)
Region V

This memorandum is in response to your August 6, 1987 inquiry, and subsequent communications between France Norling and the Characteristics Section staff, regarding the RCRA status of the surface impoundments at Rockwell International's Ashtabula plant. Specifically, you requested assistance in determining whether the wastes managed in the impoundments exhibit the hazardous waste characteristic of reactivity.

As you are aware, the reactivity characteristic promulgated in the regulations is a narrative definition. In particular, the regulations define a sulfide bearing waste as reactive when it is exposed to pH conditions between 2 and 12.5 and can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. To assist the Regions and the regulated community in interpreting this rule, the Characterization and Assessment Division provided interim guidance which indicated that wastes releasing more than 500 mg H_2S/Kg waste should be considered hazardous (see enclosure). In addition to the level, a testing method was also provided. We are evaluating the reactivity of the waste in question based on this interim guidance. However, you should note that any final decision as to the hazardousness of the waste (i.e., reactivity) must be based on the regulation. See 40 CFR 261.23.

Based upon the analytical data provided by Region V, the average concentration of sulfide in all the lagoons is below our guidance level of 500 mg/kg; therefore, the wastes are likely not reactive under the hazardous waste rules. The upper bound of the 90% confidence limit, however, is above the guidance level for two of the lagoons in question (lagoons 1 and 3). This suggests that the true concentration of the waste in the impoundments might be above the guidance level. Therefore, before a definitive decision can be made on the true concentration of sulfide in the sludge in lagoons 1 and 3, additional sampling and analysis is recommended.

Should you, or Rockwell, require assistance related to the analytical methods or sample handling procedures, please contact Gail Hansen of the Methods Section at FTS 475-6722. Questions regarding the reacti- vity characteristic in general and its applicability should be directed to David Topping of the Characteristics Section at FTS 382-4798.

Enclosures

cc: Gail Hansen
David Topping

9443.1987(32

DEC 16 ..

Ms. Barbara E. Pace
Hogan & Hartson
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004-1109

Dear Ms. Pace:

This is in response to your letter of August 19, 1987, in which you requested an interpretation of 40 CFR Section 261.31 as it applies to the iron cake waste generated during the production of methyldopa at a Merck and Company facility. Based on the information provided in your letter, the Agency has determined that the iron filter cake generated during the production of methyldopa does not meet the listing description of a spent solvent waste (i.e., EPA hazardous waste No. F005). The basis for our decision is discussed below.

Our understanding of the process is that the iron cake is generated when iron is filtered from the product; toluene is being used for its solvent properties because it is acting as a carrier for the product. Next, the toluene is reclaimed for reuse in the same process.

With regard to the iron filter cake, the preamble and the background document to the rule state that the Agency did not intend to include within the scope of this regulation process wastes that are contaminated with solvent (see Hazardous Waste Listing BD, p.81 May 1980; letter from Steve Silverman to Michael Rodbury, December 16, 1982). The iron filter cake resulting from the production of methyldopa at the Merck facility is a process residual that is contaminated with the toluene solvent. The filter cake, therefore, would not be EPA hazardous waste No. F005.

Please advise your client of our interpretation and make them aware that as a generator of this type waste, they are responsible for determining whether the filter cake exhibits any RCRA hazardous characteristics (e.g., corrosivity, toxicity, reactivity, or ignitability [see 40 CFR 261.21-24]). Also, you should investigate whether this waste is regulated by the state, which may have more stringent regulations. Finally, careful handling of this waste is advised because of the superfund liability that exists for wastes containing CERCLA hazardous constituents.

Our determination is based on the information provided in your letter and any deviations to the described process could result in different interpretation. If you wish to discuss this matter in further detail, please call Yvonne Garbe at (202) 475-6679.

Sincerely,

Marcia E. Williams
Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DEC 31 [illegible]

Ms. Joanna Cole
4460 Singleton Blvd.
Dallas, TX 75212

Dear Ms. Cole:

As mentioned in our telephone conversation of December 16, 1987 regarding the difficulty of analyzing for chlorinated compounds in the leachate from your waste samples, I would suggest that you do the following.

Perform a total constituent analysis of the waste itself using SW-846 methods and assume that all of the compounds leach from the waste. If the guidance levels of the compounds are not exceeded assuming 100% leaching, then no further analysis or testing is required. To determine 100% leachability, the following calculation may be performed on the compounds found in the total analysis:

$$\text{maximum theoretical extract concentration (mg/L)} = \frac{\text{concentration of compound in waste (mg/kg)}}{20^*}$$

* liquid to solid ratio in the TCLP

If the maximum theoretical extract concentration is exceeded, then the waste should be considered hazardous.

If you have any further questions, please give me a call at (202) 475-6722.

Sincerely yours,

Gail Ann Hansen
Environmental Health Scientist
Methods Section (WH-562B)

January 4, 1988

Ms. Teresa Fort
Vice President
Environmental Options, Inc.
Post Office Box 4132
Roanoke, Virginia 24015

Dear Ms. Fort:

This letter responds to your inquiry of November 23, 1987, requesting a written statement clarifying the regulatory status of waste generated by skimming off a toluene-containing paint product floating on water which is the overspray trapped by a waterfall when wood pieces are painted. The waste has a flashpoint below 140°F.

The spent solvent listings (i.e., EPA Hazardous Waste No. F001, F002, F003, F004, and F005) cover wastes generated from solvents which were used for their "solvent" properties, namely, to solubilize or mobilize other constituents, and which cannot be reused unless regenerated, reclaimed, or otherwise reprocessed. The listings do not cover manufacturing process wastes contaminated with solvents that were used as reactants or ingredients in the formulation of commercial chemical products. Hence, waste solvent-based paints are not within the scope of the F001-F005 spent solvent listings because the solvents are ingredients in the paints. Therefore, your ignitable hazardous waste, having EPA Hazardous Waste No. D001, is not subject to the requirements of the land disposal restrictions final rule (51 FR 40572), November 7, 1986) which is applicable to the spent solvent listings.

If you have any further questions, you can call me at (202) 382-4770.

Sincerely,

Stephen R. Weil, Chief
Land Disposal Restrictions Branch

RETYPED FROM THE ORIGINAL

7190E-AL

JAN 13 1988

Dr. Stephen W. Wunderly
Senior Chemist
Beckman Instruments, Inc
Fullerton, CA 92634-3100

Dear Dr. Wunderly:

This letter is in response to your letter of December 4, 1987, requesting an interpretation of the regulatory status of your liquid scintillation cocktail solution product, Ready Safe, under the hazardous waste regulations.

Under EPA's hazardous waste regulations, a waste is considered to be hazardous if it is listed specifically under 40 CFR Part 261, Subpart D, or if it exhibits a hazardous waste characteristic under Part 261, Subpart C. The four hazardous waste characteristics are ignitability, corrosivity, reactivity, and extraction procedure (EP) toxicity for certain metals and pesticides. Section 261.33 contains a list of products that become hazardous wastes when discarded.

Based on the information you provided, the product you describe does not meet any of the listings under Part 261 Subpart D or to exhibit any of the hazardous waste characteristics under Part 261 Subpart C. Radioactivity is not presently included under the RCRA hazardous waste characteristics or listing criteria. Therefore, your liquid scintillation cocktail product when discarded (or intended for discard) does not appear to meet the definition of a RCRA hazardous waste.

Some State and local authorities, however, do regulate radioactive materials as hazardous wastes. Therefore, your customers should contact their State and local authorities for further information on proper disposal of radioactive materials.

MAR 22 1988

Steve Simpson
Chief Process Engineer
Associated Technologies, Incorporated
212 South Tyron Street, Suite 300
Charlotte, NC 28281

Dear Mr. Simpson:

This letter is in response to your January 25 letter to Marcia Williams regarding the regulatory status of asphalt materials used at Associated Technologies, Incorporated. Specifically, you requested a determination as to whether the asphalt is a hazardous waste.

If the asphalt were to be used as a commodity, e.g., for paving roads, then it would not be regulated under the hazardous waste regulations. However, since the asphalt is disposed (buried in a trench) it is a solid waste. In the RCRA program, wastes are defined as hazardous if they: (1) are included on the lists of hazardous wastes contained in Subpart D of 40 CFR Part 261 or are derived from, or are mixtures containing, such wastes; or (2) exhibit any of the hazardous waste characteristics described in Subpart C of 40 CFR Part 261 (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity). The descriptions and analytical data you provided for the asphalt materials (AC-20 and Type I) indicates that they do not appear to be hazardous wastes.

However, the descriptions and analytical data you provided appear to relate to the asphalt materials only, rather than the mixture of the asphalt materials and the concentrate from the film evaporator. Thus, if any of the wastes that contribute to the concentrate are listed wastes, or if the asphalt/concentrate mixture exhibits any of the hazardous waste characteristics, the mixture would be a hazardous waste.

Please note that the interpretation is based upon the information contained in your January 25 letter and reflects current Federal regulations. Since State and local regulations may differ, you are encouraged to contact these authorities to ensure that you are aware of all applicable regulations. Should you have any questions regarding this interpretation, please contact David Topping of the Waste Characterization Branch at (202) 382-7737.

Sincerely,

/S/

Sylvia K. Lowrance
Director
Office of Solid Waste

cc: Emily Roth
David Topping
Dr. Malcolm Knapp
U.S. Nuclear Regulatory Commission

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 14, 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Dr. Jeffrey Mirsky, President
National Diagnostics
1013-1017 Kennedy Boulevard
Manville, NJ 09935

Dear Mr. Mirsky:

This is in response to your letter to Mr. Matthew Straus dated February 4, 1988, in which you request an interpretation of the regulatory status of Ecoscint A and Ecoscint O under the Federal hazardous waste rules. My staff has reviewed the data on the two Ecoscint formulations that you enclosed with your letter dated February 4, 1988. Neither Ecoscint A nor Ecoscint O is listed under 40 CFR 261.31, 261.32, or 261.33.

However, a waste may still be hazardous if it exhibits one or more of the characteristics of hazardous waste (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity) as described in 40 CFR 261.21, 261.22, 261.23, or 261.24. The data you enclosed indicates that neither product is EP toxic and, based on their flashpoints, neither product is ignitable. There is, however, insufficient data provided to make a determination on whether the products are corrosive or reactive. Therefore, if you wish to dispose of these formulations as non-hazardous wastes, you must first determine that they do not satisfy any of the criteria for corrosivity (see section 261.22) or reactivity (see section 261.23).

In addition, any State in which you generate, transport, treat, store, or dispose of these formulations may have regulations that are more stringent than the Federal hazardous waste rules. You, therefore, should check with the State agencies to determine what regulations, if any, apply to handling waste Ecoscint A and Ecoscint O.

If you have any further questions, please contact Wanda LeBleu-Biswas at (202) 382-7392.

Sincerely,

Sylvia K. Lowrance
Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY - 2 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. G. R. Boulden
Ladish Co., Inc.
Kentucky Plant
Cynthiana, KY 41031

Dear Mr. Boulden:

This letter is in response to your telephone conversation with, and March 1, 1988 letter to, David Topping of my staff. Specifically, you have requested an interpretation as to the applicability of certain hazardous waste definitions and regulations.

As you are aware, wastes are considered hazardous if they either (1) are listed in the lists of hazardous wastes described in Sections 261.31 through 261.33; or (2) exhibit any of the characteristics of a hazardous waste described in Sections 261.21 through 261.24. For purposes of clarity, it should be noted that the wastes you describe do not meet the first criterion. That is, since the plant's SIC code is not 331 or 332, the wastes do not meet the definition of EPA Hazardous Waste No. K062, which appears to be the only listing that applies to pickling operations. Therefore, the wastes would only be considered hazardous if they exhibit one of the characteristics or are mixed with another waste that is listed.

The responses to your specific questions follow:

1. Is the spent pickle liquor a hazardous waste if it corrodes 1020 steel at a rate of $\geq$ 0.25 inches/year?

   Yes. This is the definition of a corrosive liquid waste as described at Section 261.22(a)(2).

2. Is the sludge from the bottom of the pickle tank a hazardous waste if its pH $\leq$ 2?

   Yes. This is the definition of a corrosive aqueous waste as described at Section 261.22(a)(1).

3. Does paragraph 264.314 apply to the dewatered lime neutralized pickle sludge that is taken to the local landfill?

   No. Part 264 applies to hazardous waste treatment, storage, and disposal units. To the extent that the "local landfill" is not a hazardous waste facility, Section 264.314 is not applicable.

4. In regards to the wastes discussed above, what if any, regulatory requirements does the EPA have?

   Since it is not clear whether the wastestreams of the Kentucky Plant do or do not exhibit the characteristics described above, a general answer to this question cannot be provided. It is suggested that you direct this question to our Regional Office at the following address:

   U.S. EPA Region IV
   345 Courtland Street, N.E.
   Atlanta, GA 30365
   Attn: James H. Scarbrough
   Residuals Management Branch

Also, please note that State regulations may differ from Federal regulations. Since the Regional EPA offices deal more directly with the States, they are better able to provide the information you desire.

Should you have any questions regarding this response, feel free to contact David Topping of my staff at (202) 382-7737.

Sincerely,

Devereaux Barnes

Devereaux Barnes, Director
Characterization and Assessment
Division

May 31, 1988

Mr. R. Wade Knight
U.S. E.P.A. Region IV
College Station Road
Athens, Georgia 30613

Dear Wade:

We have reviewed the data package submitted by Joseph Stewart of Oak Ridge National Laboratory in support of his petition to use the SOXTEC extraction system, in place of the conventional Soxhlet extraction system (Method 3540), for preparation of PCB samples for Method 8080 at ORNL. The PCB data generated from split samples, run concurrently, using the conventional Soxhlet and the SOXTEC extraction techniques for sample preparation, shows that these preparative techniques are equivalent, within allowable standard deviation limits. These data also demonstrate that Method 8080, utilizing either extraction technique, is appropriate for the analysis of PCB's in soil and clay matrices at the low ppm level. The SOXTEC system actually proved to be the superior technique when time constraints were considered, taking only 2 hours for sample preparation vs. 17 hours for Soxhlet.

From the submitted information, we believe that ORNL has demonstrated the equivalency of the Soxhlet and SOXTEC extraction procedures for generating PCB data, and their petition to use the SOXTEC extraction system for preparation of PCB samples in place of the Soxhlet method (Method 3540) should be granted. Furthermore, we in the RCRA program, with support from Superfund, are in the process of using this ORNL data to develop a general extraction procedure for SW-846 using the SOXTEC apparatus.

We are in process of assembling samples to be split for a multilaboratory validation study of the SOXTEC extraction procedure for PCB's. This will be followed by a program to expand the utility of this technique into a general SW-846 method with a scope equivalent to that of Method 3540.

If we can be of any further assistance to you, please call Barry Lesnik at FTS 382-4761.

Sincerely yours,

David Friedman, Chief
OSW-Methods Section (WH-562B)

cc: Barry Lesnik

UNITED STATES ENVIRONMENT
WASHINGTON, D.C. 20460

OCT 2 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

MEMORANDUM

SUBJECT: Classification of Discarded Class C Explosives

FROM: Sonya M. Stelmack, Acting Chief
Alternative Technology and Support Section

TO: Incinerator Permit Writers' Workgroup

Our section has recently received several inquiries regarding whether Class C explosives intended for disposal are classified as Subtitle C hazardous wastes. Since it is apparent that confusion exists, I would like to clarify this issue.

To date, only those Class C explosives identified as off-specification small arms ball ammunition up to and including 0.50 caliber have been demonstrated not to be subject to the Subtitle C hazardous waste requirements. The Office of Solid Waste concluded that these materials are not "reactive" within the meaning of 40 CFR 261.23(a)(6) based on information provided by Remington Arms Company and the Army (see attached memorandum). Furthermore, in a letter from Marcia Williams to J. Carricato of DOD (also attached) it was emphasized that the OSW determination only applied to the ball ammunitions since other ammunition types of similar caliber may be subject to RCRA. For the remaining Class C explosive wastes, as for any other solid waste not listed in 40 CFR 261 Subpart D, the generator must determine whether his particular waste exhibits the reactivity or other characteristics identified in 40 CFR 261 Subpart C.

We will be working with the Army on the Class C explosives issue as it relates to popping furnaces. If you have any questions on the Class C explosives issue, please contact Lionel Vega at FTS 475-8988.

Attachments

cc: Bruce Weddle
Elizabeth Cotsworth
Lionel Vega
David Friedman
Major Jessie Cabellon

9443.1988(07)

UNITED STATES ENVIRONMENT
WASHINGTON, D.C. 20460

OCT 2 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

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Attachments

cc: Bruce Weddle
Elizabeth Cotsworth
Lionel Vega
David Friedman
Major Jessie Cabellon

9/9/88

MEMORANDUM

SUBJECT: Ignitability Characteristic

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste (OS-300)

TO: William E. Muno, Acting Associate Director
Waste Management Division (5HS-13)

I am responding to your request for clarification of the phrase "under standard temperature and pressure" as used in the ignitability characteristic (40 CFR 261.21). The phrase refers to the conditions used to determine whether the waste is a liquid or a solid. Wastes are evaluated at standard temperature (20 C/68 F) and pressure (1 atm) and, if not a liquid under these conditions are not subject to the flash point criteria of 261.21(a)(1).

Based on the information in your memorandum, Chevron's polystyrene production distillation still bottom tar would not be a liquid within the meaning of the ignitability characteristic and therefore only evaluated against the criteria of 261.21(a)(2).

If you have any further questions, please contact David Friedman of my staff at (FTS) 382-4761.

SEP 9 1988

MEMORANDUM

SUBJECT: Use of the LD50 in the Office of Solid Waste

FROM: Priscilla Halloran
Health Assessment Section (OS-331)

THRU: Stephanie Irene, Chief
Health Assessment Section (OS-331)

TO: Garet Lahvis
Science Applications International Corporation

In response to your inquiry about the Office of Solid Waste's use of the LD50, these values are used as one of the criteria for listing hazardous wastes. Specifically, it is used to designate any Acutely Hazardous Waste. The LD50 value is used unchanged, i.e. there is no extrapolation to humans.

> "...in the absence of data on human toxicity, it has been shown in studies to have an oral LD50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD50 toxicity (rabbit) of less than 200 milligrams per kilogram...(Waste listed in accordance with these criteria will be designated Acute Hazardous Waste)."
> CFR 40 Part 261.11 (a)(2)

The Office of Solid Waste generally evaluates the chronic hazards, systemic and/or carcinogenic, of the constituents of concern in its various regulatory activities.

9443.1988(10)

SEP 13 1988

MEMORANDUM

DATE: September 8, 1988

SUBJECT: Definition of Reactive Waste - Explosivity

FROM: David Friedman, Chief
Methods Section, (OS-331)

TO: Sonya Stelmack,
Assistance Branch, (OS-343)

As you requested, I have reviewed the testing protocols and classification criteria used by the Department of Defense in evaluating the explosivity of material (Army TB 700-2, Navy NAVSEAINST 8020.8, Air Force TO 11A-1-47, DLA DLAR 8220.1).

It is my judgement that the only materials that would exhibit the reactivity characteristic (40 CFR 261.23), due to their potential explosivity, are those that fall into Department of Defense Hazard Classes 1.1, 1.2, and 1.3. Materials rated as Class 1.4 would, therefore, not be an explosive within the meaning of the reactivity characteristic.

cc: Suzanne Rudzinski
Reva Rubenstein
Robert Dellinger

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DEC 6 1988

MEMORANDUM

SUBJECT: Regulatory Status of Solvent-Contaminated Wastestreams from a Pharmaceutical Manufacturer

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

TO: Arthur Moretta, UIC Control Program
Water Division, Region V (5WD-TUB-9)

This memorandum is in response to your request for determination of the regulatory status of aqueous wastestreams generated at an Upjohn Company pharmaceutical facility in Kalamazoo, MI. All answers are based on our best understanding of the process flowsheets which you sent and the information which you provided over the telephone to my staff.

The spent solvent listings cover those streams that are used to solubilize or mobilize other constituents (e.g., for degreasing or fabric scouring, as diluents, extractants, reaction and synthesis media, and similar uses) and through such use, have become contaminated to the extent that they must be reclaimed prior to further use or reuse. See 50 FR 53315, December 31, 1985.

Use as a reactant or an ingredient in the manufacture or formulation of a commercial chemical product is not classified as a solvent use for the purpose of the RCRA hazardous waste listings F001 - F005. Therefore, spent materials from these "non-solvent" uses do not meet the listing descriptions for spent solvents. Also, process wastes that become contaminated with small amounts of solvents during processing are not within the scope of the spent solvent listings. An example of this is an aqueous effluent from a liquid-liquid extraction step, in which a solvent has been used to extract a product from the water and the water becomes contaminated with small amounts of solvent. In this example, the solvent is removed with the product and the solvent-contaminated water is not a spent solvent.

Based on our review of the data submitted, we have made the following determinations:

- All streams being sent to disposal wells from the acetone, methanol, and methylene chloride recovery processes (pp. A, B, C, and D) either meet the listing description for spent solvents or are residuals derived from the treatment of spent solvents and therefore should be designated as an EPA hazardous waste (F001 - F005).

- Those aqueous streams which result from liquid-liquid extraction steps involving solvents are considered process wastestreams and as such, do not meet the listing description for spent solvent streams (see above).

- Filter press effluents such as the one exiting the unit designated "ST-110" (p. 2-1) are considered spent solvent streams because they consist of a solvent that was used as a carrier for the product in the filtration step. However, filter press effluents, such as the one exiting the filter designated "VF-" (p. 4-2) are process wastewater streams, not spent solvent streams, because water was introduced into the production process as the carrier for the product in filtration. In this configuration, the solvent was removed prior to filtration; the small quantity of solvent remaining in the system does not render the wastewater filter press effluent a spent solvent.

- Rinse wastewaters, such as those from product or equipment rinsing steps (pp. 1-3, 2-1) are not considered spent solvents because they are process streams which may have become contaminated with organic solvents.

Although a particular waste stream may not meet the listing description for spent solvents, it may be hazardous if exhibits one or more of the hazardous characteristics described in 40 CFR 261.20-261.24. Certain states may also have special restrictions on the disposal of solvent-contaminated wastestreams.

Thank you for your inquiry. If you have any further questions, please contact Ron Josephson at FTS 475-6715.

Attachments

cc: Eric Callisto, OW/ODW (WH-550)

FILE COPY

JAN 27 1989

Ms. Karen Heyob
Environmental Engineer
O M Scott & Sons
Marysville, OH 43041

Dear Ms. Heyob:

This letter will clarify our telephone conversation, and your follow up letter, with respect to use of total concentration to demonstrate that a waste does not exhibit the characteristic of Extraction Procedure Toxicity.

The evaluation to be performed is as follows:

1. Determine the concentration of the analyte of concern in the waste expressed in g/100g (A).

2. Determine the waste's percent liquid (B).

3. Calculate the maximum theoretical extract concentration, in mg/L, (MTEC) using the formula.

$$MTEC = \frac{(A)}{[B + (20)(100-B)]}$$

4. If MTEC is below the Extraction Procedure Toxicity characteristic regulatory level, then the waste does not exhibit the characteristic. If MTEC is above the regulatory level, then one would have to run the test to show that the waste is non-hazardous.

Sincerely yours,

David Friedman
Chief, Methods Section

cc: Gary Daugherty
Manager, Environmental Engineering
O M Scott & Sons

Rebecca Strom
EPA, Region V

APR 12 1989

Mr. John P. Stockli
White, Osterman, and Hanna
One Commerce Plaza
Albany, NY 12260

Dear Mr. Stockli:

This is in response to your letter of March 27, 1989, in which you asked about the regulatory status of waste solvent-based glue. Specifically, you wished to know whether or not the F-listings (40 CFR 261.31) apply to characterization of waste dried or non-solidified glue.

The spent solvent waste codes (F001 - F005) apply only to spent solvents that are used for their solvent properties. See 50 FR 53316 (December 31, 1985). These listings do not apply to solvent-containing products that may become wastes if the solvents are ingredients, such as for paint or glue. However, the waste glue could meet one of the hazardous waste characteristics, especially if it is in the non-solidified form. (See 40 CFR 261.20 - 261.24.) The generator is responsible for ascertaining whether the waste exhibits one or more of these hazardous characteristics. In addition, the generator should review state regulations, which may be more stringent than Federal regulations.

Thank you for your inquiry. If you have any further questions, please contact Ron Josephson of my staff at (202)475-6715.

Sincerely,

Devereaux Barnes
Director
Characterization and
Assessment Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 20 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

Ms. Lenore H. Schupak
Director, Environmental Technology
American Standard, Inc.
40 West 40th St.
New York, NY 10018

Dear Ms. Schupak:

This letter is in response to your March 7, 1989, letter regarding the proposed Maximum Contaminant Level Goal (MCLG) for barium in drinking water. In addition to your support for the proposed MCLG, you suggested that the EP Toxicity level for barium (Table 1 in 40 CFR 261.24) be revised immediately upon any change to the MCL.

The EP Toxicity levels are based upon the constituents' expected fate and transport as well as their MCLs. Currently, the estimated fate and transport processes are represented by a factor of 100. That is, the EP Toxicity levels are equal to 100 times the MCLs. The Agency is currently re-evaluating the fate and transport of the EP constituents to determine whether the 100 factor is an appropriate estimate of these processes. Since this factor may change, it is not presently clear whether a change in the regulatory level (which depends upon both this factor and the MCL) would be appropriate. Therefore, needed changes to the EP regulatory levels (resulting from changes in either or both of these values) will be evaluated on a case-by-case basis and any warranted changes to the regulatory levels will be proposed as modifications to 40 CFR 261.24.

Should you have any further questions on this issue, feel free to contact Reva Rubenstein, Chief of the Characteristics Section, at (202) 382-4798.

Sincerely,

Sylvia K. Lowrance, Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENC

MAY 23 1989

Honorable Lloyd M. Bentsen
United States Senator
961 Federal Building
Austin, Texas 78701

Dear Senator Bentsen:

Thank you for your April 24, 1989, letter regarding Hollis E. Ervin's concerns about the March 14, 1989, court opinion supporting the Environmental Protection Agency's (EPA) interpretation of the regulatory status of contaminated environmental media (such as soil and ground water).

EPA believes that a hazardous waste does not necessarily lose its hazardous characteristic when it is combined with an environmental medium, and that, unless demonstrated otherwise, the contaminated medium should be managed as a hazardous waste because it contains a hazardous waste. (The environmental medium itself is not a hazardous waste.) To consider contaminated media as newly generated wastes for purposes of determining whether they are hazardous could be an incentive for the purposeful contamination of environmental media with hazardous waste in an effort to avoid regulations otherwise applicable.

EPA has established a process under which persons may petition the Agency to have their waste removed from regulatory control on a case-by-case basis (sometimes called "delisting"). Under this process, EPA evaluates the waste in question and determines whether it needs to be regulated as a hazardous waste. In addition, EPA is currently examining ways to streamline this process - e.g., setting de minimis levels of contaminants which, when met, would allow for the management of wastes outside the structure of the hazardous waste regulations.

As found by the D.C. Court of Appeals, the "contained in" rule has been a consistent and reasonable interpretation since the promulgation of the applicable regulations in 1980. To change an established regulatory interpretation, the Agency is required to provide notice and an opportunity for public comment (i.e., regulatory interpretations cannot be changed at the "whim" of EPA).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Thank [redacted] for your interest in the hazardous waste program. [redacted] I can be of further assistance to you, please feel free to call me, or have your staff contact Bob Dellinger at (202) 475-8551.

Sincerely yours,

Sylvia K. Lowrance, Director
Office of Solid Waste

OS305/DELLINGER/T. MCMANUS - 382-4646/CSH/5-16-89/
CONTROL #AL892146/DUE DATE:5-19-89/DISK #23/NAME:BENTSEN

JUL 10 1989

Laura Belden
Regulatory Affairs Specialist
USPCI
Suite 400 South
2000 Classen Center Building
Oklahoma City, Oklahoma 73106

Dear Ms. Belden:

This is in response to your letter of May 12, 1989 to Joshua Sarnoff of the Office of General Counsel. You requested that EPA clarify an April 1987 Hotline report on 1,1,1-trichloroethane (TCA) contained in a sand-metal-solvent mixture, created from degreasing metal parts in TCA, grinding the parts, and filtering the cooling fluids. EPA continues to believe that this waste stream does not meet the F001 listing description.

The sand-metal-solvent mixture is a process waste stream contaminated with solvent, not a spent solvent waste or a mixture of wastes with spent solvents. The Agency clarified the scope of the spent solvent listings on December 31, 1985 (50 FR 53316), and clearly indicated that listed spent solvent wastes do not include such process wastes. Further, unless these process wastes are characteristically hazardous (see 40 CFR 261.20 - 261.24), the waste minimization certification of RCRA Section 3002(b) does not apply. Please be aware that states may have more stringent hazardous waste regulations.

Thank you for your inquiry. If you have any further questions, please contact the RCRA/Superfund Hotline at (800)424-9346.

Sincerely,

Devereaux Barnes
Director
Characterization and
Assessment Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 11 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Clarification of RCRA Authorities Regarding U.S. Army Corps of Engineers Dredge Sediments

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste (OS-300)

TO: Basil G. Constantelos, Director
Waste Management Division
Region V

This memorandum responds to your May 30, 1989, request for clarification concerning RCRA authorities to regulate dredged sediments that exhibit one of more characteristics of a hazardous waste. As you stated, EPA's policy regarding such materials is defined in the January 23, 1986, memorandum from Marcia Williams to David Stringham. However, the U.S. Army Corps of Engineers (USACOE) published a Federal Register notice on April 26, 1988 (53 FR 14902), in which USACOE concluded that dredged materials are not solid waste and, therefore, not subject to RCRA. These contradictory statutory interpretations and policies have caused confusion in properly implementing RCRA authorities over dredged sediments.

The Agency's policy regarding the applicability of RCRA to dredged sediments remains unchanged from the January 23, 1986, memorandum. The pertinent points of this policy are: 1) point source discharges subject to Section 402 of the Clean Water Act (CWA) are exempt from RCRA, 2) hazardous wastes dumped into surface water in a manner that does not trigger Section 402 of the CWA are subject to RCRA regulation, as well as any sediments that are contaminated by such discharges (under the contained-in rule), and 3) in cases where the pollutants discharged into surface water are not subject to RCRA, sediments would be regulated under Subtitle C of RCRA only when they are dredged from the surface waters and only if they exhibit one or more characteristics of hazardous wastes.

The Office of Solid Waste and the Office of General Counsel are currently evaluating the best approach to take in addressing USACOE's April 26, 1988, Federal Register notice. I agree that a definitive statement of RCRA authorities over dredge sediments is needed to clarify the regulatory requirements.

Thank you for bringing this issue to our attention. Should you have any questions, your staff should contact Mitch Kidwell, of my staff, at FTS 475-8551.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1989(08a)

Mr. Travis P. Wagner
Labat-Anderson Incorporated
2200 Clarendon Boulevard
Suite 900
Arlington, VA 22201

OCT 5 1989

Dear Mr. Wagner:

I am writing in response to your letter requesting written clarification of the Resource Conservation and Recovery Act (RCRA) definition of a liquid as it applies to ignitable and corrosive wastes.

There are three RCRA definitions which include the term "liquid". The definitions vary depending on the specific regulatory application. For hazardous waste identification by means of the three relevant characteristics (Ignitability, Corrosivity or Extraction Procedure Toxicity), the general term liquid applies. "Liquid" is defined as the material (liquid phase) that is expressed from the waste in Step 2 of Method 1310 (the Extraction Procedure).

As Mr. Friedman indicated, only those wastes that contain a liquid component are subject to testing against the flash point criteria of Section 261.21. Therefore, if a waste does not yield a liquid phase when subjected to Method 1310, it cannot be an ignitable waste under the criteria of Section 261.21(a)(1).

Similarly, Section 261.22(a)(2) states that a liquid waste is a corrosive waste if it exhibits a pH less than or equal to 2 or greater than or equal to 12.5. If a waste does not yield a liquid when subjected to Method 1310, it is not evaluated against this criteria and is not a corrosive waste.

A second definition of liquids which is applied to determine whether a drummed waste is prohibited from land disposal because it contains "free liquid", is found in Method 9095 (the Paint Filter Test). If any material drips from the filter during the test, the waste is deemed to contain "free liquid" and is banned from land disposal.

CONCURRENCES								
L	OS-331	OS331	OS-330	CAD				
SURNAME	Friedman	McBride	RAThompson	DB				
DATE	10/3/89	10/3/89	10/4/89	10/4/89				

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

Many people have used the Paint Filter Test to evaluate wastes for ignitability or corrosivity. This is done to save time and effort. Since liquids that separate out of the waste using Method 9095 are generally also liquids using Method 1310 wastes that contain ignitable or corrosive liquids using Method 9095 can generally be considered to be ignitable or corrosive wastes.

The third definition of liquids was developed when the 1984 amendments to RCRA prohibited the use of adsorbents to solidify liquid wastes if the adsorbents would release the contained liquids under landfill pressures. Prohibited adsorbents are those that contain "releasable liquids". While the Agency has not yet promulgated a specific test procedure for defining when a waste contains "releasable liquid", a draft procedure has been developed and proposed - Method 9096 (the Liquid Release Test).

I trust that this explanation clarifies the RCRA definitions. Please contact us if you need further assistance.

Sincerely,

Sylvia K. Lowrance
Director
Office of Solid Waste

3. Removal of Toxicity Characteristic Wastes from a Surface Impoundment

A generator produced a solid waste and disposed of his waste in an on-site surface impoundment. After the September 25, 1990, effective date of the toxicity characteristic (TC) rule, the waste would meet the definition of a newly-identified TC waste (40 CFR §261.24). If he chooses to remove the waste from his surface impoundment and dispose of it off-site, would his surface impoundment be a regulated unit under Subtitle C of RCRA?

No, not under the following circumstances. The generator may remove the waste from the surface impoundment prior to the effective date of the TC rule and the unit will not be regulated as a subtitle C unit. EPA has also clarified that the Agency would not normally consider the one-time removal of waste from a unit on or after the TC effective date to bring the unit into the hazardous waste management system (e.g., as a storage unit). As stated in the September 27, 1990, Federal Register clarification notice, "EPA does not consider one-time removal of waste from a unit on or after the TC effective date, in and of itself, to make the unit a storage unit and thus subject to Subtitle C. The Agency does not view one-time removal of waste as part of a closure as changing the status of the unit, as long as there has not been ongoing management of the waste in the impoundment." The preamble language goes on to state that this removal is beneficial to human health and the environment since it would eliminate potential sources of groundwater contamination. (55 FR 39410)

Should the generator choose to remove the hazardous waste from the unit on a one-time basis, he may use the impoundment as a non-Subtitle C unit (provided no other hazardous wastes are generated, managed, or disposed of in the unit). On the other hand, if the generator chooses to leave the waste in place and does not use the unit for hazardous waste management after the effective date of the TC rule (for example, if he intends for the surface impoundment to be the final disposal site for the waste), the unit would not be a regulated Subtitle C surface impoundment.

9443.1989(09)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 17 1989

MEMORANDUM

SUBJECT: Waste that Exhibits Two Characteristics

FROM: Devereaux Barnes, Director
Characterization and Assessment Division

TO: Conrad Simon, Director
Air and Waste Management Division

This is in response to the October 23, 1989, letter from Christine McCulloch to Steve Cochran, and follows up on my memo of September 28, 1989 to you regarding Fisher Scientific. Apparently Fisher generates a nitric acid waste that is both an oxidizer (which makes it ignitable under RCRA rules) and is corrosive. If this is the case, then this waste is both D001 and D002. EPA Federal regulations do not require a generator to place waste codes on the manifest, but the waste must be managed in compliance with all special requirements for ignitable (e.g., 264.17) and corrosive waste.

Please feel free to give me a call at 8-382-4637 if you have any further question.

!!!

9443.1989(10)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FILE COPY

December 13, 1989

Mr. William Berning
CC Johnson & Malhotra, P.C.
Suite 215
215 Union Boulevard
Lakewood, CO 80228

Dear Mr. Berning:

I am writing in response to your letter requesting clarification regarding when it is necessary to digest EP (Method 1310) and TCLP (Method 1311) extracts prior to metals analysis.

The Extraction Procedure Toxicity Characteristic (40 CFR 261.24) states that a waste is a hazardous waste if the extract of the waste contains any of the listed constituents above the indicated regulatory levels. Method 1310 and 1311 extracts should be digested prior to metals analysis for several reasons. The two most important ones being:

1) Extracts often consist of a mixture of phases. Unless the extract is digested prior to the determinative step all of the metallic species may not be in a form which gives an accurate detector response (e.g., ICP or AA).

2) During cold storage of Method 1310 extracts, it has been reported that precipitation sometimes occurs. Unless the extracts are digested prior to the determinative step, any metal that precipitates would not be counted and this would lead to an underestimation of extract concentration and a potentially incorrect hazard classification.

The Resource Conservation and Recovery Act (RCRA) regulations hold the regulated individual responsible for accurately characterizing the properties of the wastes. Some wastes may yield extracts which do not require digestion to yield accurate concentration results. However, persons who analyze Method 1310 or 1311 extracts without prior digestion of the extracts, and who therefore incorrectly characterize their waste would be deemed not to have made a good faith effort to characterize their waste. In fact, Step 8.14 of Method 1311 (40 CFR 268, Appendix I) specifically states that, "TCLP extracts to be analyzed for metals, other than mercury, shall be acid digested."

I hope that the above answers your questions.

Sincerely,

David Friedman
Chief, Methods Section
Office of Solid Waste (OS-331)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FILE COPY

James W. Poirier
Cleary, Gottlieb, Steen & Hamilton
1752 N St., NW
Washington, DC 20036

Dear Mr. Poirier:

I am writing in response to your letter of December 1, 1989 regarding the ignitability characteristic.

The Office of Solid Waste (OSW) currently has two test protocols for determining the ignitability of a liquid - the Pensky-Martens Closed Cup (SW-846 Method 1010) and the Setaflash Closed Cup (SW-846 Method 1020). These methods are for liquids only and do not establish that a solid possesses the ignitable characteristic. For solids, there is only a narrative definition set forth in the regulation itself:

> "It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and when ignited, burns so vigorously and persistently that it creates a hazard."

The OSW has been conducting work to develop test methods for ignitable solids. A method has been developed but has not been evaluated and no decision has been made on the appropriate regulatory thresholds. Presently, other priorities have resulted in the work being put on hold.

If you have any further questions, please contact Gail Hansen of my staff at (202) 475-6722.

Sincerely yours,

Devereaux Barnes
Director,
Characterization and Assessment Division

cc: Alec McBride
David Friedman
Gail Hansen
Ann Ryan

SEP 6 1991

Ms. DeAnna M. Senegal
AnalytiKEM Inc.
2925 Richmond Avenue
Houston, TX 77098

Dear Ms. Senegal,

I am writing in response to your letter of June 28, 1991 requesting clarification on the determination of the ignitability characteristic. The characteristic, as defined in 40 CFR §261.21, is applicable to both solid and liquid wastes; however, test methods are currently not available for solid waste. Because standardized, approved methods are not available, the characteristic determination for solids (e.g., determining whether solids will cause vigorous and persistent fires through friction, absorption of moisture, or spontaneous chemical changes, as listed in the regulations) has to depend upon knowledge of the waste stream, as noted in 40 CFR ~~§261.1(a)(2)(ii)~~ and §262.11(c)(2). Waste analyses of solid materials may be helpful for determining if any of the detectable compounds are known to be ignitable. Please note that meeting any (not all) of the properties specified in the definition of ignitability qualifies a waste as characteristically ignitable.

There are no specific definitions of "liquid" (i.e., 5%, 10%) in the ASTM method D-93 (Standard Test Method for Flash Point by Pensky-Martens Closed Tester) but the types of materials that may be tested are specified in the method as "fuel oils, lube oils, suspensions of solids, liquids that tend to form a surface film under test conditions, and other liquids of similar viscosities". You are correct to note that results obtained from applying the test outside of the specifications (e.g., paddle does not turn freely) do not provide proof for a characteristic determination. However, if you are assured that the paddle moves freely, then you may accept the determined flashpoint as reliable.

Flash point and ignitability are not used interchangeably. Instead, flash point is used as an indicator of

ignitability. As stated in the 1990 D-93 method, "flash point measures tendency of the sample to form a flammable mixture with air under controlled laboratory conditions. It is only one of a number of properties which must be considered in assessing the overall flammability hazard of a material".

Regarding your question about how the results should appear to clients if the procedures are not followed as written, specific notations according to any deviation from the method should be cited in the client's report.

If you have any further questions, please call me at (202) 260-4761.

Sincerely yours,

Gail Hansen
Chief,
Methods Section
(OS-331)

cc: Alec McBride
Dave Topping
John Austin
David Bussard
Mark Badalamente, OGC
RCRA/Superfund Hotline
MICE Line

MAR 9 1992

Charles A. Licht, President
CLEA, Inc.
P.O. Box 315
Olympia Fields, IL 60461

Dear Mr. Licht:

I am writing in response to your letter of February 13, 1992 to Sylvia Lowrance concerning clarification of the corrosivity characteristic as it applies to solids.

The current characteristic defines a corrosive waste as a solid waste that: a) is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5 b) or is a liquid and corrodes steel at a rate greater than 6.35 mm per year. We have two methods in SW-846 for measuring the corrosivity of these liquids. One method is for aqueous liquids (Method 9040, pH electrometric measurement) and the other method is for non-aqueous liquids (Method 1110, corrosivity of steel).

We realize that the existing corrosivity characteristic has two problems: 1) it applies only to liquid wastes, thus corrosive solids such as lye, solid acids, or in your case, baghouse dusts, are not covered and 2) the term "aqueous" (as in aqueous liquid) has not yet been defined, thus, there is a chance that some users of our method for pH determination will incorrectly apply the method to certain non-aqueous wastes.

With respect to solids, the Office of Solid Waste has developed a method that appears to be suitable for determining their corrosivity. This method, Method 9045 - Soil and Waste pH (copy attached), mixes a waste sample with water in a 1:1 ratio and determines the pH of the solution with a pH meter. Method 9045 will be included in the proposal for the second update to the third edition of SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods." We anticipate the proposal appearing in the Federal Register sometime this spring, with promulgation sometime in 1993.

Promulgation of Method 9045 would not by itself expand the scope of the corrosivity characteristic. This requires that the Environmental Protection Agency (EPA) draft regulatory language to include corrosive solids and to employ Method 9045 for their determination. We are not sure at this time when that will happen. In the interim, we recommend the use of Method 9045 for the determination of corrosive solids.

If you have any additional questions, please call Ollie Fordham of my staff at (202) 260-4778 or call the Methods Information Communications Exchange (MICE) at (703) 821-4789. MICE calls are recorded on an answering machine and, for the majority of questions, responses are provided within 24 hours. I hope this information has sufficiently addressed your questions.

Sincerely yours,

Gail Hansen

Gail Hansen
Chief,
Methods Section (OS-331)

Enclosure

cc: Alec McBride
Ollie Fordham
Kim Kirkland
Rafael DeLeon, OGC

RCRA/SUPERFUND/OUST HOTLINE MONTHLY REPORT QUESTION
JULY 1992

3. Alcohol-Content Exclusion for the Ignitability Characteristic

A generator produces a wastestream with a flash point of 54 degrees Celsius that contains the following three components: water (77 percent), alcohol (13 percent), and a non-alcoholic liquid component (10 percent). According to the "alcohol exclusion" in 40 CFR §261.21(a)(1), the characteristic of ignitability will not apply to an aqueous solution that contains less than 24 percent alcohol and which has a flash point less than 60 degrees Celsius. Does the presence of a non-alcoholic component cause the aqueous solution to be regulated as an ignitable waste (D001)?

No, the additional non-alcoholic liquid component will not cause the wastestream to be regulated as a D001 waste. Despite the presence of the non-alcoholic liquid component, the wastestream continues to qualify for the alcohol exclusion in 40 CFR §261.21(a)(1). According to the May 19, 1980, Federal Register (45 FR 33108), EPA originally intended for the alcohol exclusion to exempt alcoholic beverages and some types of latex paints, which exhibit low flash points due to the alcohol content, but do not sustain combustion because of the high water content. The alcohol exclusion in 40 CFR §261.21(a)(1), however, is not limited to those wastes mentioned in the May 19, 1980, Federal Register. It applies to all aqueous solutions containing less than 24 percent alcohol, even if additional non-alcoholic components are present. EPA clarified in the June 1, 1990, Federal Register (55 FR 22543) that the term "alcohol" in §261.21(a)(1) refers to any alcohol or combination of alcohols. The Agency notes, however, that if the alcohol is one of those alcohols specified in EPA hazardous waste codes F001-F005 and has been used for its solvent properties, the waste must be evaluated to determine if it should be classified as an F-listed spent solvent waste.

The alcohol exclusion for the ignitability characteristic was adopted from the Department of Transportation's (DOT) definition of "combustible liquids" in 49 CFR §173.115(b). The alcohol exclusion in 49 CFR §173.115(b)(2)(ii) applies to aqueous solutions containing 24 percent or less alcohol by volume which contain no less than 50 percent water. Since EPA originally intended to be consistent with DOT regulations when promulgating the alcohol exclusion in §261.21(a)(1), the 50 percent water stipulation may be applied to the ignitability characteristic. Therefore, as clarified in an internal EPA memorandum, for the purpose of the ignitability characteristic in §261.21(a)(1), "aqueous" means a solution containing at least 50 percent water by weight.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 26 1992

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Larry F. Runyan
American Furniture Manufacturers Association
223 South Wrenn Street
P. O. Box HP-7
High Point, NC 27261

Dear Mr. Runyan:

I am writing in response to your letter of July 1, 1992 to Mr. William K. Reilly, Administrator of the Environmental Protection Agency in which you petition EPA to accept ASTM D4982-89 (Method B) as an equivalent method of testing for the ignitability of solid waste.

In order to determine whether a method is equivalent to one in SW-846, the SW-846 method it is intended to be equivalent to must already be promulgated and be required for use in a regulation. In your case, a method for the ignitability of solid waste has not yet been promulgated. Therefore, equivalency cannot be demonstrated.

The Office of Solid Waste is currently developing a test to determine the ignitability of solids. Our procedure is based on the Department of Transportation burn rate test. As we do not have a promulgated method to test for the ignitability of solids at present, we recommend ASTM D4982-89 (Method A) as interim guidance. This ASTM method is a good qualitative test of ignitability, but is not quantitative enough to be considered for a SW-846 promulgated method. It only addresses ignition and does not provide any quantitative measurement of how vigorously the material burns. We do not recommend ASTM D4982-89 (Method B) as it only tests the vapors above the sample and not the solid sample itself.

We do not require generators to test or to specifically use the methods listed in SW-846, except under the five circumstances listed in the following sections of 40 CFR:

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(1) 260.22(d)(1)(i) - Submission of data in support of petitions to exclude a waste product at a particular facility (delisting petitions).

(2) 261.22(a) - Evaluation of wastes against the Corrosivity Characteristic (corrosivity).

(3) 261.24(a) - Evaluation of wastes against the Toxicity Characteristic (mobility of toxic species).

(4) 264.314(c) and 265.314(d) - Evaluation of wastes to determine if free liquid is a component of the waste (free liquid).

(5) 270.62(b)(2)(i)(C) - Analysis of wastes prior to conducting a trial burn in support of an application for a hazardous waste incineration permit (incinerator permit).

SW-846 methods are only intended to serve as a guidance for the regulated community. If the generator can demonstrate that his/her method has documented QC and is sensitive enough to meet the regulatory limits, then the generator may use that method in place of an SW-846 method.

I hope that this information will be of use to your analytical program. If you have any questions, please feel free to call me at (202) 260-4778.

Sincerely,

Oliver M. Fordham, Jr.

Oliver M. Fordham, Jr.
Chemist
Methods Section

cc: Alec McBride, TAB
Gail Hansen, TAB
Dave Topping, WIB
Tom Beisswenger, OGC

RCRA/SUPERFUND/OUST HOTLINE MONTHLY REPORT QUESTION
SEPTEMBER 1992

2. "Aqueous" as Applied to the Corrosivity Characteristic

According to 40 CFR §261.22, a solid waste exhibits the characteristic of corrosivity if it has either of the following properties:

- *It is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5 (§261.22(a)(1))*
- *It is a liquid which corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year (§261.22(a)(2)).*

Many aqueous wastes are liquids. Must aqueous liquid wastes be evaluated for both pH and rate of steel corrosion?

While nonaqueous liquids need only be tested using the steel corrosion test, aqueous liquids must be evaluated for both pH and rate of steel corrosion. If an aqueous liquid has a pH less than or equal to 2.0 or greater than or equal to 12.5, or corrodes steel at a rate greater than 6.35 mm per year, it is regulated as a corrosive waste (D002). Therefore even if an aqueous liquid passes the §261.22(a)(1) pH test (pH greater than 2.0 and less than 12.5), if it corrodes steel at a rate greater than 6.35 mm per year, it exhibits the characteristic of corrosivity.

According to the background document for this characteristic, Corrosivity Characteristic: Identification and Listing of Hazardous Waste Under RCRA Subtitle C, Section 3001, an aqueous waste with a pH between 2.0 and 12.5 may, under certain conditions, corrode steel at a rate greater than 6.35 mm per year. Several factors influence the rate of metal corrosion. In addition to pH, other important factors include temperature, metal(s) involved, and aeration and composition of the corrosive medium. The background document indicates that although alkaline solutions, in practice, do not severely damage steel, ". . . a corrosive material with a pH less than 4.0 will cause iron to dissolve rapidly." In other words, although an aqueous waste in liquid form that has a pH between 2.0 and 4.0 (i.e., an acidic solution) passes the pH test, the waste may nonetheless fail the steel corrosion test and be regulated as a corrosive (D002) hazardous waste.

Although there is no regulatory definition of the term "aqueous," for purposes of the corrosivity characteristic an aqueous waste is defined as a waste for which pH is measurable. Since not all liquid wastes are in a form amenable to pH measurement, this operational definition of aqueous implies that the presence or absence of measurable dissociated hydrogen ions divides the universe of liquid wastes into two mutually exclusive categories: aqueous and nonaqueous. While all liquid wastes must be evaluated for rate of steel corrosion, those liquid wastes classified as aqueous are subject to both the pH and steel corrosion tests. The background document explains that those who generate or manage a waste can best determine whether it is in a form suitable for pH measurement, and therefore an aqueous waste requiring the pH test.

This working definition of aqueous means that aqueous wastes can be in nonliquid form. Suspensions, sols, or gels for which pH is measurable are examples of aqueous nonliquids. The background document for the corrosivity characteristic states that, during a pH determination, the form of the waste should be taken into account. As nonaqueous liquids are subject to the steel corrosion test only, aqueous nonliquids only require evaluation for pH. Therefore, by definition, an aqueous nonliquid with a pH greater than 2.0 and less than 12.5 cannot be regulated as D002, since §261.22(a)(2) applies only to liquids that corrode steel.

The operational definition of aqueous for the characteristic of corrosivity differs from the meaning of aqueous as the term applies to the ignitability characteristic. Under §261.21(a)(1), aqueous solutions containing less than 24 percent alcohol by volume are excluded from regulation as ignitable liquids. In an internal Agency memorandum clarifying this exclusion, an aqueous solution is defined as a solution which contains at least 50 percent water by weight. Applying this 50 percent water stipulation to define "aqueous" in the context of §261.22(a)(1) is inappropriate. Instead, for purposes of the corrosivity characteristic, aqueous means in a form amenable to pH measurement.

RCRA/SUPERFUND/OUST HOTLINE MONTHLY REPORT QUESTION
DECEMBER 1992

1. Hydrochlorofluorocarbons Used in Degreasing

According to 40 CFR §261.31, chlorinated fluorocarbons (CFCs) used in degreasing are classified as F001. EPA included CFCs used in degreasing in the F001 listing because of concern for their potential contribution to the depletion of stratospheric ozone. Are hydrochlorofluorocarbons (HCFCs) used in degreasing also regulated as F001?

Because the F001 listing description includes all chlorinated fluorocarbons, hydrochlorofluorocarbons used in degreasing operations are also classified as F001. Of course, the solvent formulation must meet the 10 percent (by volume) before-use criterion in the F001 listing. Hydrogenated fluorocarbons (HFCs), however, are not included in the scope of the F001 listing.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 18, 1993

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mssrs. J.L. Broadhurst and M.W. Godfrey
General Mining, Metals and Minerals Limited
Process Research
200 Hans Strijdom Drive, Randburg
Private Bag X10014, Randburg 2125
Republic of South Africa

Dear Sirs,

I have received your letter of 22 December 1992, requesting additional information on three hazardous waste testing issues, and am pleased to be of service. In your first question, you noted that some people believe that atmospheric oxidation of Cr(III) to Cr(VI) in a landfill containment may pose a risk to the environment. The Agency does not have any data which suggest that Cr(III) will oxidize to Cr(VI) in a landfill, and that if managed properly, the wastes indicated in Part 261.4(b)(6)(i)(A) will not pose a threat to human health and the environment. The Agency will, however, be pleased to receive and review any such data which you forward to us.

In your second question, you expressed concern that the TCLP is not a realistic indication of the long-term stability/mobility of elements in solid wastes, and requested additional information on the choice of experimental conditions used in the test. The TCLP was developed to model leachability of hazardous constituents in a specific waste management scenario, e.g., co-disposal of solid waste with municipal waste in a sanitary landfill. The test is not expected to model other waste management conditions. Data from the test are useful for comparison against toxicity standards, or against other TCLP data sets, only when the single specified set of experimental conditions are used. I am including with this letter (as Attachment 1) additional information that discusses the rationale and process for selection of experimental conditions.

Finally, in your third question, you asked which analytical methods should be used to determine the concentrations of total cyanide and cyanide amenable to chlorination. I have enclosed the appropriate methods (Methods 9010 and 9012 from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)) to this letter as Attachment 2.

If I may be of further assistance, please do not hesitate to contact me.

Sincerely,

Ollie Fordham

Ollie Fordham
National Inorganics Program Manager, RCRA

RCRA/SUPERFUND/OUST HOTLINE MONTHLY REPORT QUESTION
FEBRUARY 1993

1. Mixtures of Used Oil and Characteristic Hazardous Waste

A manufacturer generates used oil that exhibits the toxicity characteristic (TC) for lead (D008). On one occasion, the used oil is mixed with an unlisted spent solvent that is hazardous due to the characteristic of ignitability (D001) and the TC for benzene (D018). On another occasion, the used oil is mixed with a spent solvent that is hazardous solely because it exhibits the characteristic of ignitability (D001). After mixing, both wastestreams exhibit only the TC for lead and are sent to be burned for energy recovery in an industrial boiler. Do both mixtures qualify for regulation as used oil under 40 CFR Part 279 standards for used oil management?

The first mixture must be managed as hazardous waste (D008) and the second mixture must be managed as used oil. Section 279.10(b)(2) specifically addresses mixtures of used oil and characteristic wastes, drawing a critical distinction between the two mixtures described above. The first mixture is addressed in §279.10(b)(2)(i), which states that a mixture of characteristic hazardous waste and used oil must be handled as a hazardous waste if it displays any characteristics of hazardous waste. This section applies to any mixture of used oil and characteristic hazardous wastes, other than wastes that are hazardous solely because they exhibit the characteristic of ignitability. Since the first mixture contains a characteristic hazardous waste that is hazardous because of ignitability and toxicity, and the mixture continues to display the TC for lead, it is considered hazardous waste. In order to qualify for classification as used oil, this mixture must be free of all characteristics, including those originating from the used oil (D008) and those stemming from the hazardous waste (D001 and D018).

Section 279.10(b)(2)(iii) addresses the second mixture and is more specific. It dictates that a mixture of used oil and a characteristic hazardous waste, which is hazardous solely because it displays the characteristic of ignitability, may continue to be managed as used oil provided that the resulting mixture is not ignitable. Since the second used oil/waste mixture is no longer ignitable, it is classified as used oil, even though it still displays the TC for lead (D008).

The difference in these two scenarios is that used oil that is mixed with a characteristic hazardous waste (other than a solely ignitable waste) must be free of all characteristics to qualify for classification as used oil, whereas used oil that is mixed with a waste that is hazardous solely due to ignitability needs only to be void of the ignitability characteristic to be considered used oil. The difference in the two scenarios is critical because used oil often inherently exhibits a characteristic of hazardous waste.

The standards in Part 279, while tailored to used oil handling, do not negate the requirements placed on handlers by the hazardous waste regulations, and mixing an ignitable waste with used oil to render the waste nonhazardous constitutes treatment of hazardous waste and is subject to all applicable hazardous management standards, including permitting (50 FR 49180; November 29, 1985).

Note that Part 279 standards, other than those related to burning and marketing, are effective March 8, 1993, in unauthorized states only and in authorized states they are not effective until those states amend their program to incorporate the standards. Standards regarding the marketing and burning of used oil for energy recovery are simply transferred from existing Part 266 regulations and remain in effect.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 3 1993

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Vanessa J. Schiller
Industrial and Hazardous Waste Division
Texas Water Commission
P.O. Box 13087
1700 North Congress Avenue
Austin, TX 78711

Dear Ms. Schiller:

Thank you for your January 25 letter regarding the availability of criteria and/or guidelines EPA uses in evaluating the characteristic of reactivity.

EPA currently has a test procedure in place that evaluates the reactivity of waste which releases hydrogen cyanide or hydrogen sulfide gas when mixed with a weak acid. EPA has not proposed a test method for evaluating a waste which releases hydrogen gas when mixed with water. I have enclosed with this letter a copy of the Agency's supporting guidance for the reactivity characteristic. This guidance explains EPA's position and rationale for developing this characteristic. In addition, Appendix 3 of this document describes and evaluates available reactivity testing methods, one of which is for water reactivity. This may provide you with a guideline for evaluating waste that may be reactive with water.

EPA attempts to define our hazardous waste characteristics in terms of specific, numerically quantified properties measurable by standardized and available testing protocols. However, in the case of reactive wastes, it is difficult to construct a numerically quantified definition of reactive wastes because the term "reactivity" embraces a wide variety of different (although overlapping) effects, each of which can be triggered by an equally wide variety of initiating conditions or forces. Further, the properties embraced by the term reactivity are relative properties. The determination of whether something "reacts vigorously with air or water" or is "unstable with respect to heat or shock" is a relative determination, not an absolute one. Because the effects being measured proceed along a continuum, it is difficult to draw the line at any particular point. EPA is currently looking into procedures for testing wastes for hazardous characteristics, and determining wastes that react with water is a part of this research.

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If you have any further questions regarding this subject or if you find a test procedure that is useful in determining water reactivity, please contact either Valerie Wilson (202-260-4678) of the Characteristics Section or Oliver Fordham (202-260-4778) of the Methods Section.

Sincerely,

Sylvia K. Lowrance, Director
Office of Solid Waste

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APR - 2 1993

Debra K. White
Chief Inorganic Scientist
Enseco Technology Group
Enseco, Inc.
4955 Yarrow Street
Arvada, CO 80002

Dear Ms. White:

Thank you for your letter of March 18, 1993 concerning the November 24, 1992 Federal Register notice on revisions to the Toxicity Characteristic Leaching Procedure (TCLP).

In response to your first question regarding the conditions under which the method of standard additions (MSA) must be run for metallic contaminants in TCLP samples, both conditions listed in the FR notice must be met before MSA is required. These criteria are linked together. Unless both are met, MSA is not required. The intent here is to lighten the burden on laboratories. If a waste is clearly hazardous or clearly non-hazardous further testing is unwarranted. It is those cases where the analyte is near the regulatory limit that additional work is required to prove its "true" concentration.

Your second question concerns the proper procedure for administering the method of standard additions, when MSA is required. You should do the full 4 point procedure as stated in the Federal Register notice. This overrides the QC procedures for MSA found in Method 7000 and 6010.

I hope that this information will be of use to your analytical program. If you have any further questions, please feel free to call me at (202) 260-4778.

Sincerely,

Oliver Fordham
National Inorganic Program Manager for RCRA

CONCURRENCES								
SYMBOL	OS-331							
SURNAME	Hansen							
DATE	4/2/93							

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 23 1993

MEMORANDUM

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

SUBJECT: Interpretation of "Aqueous" as Applied to the Corrosivity Characteristic (40 CFR 261.22)

TO: Joseph R. Franzmathes, Director
Waste Management Division

FROM: David Bussard, Director
Characterization and Assessment Division

This memorandum responds to your memorandum to Bruce Diamond dated March 11, 1993 requesting clarification of the term "aqueous" as it applies to the corrosivity characteristic. Your memorandum references a September 1992 "Hotline Questions and Answers" publication produced by the RCRA/Superfund Hotline contractors and concurred upon by my Division and by OSW.

The Hotline publication correctly defines "aqueous", for the purposes of the corrosivity characteristic, to mean in a form amenable to pH measurement. This interpretation is consistent with the supporting documentation found in the background document for the corrosivity characteristic final rulemaking (Background Document: Section 261.22 - Characteristic of Corrosivity, May 2, 1980). I have attached the applicable section for your information.

A more specific interpretation of "aqueous" for the purposes of the corrosivity characteristic may be found in the method referenced in the actual regulatory text for the corrosivity characteristic at 40 CFR 261.22(a)(1). The regulation states that "[t]he EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (see attachment). Method 5.2 pH Electrometric Measurement, which was renumbered to Method 9040, specifies under scope and application that the method "is used to measure the pH of aqueous wastes and those wastes where the aqueous phase constitutes at least 20% of the total volume of the waste." Therefore, any waste for which this method is applicable must contain at least 20% free water by volume. This method is also attached for your information.

If you or your staff should have any questions regarding this memorandum, please call me or have your staff call Al Collins, of my staff, at 202-260-4791.

Attachments

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fuel or fuel addititve could, in fact, constitute a legitimate type of burning for energy recovery. It is important to note, however, that energy value is not the sole determinant of whether the natural gas condensate is being legitmately burned as a fuel. Additional sham recycling criteria, identified in the January 8, 1988 Proposed Amendments to the Definition of Solid Waste, are equally relevant to a regulatory status determination (see 53 FR at 522; see also 48 FR at 11158 (March 16, 1983)). Of particular relevance to a determination regarding natural gas pipeline condensate is whether the condensate contains toxic constituents not found in normal fuels and if so, whether these constituents contribute to the recycling objective or are simply being destroyed. Assuming that burning is for legitimate energy recovery, high energy value natural gas condensate would not be considered a RCRA solid or hazardous waste when used as a fuel or fuel additive. However, the determination would have to be made case-by-case based on the facts relevant to both the specific material and the manner in which it is being burned.

It is also important to note that authorized states generally implement the RCRA hazardous waste regulations and State regulations may be more stringent than the Federal regulations. I hope this letter has addressed your concerns. If you have any further questions, please contact Mitch Kidwell or Becky Daiss of my staff at (202) 260-8551.

Sincerely,

Elizabeth A. Cotsworth

Michael Shapiro, Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1993(06)

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

OCT 12 1993

Dr. Ed L. Schrader
Associate Professor
Director of Sorbent Laboratory
Millsaps College
1701 North State Street
Jackson, MS 39210-0001

SUBJECT: Paint Filter Liquids Test Technical Guidance

Dear Dr. Schrader:

Thank you for your letter of February 4, 1993, and our subsequent discussions in which you raised questions about the applicability of the Paint Filter Liquids Test (PFT, Method 9095) to the sorbent industry. The test determines if a free liquid exists for the purposes of the Liquids in Landfills Rule.

Five items in particular seem to be of concern to sorbent manufacturers, users, and landfill operators in complying with the Liquids in Landfills Rule: (1) the light bulk density of some sorbents, which causes them to overflow the filter, (2) the need for clarifying that sorbents and sorbates are to be uniformly mixed prior to placement in the paint filter, (3) the size and shape of sorbent pillows, socks, and pads, which prevents them from fitting into the paint filter without modification, (4) the need to standardize filter paper specifications, and (5) the need to test each sorbate/sorbent combination.

With regard to the first item, if a 100-g sample of sorbent is of such low density that it would overflow the filter (potentially causing liquids to flow between the filter and funnel, yielding a false positive), then two options exist. First, the procedure specifies a "100-ml or 100-g representative sample," so a 100-ml rather than a 100-g sample may be used, if the material can be measured volumetrically (i.e., lacks major air spaces or voids). Second, the sides of the filter can be extended upward by taping a similar paper to the inside of the filter paper (so any flow will stay within the filter) and above the mesh. In either case, settling the sample into the paint filter may be facilitated by lightly tapping the side of the filter as it is being filled.

Regarding the second item, liquid should not be poured over

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the sorbent after the sorbent has been placed in the paint filter. The sorbent and liquid material should be thoroughly and uniformly mixed and then a representative sample placed in the filter.

Regarding the third item, the PFT does not address how material such as sorbent pillows, socks, pads, sheets, and rolls should be placed into the paint filter. How such items are placed into the filter could result in significant variations in test results. As this is a gravity test with no external applied pressure, it is not intended for sorbent pillows, socks, etc. to be squeezed or compressed to fit into the paint filter.

In order to assure uniformity and standardization of the test, a 100-g or 100-ml sample of sorbent pad, roll, sheet, or other material which does not conform to the shape of the paint filter, should be cut into small pieces and poured into the filter. Sample size reduction may be accomplished by cutting the sorbent material with scissors, shears, knife, or other such device so as to preserve as much of the original integrity of the sorbent fabric as possible. Sorbents enclosed in a fabric should be mixed with the resultant fabric pieces. The particles to be tested should be reduced smaller than 1 cm (i.e., should be capable of passing through a 9.5 mm (0.375 inch) standard sieve). Grinding sorbent materials should be avoided as this may destroy the integrity of the sorbent and produce many "fine particles" which would normally not be present.

For brittle materials larger than 1 cm that do not conform to the filter, light crushing to reduce oversize particles is acceptable if it is not practical to cut the material. Materials such as clay, silica gel, and some polymers may fall into this category.

Regarding the fourth item, the PFT specifies "Conical paint filter: Mesh number 60 (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden for an approximate cost of $0.07 each [as of September 1986]." EPA recognizes that most paint filters today are not labelled by actual mesh size, and that the specified "fine meshed size" available commercially is actually a mesh size of 60 X 48 threads or holes/inch. Since this is coarser than a 60 X 60 mesh, it has the potential to give more conservative test results (i.e., may fail more samples) and is therefore acceptable to EPA, as would be a 60 X 60 mesh. Mesh sizes greater (i.e., finer) than 60 X 60, however, would not be acceptable.

Regarding the fifth item, no materials, whether sorbed or not, may be placed in a hazardous waste landfill if they release free liquids as determined by the PFT. This should be implemented through the landfill operator's Waste Analysis Plan (WAP). The WAP should identify when samples will be tested using the PFT. In cases of controlled treatment by sorbents, it may not be necessary

to test each treated sample if sufficient data have been obtained by testing each sorbate/sorbent combination to establish the loading ratio that assures no free liquids, and the treatment is done to assure such ratios are not exceeded. Each sorbate/sorbent combination should be tested because sorbents have different sorption characteristics and sorption ratios based on the type of sorbate (e.g., oily vs water-based sorbates).

As we discussed, this test is not designed to evaluate the efficiency of a sorbent product relative to other sorbents. It is designed to determine if a specific sample, be it sorbent or other material, contains free liquid and thus should not be placed in a hazardous waste landfill. As discussed under item 5 above, the PFT may also be used to determine the "saturation" or pass/fail level of a particular sorbent/sorbate combination. Our testing shows that at the "saturation" level some failures may occur since the "saturation" level is more a range than a line, but that at some lower liquid loading level, that can be determined in the lab, passing the PFT is consistently achieved. This knowledge is invaluable to a treater using sorbents to assure successful treatment (i.e., a high pass rate). It is less valuable when sorbents are used to control or clean up spills since sorbate/sorbent ratios are less controlled.

I hope this information will help clarify technical details about the applicability of the Paint Filter Liquids Test to sorbents and assist you in your analytical program. EPA plans to incorporate appropriate parts of this technical guidance into Method 9095 when we propose a third update to the third edition of SW-846. Realistically the proposal and promulgation of this update is several years away, so I hope this technical guidance will serve your purposes in the interim.

Sincerely,

Oliver M. Fordham Jr.

Oliver M. Fordham, Jr.
National Inorganic Program
Manager for RCRA

cc: David Bussard
Mike Flynn
Alec McBride
Gail Hansen
Tom Beisswenger
Matt Hale
Ken Shuster
Dave Eberly
RCRA Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1993(07)

NOV - 8 1993

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Reactive Sulfides in Papermill Waste

FROM: Bruce Weddle, Acting Director
Office of Solid Waste

TO: Larry Brill, Chief
MA Waste Management Branch
Region I

I am writing in response to your October 6, 1993, memorandum asking for clarification on the level of sulfide for determining if a waste is hazardous under the reactivity characteristic.

The regulation in 40 CFR 261.23 defines reactive wastes to include "cyanide or *sulfide bearing wastes* which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment". This definition is intended to identify wastes that, because of their extreme instability and tendency to react violently or explode, pose a problem at all stages of the waste management process. The definition is to a large extent a paraphrase of the narrative definition employed by the National Fire Protection Association. The Agency chose to rely almost entirely on a descriptive, prose definition of reactivity because most of the available tests for measuring the variegated class of effects embraced by the reactivity definition suffer from a number of deficiencies. For determining reactive sulfide content in particular, one of the deficiencies is poor recovery.

Chapter 7 of SW-846 contains the method for determining total releasable sulfide. It should be noted that different versions of the test method have existed that yield substantially different results. In September of 1990, EPA proposed increasing the strength of the sulfuric acid used in the test from 0.01N to 0.1N. The Agency reevaluated the stronger acid digestion and concluded that the original acid concentration of 0.01N more accurately represented the mismanagement scenario the method is designed to emulate (see attachment 1). In 1992, EPA revised the method to include the original sulfuric acid concentration of 0.01N. This version was finalized on August 31, 1993 (58 FR 46040, attachment 2). The current EPA guidance level is 500 mg/kg for total releasable sulfide. If a waste contains greater than 500 mg/kg total releasable sulfide, then the waste is usually considered to meet

the narrative definition of a characteristically reactive waste under 40 CFR 261.23. Since recovery can be as low as 10% under certain circumstances, any test result greater than 500 mg/kg would be deemed a characteristic hazardous waste.

In your letter you included data on slaker grit and green liquor dregs wastestreams from an International Paper facility. It is unclear which version of the test method was used to measure total releasable sulfide. If the most recent method (attachment 3) was used, then the wastestreams have concentrations in excess of 500 mg/kg (684 mg/kg and 1004 mg/kg respectively), and would therefore be considered a hazardous waste. If there is any question as to which version of the method was used I recommend having the analysis repeated using the most recent method. The older proposed method employing 0.1N sulfuric acid would yield higher levels of releasable sulfide and inaccurately classify the waste as hazardous. If you have any further questions on the reactivity characteristic, please contact William Morrow of my staff at 202-260-3657.

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1994(01)

JAN - 3 1994

Mr. Stephen Siegel
Industrial Hygienist
ENV Services Inc.
1016 West 8th Avenue
King of Prussia, PA 19406

Dear Mr. Siegel:

Thank you for your November 16, 1993 letter in which you requested guidance on whether or not any Federal disposal guidelines apply to the disposal of metal casings containing spent powdered metallic oxide catalyst (i.e., manganese dioxide and copper oxide). Based on the Material Safety Data Sheet (MSDS) you provided, manganese dioxide is a strong oxidizer which reacts exothermally, may ignite certain organics, and cause lung irritation or serious central nervous system disorders through inhalation.

The spent catalyst is not a listed hazardous waste under Federal regulations. However, the spent material may need to be tested to determine if it exhibits any of the hazardous waste characteristics identified in 40 CFR 261, Subpart C (i.e., ignitability, corrosivity, reactivity, toxicity). The limited information provided suggests that the catalyst may exhibit a hazardous waste characteristic of ignitability or reactivity. Even if it is not ignitable or reactive, when the spent catalyst is discarded, its characteristics may be different (e.g., it may be contaminated with other hazardous constituents). Therefore, you must determine if the waste contains any of the Toxicity Characteristic (TC) constituents listed in Table 1 of 40 CFR 261.24 at levels of regulatory concern.

If the spent catalyst powder is determined to be a hazardous waste, then it must be handled according to the hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Even if the spent catalyst is not a characteristic hazardous waste, the nature of the material (a strong oxidizing agent) may still require special handling. To insure full compliance with state's solid waste regulations and safe handling and disposal of the metal casings, you should contact the waste management authority of the State in which the waste will be handled.

Should you have any questions or require any additional clarification regarding this correspondence, please contact Shen-yi Yang of my staff at (202)-260-1436.

Sincerely,

Rick Brandes, Chief
Waste Identification Branch

cc: Bob Kayser, EPA HQ
Shen-yi Yang, EPA HQ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9443.1994(02)

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

FEB - 4 1994

Mr. Kevin Igli
Director, Environmental Management
Chemical Waste Management, Inc.
3001 Butterfield Road
Oak Brook, Illinois 60521

Dear Mr. Igli:

In EPA's letter of November 10, 1993, the Agency stated that mercury batteries, meeting specific criteria, are not considered debris under the current definition of debris (see 57 FR 20767, May 15, 1992). In your follow-up letter dated November 23, 1993, you requested further examination on whether certain mercury batteries are hazardous debris. In your letter you discussed, among other things, the fact that debris capacity variances are based on both the "old" and current definitions of debris.

The Agency's determination that the battery carcasses described in your April 30, 1993 letter are containers and not debris has not changed. In the context of a capacity variance, you are correct that both the "old" and current definitions apply. As you point out, the old definition includes containers as being debris (55 FR 22686, 22650, June 1, 1990). EPA re-addressed this issue in the "new" definition, stating that in many cases debris will be mixed with liquids or sludges, and that EPA will determine on a case-by-case basis whether all or portions of such mixtures should be considered debris (55 FR at 22650). However, this does not necessarily mean that the materials to which you refer are entitled to a capacity variance. For example, it would not be appropriate to provide such a variance to a drum (i.e., container) of liquid waste or sludges.

In your specific case, the EPA Regional office has informed us that the mercury sludge contained in the battery carcass does not meet the definition of debris, and that the mixture (i.e., battery carcass and mercury sludge) also is not debris.

To address other questions regarding battery carcasses containing hazardous waste sludges or mixtures of debris and hazardous waste sludges, please contact Mr. Richard Kinch, Chief

of the Waste Treatment Branch at (202) 308-8434. Thank you again for you letter.

Sincerely,

Michael Shapiro
Director
Office of Solid Waste

cc: Bruce Long
Richard Kinch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FEB 24 1995

9443.1995(01)

MEMORANDUM

SUBJECT: Debris and Soil Contaminated with Explosive Residues

FROM: James F. Michael, Chief
Disposal Technology Section (5303W)
Office of Solid Waste

TO: Lawrence A. Wapensky, Chief
Utah/North Dakota Section
Region VIII

This responds to your January 20, 1995 memorandum requesting assistance in answering questions raised by the State of Utah concerning regulatory issues pertaining to wastes contaminated with explosive residues.

The first question raises concern with the reference at 40 CFR 261.23(a)(8) to certain Department of Transportation (DOT) regulations concerning explosive classifications, that are cited as criteria for determining the characteristic of reactivity. The DOT regulations cited at §261.23(a)(8) have recently been changed and expanded to conform with Department of Defense hazard classes, therefore, presenting difficulties in implementing the Federal regulatory definition of reactivity under RCRA. Until such time that §261.23(a)(8) is updated, those referenced DOT regulations can not be used for determining reactivity. Reactivity determinations should be made using the remaining criteria at §261.23(a)(1)-(7).

The second question asks whether and when liquid, solid, or debris mixed with explosives would be considered reactive. Wastes, whether themselves explosives, or media contaminated with explosives would be considered reactive by meeting the definition of reactivity as described in §261.23(a)(1)-(7). Wastes that do not meet the criteria in §261.23(a)(1)-(7) would not be considered reactive.

The third question regards other Federal criteria for explosivity. If agencies such as the Bureau of Alcohol, Tobacco, and Firearms (BATF) have regulations, or protocols, for determining whether or not a substance is explosive, those regulations or protocols would not be enforceable under EPA

*U.S. Government Printing Office: 1992 — 620-856/406

regulations, unless they became incorporated into our rules. Specific methods used by agencies such as BATF to determine if a substance is an explosive could, however, be applied to determine whether a waste is reactive according to §261.23(a)(6) or (7).

Thank you for the opportunity to address questions related to the reactivity characteristic as it relates to explosives. If you have any questions, please call Jeff Gaines at (703) 308-8655.

cc: Frank McAlister, AB, PSPD, OSW
Jeff Gaines, AB, PSPD, OSW

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 24 1995

9443.1995(02)

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. T. L. Nebrich, Jr.
Technical Director
Waste Technology Services, Inc.
640 Park Place
Niagara Falls, NY 14301

Dear Mr. Nebrich:

Thank you for your letter of July 31, 1995 requesting a clarification of the difference between the definition for the characteristic of ignitability as it pertains to solids vs. liquids. As you are aware, there is no officially promulgated or required method for determining the ignitability of solid samples or sludges at this time. Of the two flash point methods, Method 1010, Pensky-Martens, has some utility for liquid samples with non-filterable, suspended solids. If your samples contain filterable solids, they are not amenable to the Pensky-Martens flash point test. Flash point testing is only appropriate for liquid samples. It should not be applied to solids.

The Office of Solid Waste has developed and proposed a test to determine the ignitability of solids (SW-846 Method 1030). Our procedure is based on the Department of Transportation (DOT) burn rate test listed in 49 CFR §173.124 and Appendix E. You should separate the solid/liquid phases of your samples and test each phase separately; liquids by flash point and solids by the DOT procedure.

It is the generator's responsibility to make sure their waste is not hazardous for the characteristic of ignitability as described in 40 CFR §261.21. As we do not have a promulgated method required by regulations to test for the ignitability of solids or sludges at present, we recommend you use generator knowledge of the waste when available supplemented by tests appropriate to the waste if necessary. When specified test methods are not available and generator knowledge is insufficient to make a hazardous waste determination, it is always wise to check with your state or regional EPA office for approval of the protocol you wish to follow in making a hazardous waste determination.

There have been clarifications to our guidance on how to determine a free liquid since the 1989 letter to Mr. Travis P. Wagner on the subject. In a January 13, 1995 Federal Register Notice (60FR3089) in Section IV.C there is a paragraph on "Free Liquids and Characteristic Tests." A copy is enclosed for your convenience.

I hope that this information will be beneficial to your industry. If you have any question, please feel free to call Ollie Fordham of my staff at (202) 260-4778.

Sincerely,

Elizabeth A. Cotsworth

Michael Shapiro, Director
Office of Solid Waste

Enclosure

WTS
WASTE TECHNOLOGY SERVICES INC.

July 31, 199!

Mr. Michael Shipiro, Director
Office of Solid Waste
Environmental Protection Agency
401 M Street, S. W.
Washington, DC 20460

Dear Mr. Shipiro:

There has been a discussion ragging in our industry (hazardous waste consulting) for the past few years regarding a D001 ignitable solid. Some of our clients (generators) want to identify their solid (non-liquid) wastes as D001 when it's only based on a flashpoint test as outlined 40CFR261.21(a)(1). They then want to ship the waste as a DOT Flammable Solid.

We have tried to point out that non-liquid, solid waste cannot meet the definition of a RCRA characteristic of ignitability 40CFR 261.21 unless it is "not a liquid and is capable, under standard temperature and pressure . . . . . [40CFR261.21(a)(2)]. Now with the subcategories for D001 on a LDR Notification it makes it even more difficult to identify a D001 solid as ignitable since there is no category which fits a Flammable Solid in 40CFR261.21(a)(1).

Could you please clarify the difference between the definition for the Characteristic of Ignitability as it pertains to solids (non-liquids) vs. liquids. Has there been any change since the 1989 to letter Mr. Travis P. Wagner (see enclosed).

If you should have any questions, please do not hesitate to call.

Very truly yours,

WASTE TECHNOLOGY SERVICES, INC.

T. L. Nebrich, Jr., CHMM
Technical Director

TLN/kjl

Enclosure

40 Park Place, Niagara Falls, New York, 14301 Telephone 716-282-4100 • Fax 716-282-6986

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9443.1995(03)

Mr. T. L. Nebrich, Jr.
Technical Director
Waste Technology Services, Inc.
640 Park Place
Niagara Falls, NY 14301

Dear Mr. Nebrich:

Thank you for your follow up letter of August 31, 1995 to Michael Shapiro requesting further clarification of the characteristic of ignitability as it pertains to solids versus liquids.

40 CFR 261.21(a)(1) is only applicable to liquids as a definitive test for the characteristics of ignitability. There is no promulgated definitive test for the ignitability of solids (i.e., physically a solid with no free liquid). If a solid flashes using some modification of the flash point test, this may indicate there is a potential problem with the sample such as contamination with ignitable volatiles and further investigation may be in order. The flash point test alone is not definitive for determining the ignitability of solids, but may be used with other evidence to build a case for a waste being classified as an ignitable hazard.

I hope that this information will be beneficial to your industry. If you have any questions, please feel free to call Ollie Fordham of my staff at (202) 260-4778.

Sincerely yours,

Gail Hansen
Chief,
Methods Section (5304)

WASTE TECHNOLOGY SERVICES INC.

August 31, 1995

received
9/5/95

Mr. Michael Shipiro, Director
Office of Solid Waste
Environmental Protection Agency
401 M Street, S. W.
Washington, DC 20460

Dear Mr. Shipiro:

As a follow up to my July 31, 1995 letter and your response (enclosed) regarding the characteristic of ignitability as it pertains to solids vs. liquids, I would like to request a further clarification.

Is it possible or correct to identify a solid waste (ie. physically a solid with no free liquid) as RCRA D001 (characteristic of ignitiability) according to 40CFR 261.21(a)(1). I realize that you could have a RCRA D001 non-liquid as defined in 40CFR 261.21(a)(2) or (4). However, since there are only flash points for liquids, could you have a solid waste characterized as a RCRA D001 based solely on a flash point?

If you should have any questions, please do not hesitate to call.

Very truly yours,

WASTE TECHNOLOGY SERVICES, INC.

T. L. Nebrich, Jr., CHMM
Technical Director

TLN/kjl

Enclosure

640 Park Place, Niagara Falls, New York 14301 Telephone 716-282-4100

Lists Of Hazardous Waste (Subpart D)

9444.1980(01)

September 4, 1980

Mr. Robert Goodell
Regulatory Affairs Specialist
Betz Laboratories, Inc.
4636 Somerton Road
Trevose, Pennsylvania 19047

Dear Mr. Goodell:

This is in response to your letter of August 1, 1980 in which you requested confirmation of our previous telephone conversations related to interpretations of §261.33 of the hazardous waste regulations promulgated on May 19, 1980. In an attachment to your letter you described a hypothetical waste stream which contained several constituents which, as products, are listed in §§261.33(e) or 261.33(f); you concluded that the waste stream was non-hazardous.

As noted in the regulations, §§261.33(e) and (f) relate only to commercial chemical products (or variants thereof) which are hazardous wastes if and when they are discarded. They are not to be applied to wastes which incidentally contain substances listed in these sections. Thus the waste stream you described is not one of the commercial chemical products listed. (The exception to this would be those cases where, citing your example, the product is known by the generic name of and purchased for the active ingredient, pentachlorophenol.) Also you did properly indicate an evaluation against the characteristics of hazardous waste.

A Regulatory Interpretation Memorandum (RIM) on this specific issue (§261.33) has been prepared and is being revised within the Agency. It should be published in the Federal Register in about two weeks. A notice indicating that RIMs would be prepared and a tentative schedule for a group of RIMs was published on August 19, 1980 (45 FR 55386). A copy is attached.

This has been retyped from the original document.

I have this provides the information you requested. Please call or write If I may be of further assistance.

Very truly yours,

Alan S. Corson, Chief
Waste Characterization Branch
Hazardous and Industrial Waste Division

Attachment

This has been retyped from the original document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 1 3 1980

Mr. John D. R. Wright
Independent Valley Energy
Company
1100 Milam Building
Suite 3765
Houston, Texas 77002

Dear Mr. Wright:

This is in response to Mr. Finis E. Carleton's letter to me dated October 28, 1980 (copy attached). In his letter Mr. Carleton asks for verification of his interpretation of our RCRA Hazardous Waste Management Regulations with respect to wastes that will be generated by a refinery your firm intends to build in Bakersfield, California. Based on the facts presented in his letter, I conclude that Mr. Carlston has reached correct interpretations of our regulations.

It appears that the refinery wastewater to be treated is not a hazardous waste because it is not listed in §§261.31 or 261.32 of the regulations, does not contain (by mixture) any of the hazardous wastes listed in §§261.31 or 261.32, or does not exhibit any of the hazardous waste characteristics identified in Subpart C of Part 261 of the regulations. As such, this wastewater would not be subject to our regulations and it would not be necessary to submit a Part A application on November 19, 1980, or obtain interim status in accordance with §122.23. I would hasten to point out, however, that if any of the three hazardous wastes to be generated by the refinery (K048, K049 and K051) are discharged into and mixed with the refinery wastewater, they will cause the wastewater to be a hazardous waste--in accordance with the mixture rule of §261.3(a)(2)(ii)--and, thereby, subject to our RCRA regulations.

It appears that one of the hazardous wastes to be generated by your refinery--namely skimmings from the air floatation unit (K048)--will be recycled to the coker after accumulation or storage in the slop oil tank. Although the recycling of this waste is not now subject to our regulations (see §261.6(a)), the storage of this waste in the slop oil tank is now subject to our regulations because it is storage of a listed hazardous waste (see §261.6(b)). As the regulations are now written, the slop oil tank would have to be permitted or have

I hope that I have been helpful in this response. I regret that our regulations are so complicated but believe that this complexity is caused by the complexity of the problem being regulated. If I can be of any further assistance, please call or, preferrably, contact:

Arnold Den
Chief, Hazardous Materials Branch
215 Fremont Street
San Francisco, California 94105
(415) 556-4606

Sincerely yours,

Gary H. Dietrich
Associate Deputy Assistant Administrator
for Solid Waste

Enclosure

cc: Finis E. Carleton

NOV 17 1980

Mr. R. E. Hoyle
Manager, Operations
Koch Fuels, Inc.
P.O. Box 2338
Wichita, Kansas 67201

Dear Mr. Hoyle:

This is in response to your letter of September 11, 1980, requesting clarification of our RCRA hazardous waste management regulations relative to bottom sediments, water wastes and spilled material and mixtures resulting from storage of petroleum products. You ask whether these wastes are hazardous wastes by virtue of containing any of the constituents, such as benzene, listed in Appendix VIII of Part 261 of our regulations.

These wastes would only be hazardous waste if:

1. they are listed as hazardous wastes in §§261.31 or 261.32 of our regulations; or

2. they are mixtures that contain any of the hazardous wastes listed in §§261.31 or 261.32 of our regulations.

3. they exhibit any of the characteristics of hazardous wastes described in Subpart C of Part 261 of our regulations.

From the information provided in your letter, it appears that your wastes do not meet either of the first two criteria. Your letter does not provide sufficient information to make a judgement based on the third criterion.

Relative to your questions about Appendix VIII, that Appendix is only meant to be used by EPA in making judgements about listing wastes as hazardous wastes. It is not intended that the regulated community must use Appendix VIII to determine whether a waste is a hazardous waste. Put in other words, a waste that contains an Appendix VIII constituent is only a hazardous waste because of this if EPA has listed the waste for this reason in §§261.31 or §261.32.

If your wastes contain any of the Appendix VIII constituents but these wastes are not listed in §§261.31 or 261.32, this does not necessarily mean that EPA has made a determination that these wastes are non-hazardous. It most likely means that we have not yet made a determination with respect to these wastes.

I hope I have clarified our regulations with respect to your questions. If I can of further assistance, please call me.

Sincerely yours,

Gary N. Dietrich
Associate Deputy Assistant Administrator
for Solid Waste

NOV 18 1980

Michael S. Rabren
Technical Director
U.S. Cylinders
100 Industrial Park
Citronelle, Alabama 36522

Dear Mr. Rabren:

This is to respond to your letter of October 30, 1980, to Ms. Filomena Chau asking for clarification of our hazardous waste management regulations as they apply to your company's waste.

You indicate that your waste is CaO, SiO_2 and asbestos and ask if it is a hazardous waste. We listed asbestos as a hazardous waste in §261.33(f) of our regulation, but this only applies to technical grade asbestos if, for some reason, it is discarded or intended to be discarded. This listing does not cause a manufacturing process waste containing asbestos as a normal waste constituent to be a hazardous waste. From my understanding of your letter, your waste is such a manufacturing process waste. If this is correct, it is not a hazardous waste because of its content of asbestos.

Your waste may be a hazardous waste because it exhibits any of the characteristics of hazardous waste identified in Subpart C of Part 261. From the information provided in your letter, I cannot make a judgement on this point. You may want to check on this. If you need further guidance, I recommend that you contact:

James Scarbrough
Chief, Residuals Management Branch
345 Courtland Street, N.E.
Atlanta, Georgia 30365
(404) 881-3016

If you should find that your waste is a hazardous waste and you are a small quantity generator, you are allowed to dispose of your waste in a facility that is approved by the State for disposal of municipal or industrial waste (not a necessarily hazardous waste facility). A small quantity generator is one who generates less than 1000 kilograms of hazardous waste in a calendar month. Your letter

states that you dispose of 500 kilograms per month of asbestos. Our regulation is based on the quantity of the total waste, not just the quantity of the asbestos or any other constituent in the waste. Therefore, I cannot make a judgement on whether you are a small quantity generator. You may wish to discuss this with Mr. Scarbrough.

I hope I have been helpful. I apologize for the tardiness of this response but we have been overwhelmed with requests for clarification of our regulations.

Sincerely yours,

Gary N. Dietrich
Associate Deputy Assistant Administrator
for Solid Waste

9444.1980(06)

December 2, 1980

Mr. William English
Vice-President, Operations
The Massillon Steel Casting Company
Massilon, Ohio 44646

Dear Mr. English

This letter will confirm the conversation you had with Mr. Myles Morse of my staff on October 20, 1980, concerning your petition to exclude the waste of the Massillon Steel Casting Company from the K061 hazardous waste listing, (emission control dust/sludge from the electric furnace production of steel), under Section 261.32 of the hazardous waste regulations. The Massillon Steel Casting Company's facility in Massillon, Ohio, as indicated by your petition dated September 9, 1980, is a steel foundry and is therefore not affected by this RCRA hazardous waste classification. This reflects the Agency's finalized listings (see 45 FR 74890-892 (November 12, 1980)) which clarify that the listing K061 applies only to the primary production of steel and not to steel foundries. This change was made since the listing background document refers throughout only to primary steel production. We are uncertain whether foundry electric furnace emission control dusts and sludges are sufficiently similar in composition to warrant inclusion in the area listing, and therefore have not included them in this listing. Foundry industry wastes are being evaluated and may be addressed by future Agency actions. At present, however, the Agency has formally terminated further processing of this petition. The petition will be kept on file with the Agency for future reference.

Your waste stream, therefore, will not be listed as hazardous. You are not required to take any action as a result of the May 19, 1980, interim final listing. You must still determine, however, whether your waste possesses any of the characteristics of hazardous waste (i.e., reactivity, corrosivity, ignitability or EP toxicity) as provided in §262.11 of the regulations. If your waste does not possess any of these characteristics, you will be deemed a generator of hazardous waste, and be required to manage the waste under the hazardous waste management program. It should be noted that if your waste meets any of the four characteristics, you should have already obtained an EPA identification number by August 18, 1980.

This has been retyped from the original document.

Please feel free, to contact Mr. Morse if you have any questions or problems. Mr. Morse's telephone number is (202) 755-9187.

Sincerely yours,

John P. Lehman
Director
Hazardous and Industrial Waste Division (WH-565)

This has been retyped from the original document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

12 MAR REC'D

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

RE: WCBDF830108

Mr. John D'Aloia, Jr.
Deuel and Associates, Inc.
7300 Jefferson St, N.E.
Albuqerque, NM 87109

Dear Mr. D'Aloia:

I am responding to your letter of March 2, 1983 to Alan Corson requesting a clarification of why the Agency does not identify as a hazardous waste any manufacturing waste that contains any of the compounds listed in 40 CFR 261.33.

The commercial chemical products regulated under §261.33 are generally products containing high concentrations of toxic chemicals or, in the case of pesticides, products of high toxic activity. Thus, there is no question that such materials are likely to meet the criteria for listing as hazardous wastes.

Manufacturing process wastes, on the other hand, generally contain only low levels of these materials. Thus, expanding the hazardous waste identification regulations to encompass all manufacturing wastes containing the §261.33 compounds is likely to result in many false positives (i.e., wastes identified as hazardous which do not actually contain hazardous levels of the toxicants of concern) unless, and until, minimum concentration theresholds can be established for each compound. At this time, due to the lack of data, the Agency is unable to set thresholds for all the compounds. As the comment to §261.33 explains, where the Agency deems a manufacturing process waste to be a hazardous waste because it contains low levels of these compounds, such a waste will be listed in §§261.31 and 261.32.

In summary, §261.33 was not broadened to include all process wastes due to the problem outlined above and the technical difficulties in establishing de minimis concentration thresholds for all the compounds.

I hope that I have answered your question. If you need additional background information on these regulations, I suggest that reviewing the §261.33 Background Document may be useful.

Sincerely yours,

David Friedman
Manager
Waste Analysis Program

cc: Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF SOLID WASTE

JUN 19 1981

OFFICE OF WATER
AND WASTE MANAGEMENT

Mr. R. E. McNeill
Occidental Chemical Company
P.O. Box 300
White Springs, FL 32096

Dear Mr. McNeill:

I am writing in response to your letter of June 9, 1981 to Mr. Alan Corson requesting clarification of the section 261.33 regulations with respect to a sulfuric acid catalyst you use.

The hazardous waste listing P120 in section 261.33(e) relates to all the oxides of vanadium's +5 oxidation state. If the Monsanto Catalyst that you employ in the production of sulfuric acid does not have such an oxide as its sole active ingredient, then the catalyst is not regulated under section 261.

One must keep in mind however that, even if it is not regulated under section 261.33, the waste must still be evaluated to determine if it exhibits any of the characteristic of a hazardous waste (i.e., ignitability, reactivity, corrosivity, EP toxicity).

I trust the above answers your questions. If I can be of further assistance please give me a call at (202) 755-9187.

Sincerely,

David Friedman

David Friedman
Manager
Waste Analysis Program
Hazardous and Industrial Waste Division (WH-565)

cc: Hotline

OFFICE OF SOLID WASTE

JUN 6 1981

Mr. Ed Keough
Continental Pipeline
P.O. Box 2197
Room 600
Richmond Tower
Houston, Texas 77001

Dear Mr. Keough:

This letter is in response to your request for a clarification of the hazardous waste listing K052, "Tank bottoms (leaded) from the petroleum refining industry." In our telephone conversations, you indicated that your company, as well as other pipeline companies, generate leaded tank bottoms at bulk terminals, distribution points, etc., which are not part of a refinery. Therefore, it was not clear to you whether the listing K052 included all leaded tank bottoms generated by the petroleum industry or just those specifically generated at a petroleum refinery.

As you had discussed with Matt Straus, of my staff, on the telephone, the hazardous waste listing K052 is limited to only those leaded tank bottoms which are generated at or as part of a petroleum refinery. A petroleum refinery is described in the listing background document as a "...complex combination of interdependent operations engaged in the separation of crude oil by molecular cracking, molecular rebuilding and solvent refinishing, to produce a varied list of intermediate and finished products..." [Background Document: §§261.31 and 261.32 - Listing of Hazardous Wastes (Finalization of May 19, 1980 Hazardous Waste List), November 14, 1980, p. 685.] Therefore, only leaded bottoms from those tanks (i.e., tank farm) which are directly part of a petroleum refinery (i.e., used to store product/crude prior to shipment off-site) and which generate leaded bottoms would be currently covered by the listing. These leaded bottoms are subject to control as hazardous wastes when they are removed from the tanks. This we believe is made clear in reading the listing background document which defines the scope of the listing.

This, however, does not mean that your bottoms are non-hazardous. Each generator is ultimately responsible for determining whether this waste exhibits any of the characteristics of hazardous waste (i.e., ignitability, corrosivity, reactivity and EP toxicity) as provided in §262.11 of the regulations. If the waste exhibits a hazardous waste characteristic, the facility will be deemed a generator of hazardous waste, and the waste must be managed in accordance with the hazardous waste management regulations. In addition, if, in further studies, the Agency determines that leaded tank bottoms generated from other sources are also hazardous, the Agency will amend the listing to include these sources under Subtitle C control.

Please feel free to give me or Matt Straus of my staff a call if you have any further questions. My telephone number is (202) 755-9185 while Matt's telephone number is (202) 755-9187.

Sincerely yours,

Alfred W. Lindsey
Deputy Director
Hazardous and Industrial Waste Division (WH-565)

WH-565:MStraus:pes:x59187:5-30-81 Disk PS-51-02

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF SOLID WASTE

SEP 16 1981

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Reed Sato
Enforcement Division, Region IX
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, California 94105

Dear Mr. Sato:

I am writing in response to your letter of July 23, 1981 (E-5-3; IX81-RCRA-079) requesting clarification of 40 CFR 261.33(e).

You are correct in your interpretation that a material containing a compound listed in §261.33(e) as its sole active ingredient is a hazardous waste when discarded even though the original product has been diluted by the user. Thus if a person purchases a concentrated solution of the pesticide Aldicarb (P070) and then dilutes it to an application strength solution; disposal of the application strength solution is considered to be disposal of the product itself. A literal reading of the regulations would mean that even if the amount of chemical product prior to dilution was less than 1 kilogram, disposal of more than 1 kilogram/month of the application strength solution would require management as a hazardous waste.

It is important to keep in mind, however, the applicability of the "farmer exemption" discussed in §262.51. A commercial applicator working for a farmer may mix, apply, rinse and dispose of pesticide rinsate or unused pesticide solution on the farmers property if done so in accordance with the instructions on the pesticide label. This exemption would not apply if the pesticide were being applied to more than one farmer's property and disposal only occurred at one farm, or if the waste was shipped off the farmers's property for disposal.

I trust that this explanation clarifies the issue for you. If you have any further questions, please feel free to give us a call.

Sincerely yours,

David Friedman
Manager
Waste Analysis Program
Hazardous & Industrial Waste Division (WH-565)

cc: Fred Lindsey (WH-565)
A. Corson (WH-565)
D. Friedman (WH-565)
M. Straus (WH-565)
Amy Schaffer, Enforcement (WH-562-M)
Susan Bromm (WH-564)
Filomena Chau (WH-562)
RCRA Hotline

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

JUL 23 1981

In Reply: E-5-3
Refer To: IX-81-RCRA-079

Mr. David Friedman, (WH-565)
Manager of Waste Analysis
Waste Characterization Branch
Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

Re: Request for Policy Statement regarding §261.33(e) of Title 40 of the Code of Federal Regulations

Dear Mr. Friedman:

EPA Region 9 is currently engaged in an enforcement action which involves an interpretation of §261.33(e) of Title 40, Code of Federal Regulations.

It is our contention that a pesticide containing a listed §261.33(e) chemical product as its sole active ingredient which is diluted to application strength is a hazardous waste if discarded. We contend that such application-strength pesticide is a hazardous waste even where the chemical product prior to dilution is less than 1 kilogram. Therefore, so long as an applicator generates 1 kilogram of waste pesticide residues per month he is required to notify as a generator pursuant to section 3010 of RCRA.

Within our own technical section there has been some dispute as to whether the preceding analysis is correct. In order to obtain guidance on this matter I contacted your office on July 20, and explained our position to Mr. Matthew Straus. Mr. Straus stated that Region 9's interpretation of §261.33(e) is correct.

Furthermore, Mr. Straus indicated that if the applicator tanks were rinsed, that rinsate could be considered hazardous waste as well.

I am writing to obtain a written statement from your office which confirms Mr. Straus' conclusions. Such a statement will greatly assist us in the successful conclusion of our enforcement action. If you have any questions regarding this request please call me at FTS 556-8000.

Thank you for your assistance.

Sincerely yours,

Reed Sato
Attorney-Advisor
Enforcement Division

Regulation of Paint Filters

David Friedman, Manager
Waste Analysis Program (WH-565B)

Chet McLaughlin, Chief
State Programs Section (Region VII)

Recently you indicated that the States of Iowa and Kansas have raised questions concerning the regulation of paint filters removed from spray booths. The questions revolve around how we regulate those filters which are hazardous wastes when removed from the spray booth but not after immersion in water.

I will try to answer the specific questions raised in your memo (a copy of which is attached).

1. In calculating the quantity of hazardous waste gererated, it is the weight of spent filters (including occluded paint) that is used. Generators are responsible for evaluating their waste to determine whether it is a hazardous waste or not. If necessary they may have to test their waste to make such an evaluation. However, many times testing is not required. The necessary evaluation can be made on the basis of engineering calculations. If the water fails the EP toxicity test it is also a hazardous waste and its weight would be added to that of the filters.

2. Waste paint filters are handled the same as any other hazardous waste relative to the small generator exemption.

3. I am not sure why this particular waste needs special treatment in the hazardous waste system other than perhaps for a streamlined system of obtaining treatment permits for the hazard mitigation operation (the 55 gallon drum filled with water). Except in the case of the EP Toxic waters, the immersed filters are not hazardous wastes and can be placed in a sanitary landfill at will, whether the generator is a large or small generator.

I hope I have answered your questions. If not give me a call at 8-755-9187 (382-4806 after September 30).

Enclosure

cc: Lehman
Lindsey
Corson
Straus
Hotline

WH-565B:DFRIEDMAN:pes:x59187:9-15-82 DISK PS-57-15

9444.1982(01)
Enclosure

MEMORANDUM

DATE: August 19, 1982

SUBJECT: Regulation of Paint Filters

FROM: Chet McLaughlin, Chief
State Programs Section

TO: Allan Corson, (WH-565)
Chief Waste Characterization Branch

The State of Kansas and Iowa have raised a series of problems with the regulation of paint filters from pray booths especially those generated infrequently and in small numbers. When these filters are removed, they can be subject to self ignition and are usually treated by immediately immersing them in water. Typically these individual filters are then transporter to a nearby sanitary landfill and immediately buried to prevent auto ignition. This produces the potential for the container, water, filter and waste to become hazardous waste subject to handling as such.

The alternative is to allow the filter to ignite and burn releasing small quantities of potentially hazardous air contaminants and handling of the ash a appropriate.

The questions raised by the states on this subject are several:

1. Do they consider the weight of the paint or paint and filter for the generation quantity? Does the container and water have to be tested before it can be disposed? If the water fails the EP toxicity test must it be handled as a hazardous waste?

2. Do they have to require the handling of filters as a hazardous waste at firms where other wastes achieve the 1000 kg./mo level and allow others to be treated as small quantity generators able to use sanitary landfills?

3. Assuming the petition route is not appropriate, the use of enforcement discretion is apparently the only available mechanism to allow the states to assume equal treatment and safe handling of this particular wastes? Are others under consideration?

4. Can they anticipate any regulation interpretation memorandum on this related subjects in the next several months?

This has been retyped from the original document.

WH-565N/JSALES:NA:S248:X24770:6/1/83:DISK:JS0614

JUN 10 1983

Dan Nelson
Waste Management, Inc.
3003 Butterfield Road
Oak Brook, Illinois 60521

RE: WCRJS0614

Dear Mr. Nelson:

In your letter of April 4, 1983, you requested that EPA confirm your interpretation of the RCRA hazardous waste regulations as they pertain to the spent solvent listings, and the status of leachate from sanitary landfills that have received hazardous waste. I trust that this letter adequately addresses your concerns.

As stated in your letter, the solvent listings (EPA Hazardous Waste Nos. F001-F005) pertain to spent solvents (i.e., solvents used for their solvent properties). Industrial process waste containing solvents, on the other hand, are not included in the solvent listings except to the extent that it is a mixture of a solid waste and a spent solvent. Thus, you are correct in stating that spent 1,1,1-trichloroethane generated from a cleaning process is considered EPA Hazardous Waste No. F002, while industrial process waste containing 1,1,1-trichloroethane as a contaminant are not listed spent solvents. These wastes, however, may be listed individually under Subpart D of the regulations.

Leachate from a sanitary landfill that has received listed wastes is also considered a hazardous waste. However, as you stated, leachate containing F005 listed solvents is only hazardous to the extent that it exhibits the characteristic of ignitability.

Should you have any questions, please feel free to give me a call at (202) 382-4770.

Sincerely yours,

Matthew A. Straus
Manager
Hazardous Waste Definition Program

DATE: July 11, 1983

SUBJECT: Scope of the Listing KO61, Emission Control Dust/Sludge from the Primary Production of Steel in Electric Furnaces

FROM: Alan Corson, Chief
Waste Characterization Branch (WH-565-B)

TO: Chief, Residuals Management Branch
Air & Waste Management Division

This is in response to your question as to the scope of the listing KO61 Emission control dust/sludge from the primary production of steel.

Interpretation of Scope of KO61

The KO61 waste listing is defined under 40 CFR Section 261.32 as "Emission control dust/sludge from the primary production of steel (T)."

- This applies to steel produced in electric furnaces, not blast furnaces.
- The listing does not include foundries.
- Facilities that use scrap steel as a raw material are included in the listing.
- The listing does not include iron making.

If a facility produces steel in an electric arc furnace using steel scrap, the emission control dust meets the listing of KO61. What is done with the steel after this process does not affect the process wastes' inclusion in the listing.

JL 20

MEMORANDUM RE: WCBLG2016

Subject: Hazardous Wastes from Solar Cell and High Tech Industries

From: John Skinner, Director
Office of Solid Waste (WH-562)

To: Leland Modesitt, Director
Office of Legislation (A-103)

In response to your inquiry for follow-up with Senator Burdick's staff, the production of solar cells and other high technology devices (transistors, integrated circuits), involves a variety of manufacturing processes and can include the use of industrial solvents and metal treatment. Hazardous wastes generated from these operations include electroplating wastewater treatment sludges that contain cyanides and heavy metals that are toxic or reactive; spent solvents that are toxic or ignitable; and discarded commercial chemical products or manufacturing chemical intermediates that are also toxic or reactive.

However, this does not mean all wastes generated from the production of high technology devices should be considered hazardous. The determination as to whether or not a waste is considered hazardous is made in one of two ways. In one case, the Agency has listed certain wastes as hazardous under 40 CFR 261, Subpart D (§261.31 wastes from non-specific sources; §261.32 - wastes from specific sources; §261.33 - discarded commercial chemical products). In another case, a waste is hazardous if it exhibits one of the characteristics of a hazardous waste (i.e., ignitability, corrosivity, reactivity, and EP toxicity). Under 40 CFR 261 Subpart C, each generator is responsible for determining whether his waste exhibits any of these characteristics. If the waste exhibits a hazardous waste characteristic or is a listed waste, the facility will be deemed a generator of hazardous waste, and the waste must be managed in accordance with the hazardous waste management regulations.

If you have any further questions on this matter, please do not hesitate to contact Alan Corson or Matthew Straus, of my staff, at 382-4770 at any time.

OAT:lg:248:382-4770:WSM Disk LG2016

WH-565B
OSWER 60

MEMORANDUM 9444.1984(01)

DATE: Mar 5, 1984

SUBJECT: Clarification of the Listings for Metal Heat Treating F010, F011, and F012.

FROM: Matthew A. Straus, Acting Chief
Waste Identification Branch (WH-562)

TO: James H. Scarbrough, Chief
Residuals Management Branch
Air & Waste Management Division
Region IV

This memorandum is in response to your question regarding the scope of the cyanide listings for metal heat treating operations (EPA Hazardous Waste Nos. F010, F011, and F012). In particular, you asked whether the form of cyanide (i.e., complex cyanide or free cyanide) was germane in determining whether one had a listed waste. In short, the answer is no. In listing these wastes as hazardous, the Agency was (and is still) concerned with the management (or management) of cyanide wastes (both complex cyanide and cyanide salts). If the Agency felt that a distinction was necessary, it would have done so in the listing. For example, EPA Hazardous Waste No. F012 would have been listed as follows:

> "Quenching wastewater treatment sludges from metal heat treating operations where complexed cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges)."

In addition, you should be aware that the form of cyanide often changes during the heat treating operation or subsequent treatment; therefore, although you may begin with cyanide salts (free cyanide) your waste may be primarily complex cyanide. The waste listings take this into account by differentiating between the form of cyanide present in the waste (i.e., only cyanide-salt containing wastes (free cyanides) are listed as posing a reactivity hazard).

Furthermore, it should be noted that although complex cyanides are less toxic than free cyanides, complex cyanide-bearing wastes are of concern because of their potential to undergo photodecomposition to form toxic hydrogen cyanide and free cyanide decomposition by-products. (See Listing Background document for Cyanide Wastes, Response to Comments Section,

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Comment No. 3 for more details.)[1] Therefore, if the metal heat treating process uses cyanides in any form, the process is covered by the hazardous waste listings.

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[1] This document is included in the document §§261.31 and 261.32 - Listing of Hazardous Wastes (Finalization of May 19, 1980 Hazardous Waste List), #1941.28 November 14, 1980.

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RCRA/SUPERFUND HOTLINE SUMMARY

MARCH 84

Company A etches semiconductor silicon wafers. Company B use the wafers to manufacture printed circuit boards. The two companies are totally separate. Is company A's wastewater treatment sludge from the etching process classified as a F006 waste?

Yes, the wastewater treatment sludge is regulated as F006. The chemical etching is viewed as electroplating, even though the Background Document on electroplating did not include the etching process. The Background Document was overly narrow in including only the manufacture of printed circuit boards and excluding etching.

Source: Bill Sproat and Myles Morse

9444.1984(03)

APR 1984

Mr. John D. Nalewaja, President
Weed Science Society of America
c/o Agronomy Department
North Dakota State University
Fargo, ND 58105

RE: SMBASC1A32

Dear Mr. Nalewaja:

I am writing in response to your letter of March 20, 1984, and the resolution of the Weed Science Society of America requesting the removal of 2,4-D waste from regulation under the Resource Conservation and Recovery Act (RCRA).

The toxic properties of 2,4-D were evaluated by the EPA's Office of Drinking Water as part of the process leading to the development of the National Interim Primary Drinking Water Standards (NIPDWS). Inclusion of 2,4-D in the list of toxicants regulated under 40 CFR 261.24 and 261.33 of the RCRA regulations was based on the evaluation that was conducted in support of the NIPDWS.

The NIPDWS for 2,4-D was derived assuming that the lowest long term level with minimal or no effects for the rat and the dog is 50 and 8 mg/kg/day respectively. Based on these values, a "safe level" for man was derived of 1.12 mg/man/day. (See National Interim Primary Drinking Water Regulations, EPA-570/9-76-003, Environmental Protection Agency, Office of Water Supply). Verschueren (Handbook of Environmental Data on Organic Chemicals, Van Nostrand Reinhold, New York, NY, 1983) indicates that 2,4-D is significantly toxic to mammals (i.e., oral rat LD50 300-1000 mg/kg, oral mouse LD50 375-521 mg/kg, oral dog LD50 100 mg/kg). In addition, 2,4-D exhibits acutely toxic effects at the mg/l level in a variety of aquatic species which indicates that its uncontrolled release into the environment can also affect the ecological balance. For the above reasons, 2,4-D and its salts have been listed under the hazardous waste identification regulations.

WH-562B:DFRIEDMAN:lg:S248:3824770:WSM Disk ASC1A32
AX400797
DUE DATE: 4/9/84

You may petition the Agency to change its regulations; for OSW to remove 2,4-D from regulation under RCRA, you must demonstrate that the chemical would not pose a hazard to human health or the environment even if improperly disposed of. For more information, please contact David Friedman of my staff (202-382-4770). Requests or inquiries related to the NIPDWS and their rationale should be directed to:

Dr. Joseph Cotruvo
Director
Criteria and Standards Division
Office of Drinking Water, WH-550
401 M Street, SW
Washington, DC 20460
(202)382-7575

Sincerely yours,

John H. Skinner
Director
Office of Solid Waste (WH-562B)

cc: J. Cotruvo

April 26, 1984

Dave Dolan
Environmental Scientist
Waste Management Branch
Region V
U.S. Environmental Protection Agency
230 S. Dearborn Street
Chicago, IL 60604

Dear Dave:

As a result of several inquiries, we wish to clarify which wastes generated by Bell Lumber and Pole, located in New Brighton, Minnesota, are listed as hazardous under Part 261 of the hazardous waste regulations implementing the Resource Conservation and Recovery Act. At the present time, one category of wastes from the wood preserving industry is included as a hazardous waste from a specific source: K001 "Bottom sediment sludge from the treatment of wastewaters from wood preserving processed that use creosote and/or pentachlorophenol".

From process descriptions compiled by the Minnesota Pollution Control Agency, the National Institute of Occupational Safety and Health, and Region V during a recent plant site visit, the following is my understanding of the current and past waste generation points at the Bell Lumber and Pole facility.

1. Work tank/storage tank sludges. These sludges accumulate at the bottom of vertical storage tanks for preservative solutions of pentachlorophenol. In the past, these tanks may have been used for creosote preservative solutions. These tanks receive reclaimed preservative solutions, store them, and in some cases heat the reclaimed solutions prior to reuse in the wood treating tank. Currently, sludges from these tanks are discharged to the mechanical oil/water separator described below.

2. Mechanical oil/water separator sludges. Wastewater contaminated by oil/preservative solutions and sludges are collected at a sump at the wood treating tank and are

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discharged to a tank (81' x 6') where oil/water separation takes place. This oil/water separation procedures treats effluent generated after completion of the wood treating process. Although no water is intentionally added to this process, a substantial amount of water is released from the wood itself during hot oil/preservative solution steeping. Some of this wastewater is emitted to the air as steam during the steeping process, and some is entrained in the preservative solution or settles to the bottom of the wood treating tank.

The first mechanical oil/water separation device was installed in 1976 at "Tank 8". A steel belt oil/water separator, installed in 1980, is in current use and operated daily except when the weather is cold enough to freeze the water. This oil/water separator daily receives contaminated wastewater effluent directly from the treating tank. Approximately one time each year, bottoms from the storage/work tanks are also added to the mechanical oil/water separator.

3. Thermal dehydration/evaporation sludges. The oil/preservative solutions recovered by the mechanical oil/water separator undergo a secondary wastewater treatment step by thermal dehydration/evaporation. This is currently conducted in the "Butt Treatment Tank" with heating coils, generating a sludge. Other sludges may be added directly to this thermal dehydrator/evaporator without first being subjected to mechanical oil/water separation. Thermal dehydration or evaporation of wastewater from wood preserving solutions typically generates a sludge.

Before installation of the mechanical oil/water separation devices, a thermal dehydration treatment was used as the sole procedure for drying oil/preservative solutions from the wood treating tank. Fuel oil, used as the solvent for either creosote or pentachlorophenol, typically will entrain significant amounts of water during the wood treating process. Entrained wastewater must be removed to regenerate dry oil/preservative solutions for good penetration into the wood during the treating process. Thermal dehydration of the used oil/preservative solutions in the past could be assumed based on typical industrial process information, with concomitant sludge generation.

From the above description of sludge generating processes, the mechanical oil/water separator sludges and the thermal dehydrator sludges meet the K001 listing description of wastewater treatment sludges from wood preserving processes using creosote and/or pentachlorophenol. If the storage tank/work tank sludges are mixed with the mechanical oil/water separator sludges or thermal dehydration/evaporation sludges, then the resulting mixture also must be managed as a K001 hazardous waste.

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Page 21 of the Listing Background Document for the Wood Preserving Industry states "wastewater treatment sludges are generated first at oil/water primary separation", which includes any mechanical oil/water separation device as described for the Bell Lumber and Pole facility, as well as sludges from surge tanks, drainage pits, etc. On page 21, dehydration of oil/preservative solutions and on page 26, evaporation of wastewater from the addition of heat are also described as wastewater treatment processes generating sludges defined as K001 hazardous wastes.

Based on processing procedures used by the wood preserving industry, it is reasonable to assume in the absence of proof to the contrary that Bell Lumber and Pole was generating a K001 wastewater treatment sludge prior to 1976, and indeed throughout its manufacturing history. This is because water removal from spent wood treating solutions is necessary to regenerate usable oil/preservative solutions. We do not know if thermal oil/preservative dehydration or another procedure was used.

Further indication that K001 wastewater treatment sludges were generated prior to installation of the mechanical oil/water separation devices in 1976 and throughout the facility's history comes from the CERCLA "Notification of Hazardous Waste Site", date June 9, 1981. Thomas E. Doten, then Vice President and Plant Manger of Bell Lumber and Pole, states that K001 waste was placed in the on-site landfill up until the late 1960's. He was unable to estimate the amount of K001 waste deposited in this landfill "given age [circa 1920] of facility".

Generation rates of K001 wastewater treatment sludges may be estimated by information in the Listing Background Document and the Effluent Guidelines Division Data Collection Portfolio. From the Listing Background Document, the amount of pentachlorophenol treated wood and the amount of pentachlorophenol wastewater treatment sludges generated annually yields an estimate of 0.276 cubic feet of sludge per 1000 cubic feet of treated wood. Effluent Guidelines Division data for all types wood treating processes (creosote, pentachlorophenol), indicates that approximately 0.432 cubic feet of sludge is generated per 1000 cubic feet of treated wood from zero wastewater discharge plants.

An average wood preserving plant treats 4000 cubic feet of wood per day. Therefore, the annual wastewater treatment sludge generated by a plant would be in the range of 55-87 drums. Some individual plants have indicated they produce several times as much wastewater treatment sludge. If sludges from other plant sources such as storage or work tanks are mixed with the wastewater treatment sludges before or after oil/water separation procedures, then this volume estimate would be higher.

I hope this information is useful in evaluating the waste sources of groundwater contamination from the landfill on the

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This has been retyped from the original document.

Bell Lumber and Pole facility. If you have any further questions, please do not hesitate to call me.

Sincerely yours,

Cate Jenkins, Ph.D.
Waste Identification Branch (WH 562)
Characterization and Assessment Division

cc: Matthew A. Straus/OSW
Francine Jacoff/OSW
Steve Silverman/OGC

This has been retyped from the original document.

RCRA/SUPERFUND HOTLINE SUMMARY

APRIL 84

2. The dry cleaning industry use carbon filters to filter the solvent, perchloroethylene. Are the resulting carbon filters which contain spent perchloroethylene viewed as hazardous waste?

   The filters are viewed as F002, and the weight of the filter is counted toward the small quantity generator (SQG) limit of 1000 Kg. These filters are typically generated by the dry cleaning industry and may contain up to one gallon of perchloroethylene.

   Source: Alan Corson
   Research: Denise Wright

RCRA/SUPERFUND HOTLINE SUMMARY

APRIL 84

3. Wastewater from an API separator discharges into multiple sequential surface impoundments where the solids fall out.

   a) Is the wastewater from the API separator a hazardous waste if it doesn't exhibit a Subpart C characteristic?

   b) Is the sludge that precipitates out in the impoundments a KU51 waste?

   c) If the wastewater is filtered, are the solids from filtration KU51?

   a) No.

   b) Yes; the API separator and subsequent impoundments used for settling of solids are viewed as all part of the API separation system.

   c) Yes.

   Source: Myles Morse and Jim Poppiti
   Research: Denise Wright

9444.1984(07)

May 30, 1984

W. H. Yancey
NL Baroid
P.O. Box 1675
Houston, TX 77001

Dear Mr. Yancey:

This is to confirm our May 29, 1984 telephone conversation regarding your letter to Alan Corson dated May 17, 1984, regarding ballast fluid classification. I hope this discussion clarifies your question on the formaldehyde.

Formaldehyde is listed (as U122) in 40 CFR 261.33(f). This listing refers only to discarded commercial chemical products, off-specification species, container residues, and spill residues having the generic name "formaldehyde." The comment in Section 261.33(d) explains that the term "commercial chemical product" refers to a substance manufactured for commercial use which is commercially pure or a technical grade and formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a process waste, that contains any of the substances listed in 261.33(e) or 261.33(f). To be considered a hazardous waste, such process wastes will be listed in either Sections 261.31 or 261.32 or be identified as a hazardous waste by characteristics as set forth in the regulations.

In other words, formaldehyde (and sodium pentachlorophenate) is being used to keep down growth in the ballast fluid. The fluid is not considered to be the commercial chemical product formaldehyde. Ship ballast fluid would have to be specifically listed as a hazardous waste stream or be hazardous on the basis of the characteristics (ignitability, corrosivity, reactivity, or EP toxicity), as explained above.

If you have any further questions, feel free to call me at (202) 382-4804. You should also be able to contact the RCRA/Superfund Hotline tollfree at (800) 424-9346 for assistance with any aspect of the RCRA regulations.

Sincerely yours,

Irene Horner
Studies and Methods Branch (WH-562B)

MUCA U4

JUN 6 1984

JUN 6 1984

Mr. Kenneth H. Holyoak
American Chemical Company
505 N. Lake Shore Drive
Suite 6101
Chicago, IL 60611

Dear Mr. Holyoak:

I am writing in response to your May 15, 1984, request for clarification of the existing Resource Conservation and Recovery Act (RCRA) hazardous waste identification regulations as they apply to deodorants for portable toilets as well as potential additional requirements due to pending legislation.

Chemical deodorants containing small amounts of formaldehyde are used to provide sanitary conditions in portable toilet units. Let me explain how the current regulations apply to formaldehyde. Formaldehyde is a hazardous waste if it is a discarded commercial chemical product. The comment in 40 CFR 261.33(d) explains that the term commercial chemical product refers to substances manufactured for commercial use which are commercially pure or a technical grade and formulations in which the chemical is the sole active ingredient. It does not refer to all materials containing any amount of formaldehyde.

In other words, the formaldehyde is not the sole active ingredient of the deodorant and is therefore not a listed hazardous waste stream. The deodorant would only be a hazardous waste if it exhibited any of the characteristics defined in the regulations (ignitable, corrosive, reactive, or EP toxic, as outlined in Sections 261.21, 261.22, 261.23, and 261.24).

WH-562B/IHorner/ih/S-248/4804/5-29-84/Disk IH01/Index 04
Control No.AX401266 ,

Pending legislation in Congress plans to regulate lower quantities of hazardous waste than are presently subject to regulation under the small quantity generator regulations. The RCRA reauthorization legislation changes currently do not reflect any changes in the waste identification. Thus, the anticipated changes will have no impact on the regulation of deodorants containing formaldehyde.

Thank you for your inquiry. As you know, 40 CFR 262.11 requires any generator of a solid waste to determine whether or not the waste is hazardous, as I have informally reviewed above with you. If you have any other questions, feel free to contact Irene Horner of my staff at (202) 382-4804 or the RCRA/Superfund Hotline at (800) 424-9346 for further regulatory clarifications.

Sincerely yours,

John Skinner, Director
Office of Solid Waste (WH-562)

9444.1984(09)

JUN 13 1984

RE: WIBBS840102

MEMORANDUM

SUBJECT: Zinc Plating (Segregated Basis) on Carbon Steel

FROM: Matthew A. Straus, Acting Chief
Waste Identification Branch (WH-562B)

TO: William H. Minor, Chief
Technical Permits and Compliance Section
Waste Management Division
Region V

After evaluating the information supplied by the Gulf and Western Stamping Division regarding their phosphating operations and zinc plating line, it is our conclusion that the wastes generated from both their operations meet the description of EPA Hazardous Waste No. F006. More specifically, the EPA Background Document defines phosphating as a component of electroplating of chemical conversion coating. Other components of this category include coloring, chromating, and immersion plating. Accordingly, wastes generated from the phosphating operation at Gulf and Western would be considered hazardous wastes.

With respect to their other operation, wastewater treatment sludges generated from zinc plating operations on carbon steel are not considered hazardous wastes when the waste stream from these operations is maintained and treated separately (segregated) from other waste stream generated at the facility. However; Gulf and Western's zinc plating line also includes a chromate passivating bath in which the low carbon steel stampings are dipped after plating. Chrome passivating is considered a component of chemical conversion coating and therefore the wastewater treatment sludges generated from this operation would also be considered hazardous.

Therefore, wastewater treatment sludges generated by both operations at Gulf and Western are considered EPA Hazardous Waste No. F006 and subject to regulation under 40 CFR 262-266. If you have further questions regarding this matter, please do not hesitate to call Mr. William Sproat of my staff at FTS 382-4783.

WH-562B/BSPROAT/pes/475-8551/6/7/84/Disk BS840102

25 JUL 1984

MEMORANDUM

SUBJECT: Regulation of Wastewater Treatment Effluent from Processes that Generate K001 and F006 Wastewater Treatment Sludge

FROM: John H. Skinner, Ph.D.
Director
Office of Solid Waste

TO: James H. Scarbrough, Chief
Residuals Management Branch
Air and Waste Management Division

This memo is in response to your request dated May 21, 1984, concerning regulation of EPA Hazardous Waste Nos. K001 and F006.

First, you requested clarification of the listings K001 and F006 as to the scope of their coverage. These listings include any sludges derived from the treatment of wastewaters regardless of where the sludges are formed. Thus, if a sludge is formed in a wastewater treatment tank, filtration device, or surface impoundment, it is K001 or F006 sludge. These wastewater treatment units would be subject to all hazardous waste regulations, including appropriate permitting standards.*

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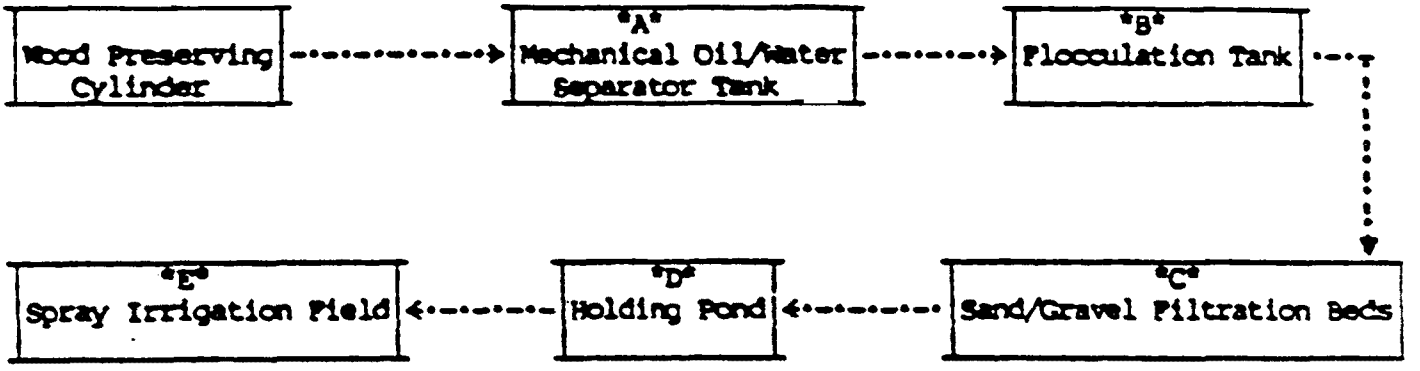
* There is an exception: tanks that treat or store hazardous wastewaters are exempt from the Part 264 and 265 management standards when the tank is part of a wastewater treatment unit as defined in §260.10.

You also requested clarification of the regulatory status of the effluents from a particular wood preserving facility. The wastewater treatment train is illustrated schematically below:



The effluents from the oil/water separator tank ("A") and the chemical flocculation tank ("B") are not classified as the listed hazardous waste K001 after the listed hazardous wastewater treatment sludges have settled out, even though some flocculated material is carried along with the effluent stream. When the Agency listed wastewater treatment sludges from wood preserving processes, the Agency differentiated between sludges which settle out from successive treatments of process wastewaters and the wastewater stream itself. The wastewater effluents from these two tanks would, therefore, be subject to regulation only if they meet one or more of the characteristics of a hazardous waste, as set forth in §§261.21-261.24.

This facility next uses a sand filtration surface impoundment ("C") to treat the wastewater effluent after oil/water separation and flocculation. The sand filter consists of two 20 x 20 x 15 ft. surface impoundments, with natural clay bottoms, and sides constructed of preserved wood. The wastewater is added to the top of these units and collected as an effluent from the bottom, and sent to a holding pond ("D") where additional wastewater treatment sludges are generated. Both the sand filter and the holding pond would be subject to all hazardous waste regulations and permitting standards since they are surface impoundments used to manage a hazardous waste (i.e., the sludge).

The principal regulatory question presented by this sand filtration unit is whether the wastewater that passes through the unit loses its status as "wastewater" and becomes "leachate" because it percolates through the listed sludge that has been trapped in the unit. We do not believe that the passage of a contaminated liquid (e.g., leachate, wastewater) through a filter should cause us to redefine what that liquid is, even though the filter may change the chemical makeup of the contaminated liquid. For purposes of our

regulatory definitions, what comes out of a filter is the same thing that goes into the filter. A wastewater that passes through a filter in a treatment system is still a wastewater. That result is not changed by the fact that the filter happens to be a sand bed and the wastewater emerges from the bottom rather than the top of the treatment unit.*

The final step in the wastewater treatment system used by the wood preserving facility in question is a spray irrigation field ("E"). We are currently investigating the status of this unit to determine if it meets the definition of a land treatment unit, a surface impoundment, or a landfill. We expect to get back to you on this point in the near future.

The above discussion regarding wastewater treatment units, wastewaters, and the storage or disposal of hazardous wastewater treatment sludges wastes is also applicable to other facilities generating similar wastes.

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* It should be noted that this approach also prevents an operator from placing a sand filter at the bottom of a landfill and then arguing that the liquid emerging from the bottom of the unit is no longer a leachate. Leachate emerging from waste in a landfill remains a leachate even after it has passed through a filter.

9444.1984(11)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

27 JUL 1984

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

Subject: Clarification of K062 - Spent Pickle Liquor Listing

From: John H. Skinner, Director
Office of Solid Waste

To: Directors, Waste Management Divisions
EPA Regions I-X

Within the past year, several EPA Regional Offices have requested clarification of EPA Hazardous Waste No. K062 - Spent pickle liquor from steel finishing operations. This interpretive memorandum addresses several questions and issues which have been raised regarding the listing.

1) Which operations/processes are considered "steel finishing operations" and thus are covered by the listing?

The Office of Solid Waste (OSW) defines "steel finishing operations" as processes which impart desired mechanical and surface characteristics to steel. The following processes are included in this description and are intended to be covered by the K062 listing, provided that spent pickle liquor is generated:

1) acid pickling
2) alkaline cleaning
3) cold reduction
4) blast cleaning
5) cold drawing
6) cold rolling
7) galvanizing
8) coating with organic and inorganic compounds

9) tempering 1/
10) coating of steel with metals
11) tin plating
12) electropolishing

Although the background document for K062 addresses only spent pickle liquor from the iron and steel industry, the Agency intended the listing to cover all industries engaged in the pickling of steel. Indeed, many persons who generate spent pickle assumed that the listing was much broader then indicated in the background document.2/ Furthermore, on January 4, 1984, (see Notice of Availability of Data and Request for Comments, 49 FR 427) the Agency stated that steel finishing is practiced by a diverse group of manufacturers. The large number of notifiers indicate that generators in many industry categories are aware of this interpretation.

Recently, representatives from the porcelain industry informally challenged OSW on its interpretation of the K062 listing. It is their position that the listing pertains only to the iron and steel industry.3/ However, for reasons stated earlier, to the extent that facilities within this industry category pickle steel prior to coating or enameling, the spent pickle liquor (or any waste derived therefrom) is considered the listed waste.

The Agency realizes that concentrations of the hazardous constituents of concern for which spent pickle liquor was listed may differ among industries based on process variations; however, wastes that do not meet the criteria for which pickle liquor was originally listed may be excluded from regulation on a site-specific basis (delisting pursuant to 40 CFR 260.20 and 260.22). The Agency also will consider industry-wide petitions to delist these wastes.

1/ Although coating of steel with metal (electroplating) is considered "steel finishing," the Agency did not intend the K062 listing to include electroplating processes that generate spent pickle liquor. This would be duplicative since electroplating wastes are specifically covered under F006.

2/ Data from the RCRA Notification data base indicate that a diverse group of industry categories pickle steel and generate spent pickle liquor (e.g., metal working machinery and equipment; refrigeration and service industry machinery; coating, engraving and allied services; sanitary services; aircraft and parts, and others).

3/ Approximately half the facilities within the porcelain industry have notified that they generate either K062 or the lime stabilized waste pickle liquor sludge.

At this time, the Agency has taken action on a rulemaking petition submitted by the American Iron and Steel Institute (AISI) to remove lime stabilized waste pickle liquor sludge (LSWPLS) (formerly referred to as lime neutralized waste pickle liquor sludge) from the presumption of hazardousness contained in the regulations. This exclusion however, applies only to LSWPLS that is generated by the iron and steel industry (SIC Codes 331 and 332). (See 49 FR 23284 - 23285, June 5, 1984 for specific details regarding the conditions of the exclusion).

2) Many electroplating operations pickle prior to electroplating. Is the waste generated from this process considered F006, K062, D002, or both F006 and K062?

In considering petitions to delist electroplating waste, the Agency has stated that the F006 listing includes the acidic wastes (i.e., spent pickle liquor) from the electroplating process. Electroplating operations typically pretreat the metal using acidic baths prior to electroplating. The acidic wastes from this process are generally mixed with spent plating bath solutions and lime treated. Sludge generated from this process is considered F006. For example, an electroplater acid pickles metal parts as part of the electroplating process. The resultant wastewater (including spent pickle liquor and rinsewater) is neutralized with lime. Sludge generated from this process is F006. In another example, a galvanizer also pickles metal parts prior to galvanizing. Since galvanizing is not included under the electroplating category, spent pickle liquor from this process would be considered EPA Hazardous Waste K062. If the pickle liquor is lime treated prior to disposal, the sludge from this process is a hazardous waste by virtue of the "residue rule" (§261.3(c)(2)).

In cases where acidic wastes from the electroplating operation remain untreated or are segregated from other process waste and treated separately, the waste is then considered K062 (or lime stabilized waste pickle liquor sludge).

3) Does the K062 listing pertain to spent pickling acids other than those listed in the background document for K062 (i.e., H_2SO_4, HCL, and HNO_3 + HF)?

In developing the background document for K062, the Agency listed the most commonly used pickling agents. However, we intended the listing to include all acids used in the pickling of steel.

I trust that this memorandum adequately clarifies the K062 listing. Should you have questions, or require additional information, please call Jacqueline Sales at FTS 382-4770.

cc:

Gene Lucero, OWPE
Kirk Sniff, OECM
Bill Hedeman, OWRR

9444.1984(12)

July 30, 1984

Kent Gray
Utah State Department of Health
Hazardous Waste Program
P.O. Box 2500
Salt Lake City, Utah 84110

Dear Mr. Gray:

This letter responds to your recent inquiry regarding the regulatory status of spent acid from electropolishing of stainless steel (i.e., whether the waste is considered EPA Hazardous Waste No. K062--Spent pickle liquor from steel finishing operations).

As you stated in an earlier conversation with Jacqui Sales, of my staff, electropolishing is a process which utilizes a mixture of sulfuric and phosphoric acids (pH 1.0) to impart a shiny finish to stainless steel. As Ms. Sales explained, the spent pickle liquor listing was intended to include those processes where acid is used to impart a desired surface characteristic to steel or steel products; in particular, to remove oxide scale. Although the background document for the listing addresses only the commonly used pickling acids (i.e., hydrochloric, sulfuric, nitric, and hydrofluoric), the Agency intended the listing to include all acids used in the pickling/cleaning of steel. Thus, spent acid from electropolishing is considered the listed waste.

I trust that this letter adequately addresses your concerns. Should you have additional questions or require further information, please call Jacqui Sales at (202) 382-4770.

Sincerely,

Matthew Straus
Chief
Waste Identification Branch

This has been retyped from the original document.

MEMORANDUM 9444.1984(14)

DATE: July 30, 1984

SUBJECT: Dragout from EPA Hazardous Wastes No. F007 - Spent Cyanide Plating Bath Solutions from Electroplating Operations (Except for Precious Metals Electroplating Spent Cyanide Plating Bath Solutions)

FROM: Matthew A. Straus, Acting Chief
Waste Identification Branch (WH-562B)

TO: James H. Scarbrough, Chief
Residuals Management Branch
Air & Waste Management Division

This is written in response to your inquiry concerning dragout from plating bath solutions listed as EPA Hazardous Waste No. F007. Briefly, the process described at Georgia Tubing involves the transfer of parts from a plating bath solution to a chlorination tank to stop the plating process. During this transfer, dragout drips off the plated parts, is collected and transferred to the chlorination tank for treatment.

In general, your interpretation that the chlorination tank receives and treats a listed hazardous waste and is therefore a hazardous waste treatment tank is correct. However, it should be pointed out that the definition of EPA Hazardous Waste No. F007 refers to spent plating bath solutions only. Therefore, the plating bath solution itself would not be considered an F007 waste until it is spent. Only the dragout from the plating operation or if the plating bath solution itself was dumped would be considered an F007 waste because at that point in the operation it would be considered spent. In addition, any sludge that forms in the bottom of the chlorination tank would also be considered an F007 waste. The sludge would be considered an F006 waste only if wastewaters from the electroplating operation were to enter the chlorination tank for treatment in addition to the F007 waste. If you have any further questions on this matter, please do not hesitate to call Mr. William Sproat of my staff at FTS 382-4783.

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RCRA/SUPERFUND HOTLINE MONTHLY REPORT

AUGUST 1984

LISTING OF BAGHOUSE DUST GENERATED FROM REMELTING OF PRIMARY PRODUCTION STEEL

1. A facility generates a baghouse dust from remelting primary produced steel. The remelting occurs in electric furnaces. The baghouse dust contains fluoride neutralized by calcium carbonate and the heavy metals: lead and selenium. The baghouse dust has been analyzed for the heavy metals (50.65ppm lead and 13ppm selenium). The analytical methods used were 8.56 and 8.59, respectively, in SW-846 (not the E.P. toxicity test). Assuming that the baghouse dust will fail the EP toxicity test, should the waste be K061 (even though it is not primary smelting) or should it be D008 and D010?

   The waste generated from this process is K061. Although steel is being remelted, this process is considered primary production for the purposes of RCRA.

   Source: Matt Straus
   Research: Gordon Davidson

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RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

AUGUST 84

3. A company recycles methyl chloroform (F002) through a distillation process. Often after distillation, the recovered methyl chloroform does not meet market specifications and must be disposed. Is this waste listed as F002 or U226?

   Off-specification solvents produced from the distillation of listed solvent hazardous waste would be treated as an off-specification commercial chemical product if discarded according to 261.33 of Title 40 and considered U226 for regulatory purposes.

   Source: Penny Hansen
   Research: Tom Gainer

FEBRUARY 85

The New York State Health Department deemed a house unfit for habitation due to excessive chlordane levels in the soil around the house. The soil contaminated with chlordane was removed and placed in 55-gallon drums. The removal resulted in 45 drums of contaminated soil withan average concentration of 50 ppm. Is this contaminated soil a RCRA hazardous waste?

The contaminated soil is not a RCRA listed hazardous waste. Chlordane could only be considered a RCRA hazardous waste if it was discarded prior to use or was a container or spill residue. If chlordane met any one of these criteria, it would be a listed hazardous waste (U036), as listed and described in 40 CFR 261.33. In this situation, however, none of these criteria were met because chlordane was applied as a commercial chemical product. The generator must still determine if the contaminated soil exhibits any of the four RCRA characteristics (EP toxic, ignitable, corrosive, reactive). If the soil does not exhibit a characteristic, then it is neither a listed nor a characteristic hazardous waste. Although the contaminated soil is not a RCRA hazardous waste (assuming it does not meet a characteristic), the generator must be cognizant of potential liability under CERCLA if the waste is not managed properly.

Source: Alan Corson (202) 382-4770

This has been retyped from the original document.

March 4, 1985

Mr. Walter G. Talarek
American Wood Preservers Institute
1945 Gallows Road
Vienna, Virginia 22180

Dear Mr. Talarek:

This letter is in response to your letter dated February 14, 1985 in which you request clarification of the dioxin listing. In particular, you asked for comment regarding the applicability of the RCRA dioxin listings published in the Federal Register on January 14, 1985 to wastes from wood preserving processes using pentachlorophenol.

As you state in your letter, the following hazardous waste listings relating to pentachlorophenol were promulgated on January 14, 1985:

- F021: Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives (H)

- F027: Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols... (H)

- F028: Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027 (T)

[Please note that, contrary to the statement in your letter, the latter is a "T" not "H" waste].

Most of these wastes are not typically generated by the wood preserving industry. We, therefore, generally agree with your assessment that the final dioxin rule (published on January 14, 1985) does not include wastes by the wood preserving industry. However, wood treatment facilities could be covered under the listing if:

> A wood preserving facility makes a derivative of pentachlorophenol (e.g., a sodium or potassium salt); the wastes resulting from such a process would be EPA Hazardous waste F021.
>
> A wood preserving facility makes formulations containing tri-, tetra-, or pentachlorophenol or its derivates; waste resulting from such a process would be F021 wastes.
>
> A wood preserving facility discards unused formulations containing tri-, tetra-, or pentachlorophenol or its derivatives; these would be EPA hazardous waste No. F027.

Furthermore, although most of the wastes generated by the wood preserving industry are probably not regulated by the January 14, rulemaking, you are aware that we are presently investigating whether wastes resulting from wood preserving processes using pentachlorophenol should be listed as hazardous (or acute hazardous) wastes, and whether CDDs and CDFs should be added as constituents of concern in the wood preservation process waste

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already listed [EPA Hazardous waste K001]. As previously stated, we will take appropriate regulatory action if warranted.

I trust that this adequately addresses the concerns expressed in your letter. Please do not hesitate to call Matt Straus, if you have further questions concerning this matter, Mr. Straus can be reached at (202) 475-8551.

Sincerely yours,

John H. Skinner
Director
Office of Solid Waste

cc: J. Bellin

This has been retyped from the original document.

H-562B/IHorner/rm 248/382-4770/3-29-85/Disc IH5

APR 1 1985

Mr. John D'Aloia, Jr.
Deuel and Associates, Inc.
7304 Jefferson St., NE
Albuquerque, NM 87109

Dear John:

There are, indeed, several facets to identifying which solvents are F-listed wastes. I am going to review the points we discussed over the phone on March 20th, in response to your letter dated March 6, 1985.

Only those solvents designated in the "F" series are listed as "F" solvent wastes. In the May 19, 1980 Federal Register (45 FR 33122), §261.30(b) says that Appendix VII identifies the constituent which caused EPA to list the waste in §261.31 or §261.32 as EP toxic or toxic waste. In Appendix VII, only the listed solvents are specified. The spent solvent listings in §261.31 are worded "The following spent halogenated/non-halogenated solvents..." which clearly designates only the listed solvents.

Moreover, currently, only solvents used separately are covered by the F001-005 listings. The Agency issued a letter on July 21, 1981, to the Safety-Kleen Corporation that stated that the §261.31 listings only refer to "...spent solvents identifiable as any technical grade of the chemical that is produced or marketed and not to mixtures otherwise containing the chemical." (A copy of RIL 95 is enclosed.) As you observed, this interpretation is consistent with the approach taken in identifying §261.33 hazardous waste.

If individually used solvent waste streams are mixed after generation, the mixture is a mixture of F-listed waste streams. You can see how important it is to be able to identify the original source of the wastes in order to classify the mixture. Just knowing the composition of the waste is not enough to know what waste code(s) to apply to the waste. Regulations under development will identify spent solvents on the basis of total solvent contained in the mixture.

Finally, States with authorized programs may have more stringent or extensive regulations than EPA or operate a program with greater scope of coverage than EPA according to §§271.1(i) and 271.121(i). If States designate mixtures of solvents used

in combination as F003, the program is more extensive than the RCRA program, but operating in lieu of RCRA.

If you have any further questions, please do not hesitate to get in touch again.

Sincerely yours,

Alan S. Corson
Branch Chief
Studies and Methods

Enclosure

MAY 14 1985

Mr. Stuart E. Bassell, P.E.
Project Manager
Lawler, Matusky & Skelly Engineers
One Blue Hill Plaza
Pearl River, New York 10965

Dear Mr. Bassell:

I am glad to clarify the issue that you raised in your letter of April 1, 1985. The identification of RCRA "P" and "U" wastes (chemical products that are hazardous wastes when discarded) is not as obvious as the identification of other listed wastes.

As you know, 40 CFR 262.11 outlines the generator's responsibility for identifying hazardous waste as follows: first, check to see if the waste is excluded from regulation under Part 261 Subpart D, second, see if the waste is listed in Part 261 Subpart D, third (if it is not a listed waste), determine whether it is a characteristic waste by testing or applying knowledge of the process producing the waste. Neither the fish nor the used formalin would qualify as a listed RCRA waste.

To clarify why the fish and the used formaldehyde are not listed waste, the reasoning is as follows: Formaldehyde is listed (as U122) in 40 CFR 261.33(f). This listing refers only to discarded commercial chemical products, off-specification species, container residues, and spill residues having the generic name "formaldehyde." The comment in §261.33(d) explains that the term "commercial chemical product" refers to a substance manufactured for commercial use which is commercially pure or a technical grade and formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a process waste, that contains any of the substances listed in §261.33(e) or §261.33(f). To be considered a hazardous waste, such process wastes will be listed in either §§261.31 or 261.32 or be identified as a hazardous waste by characteristics, as set forth in the regulations.

The comment excludes waste materials that contain any "P" and "U" substances unless the waste stream is listed (i.e., listing formaldehyde used as a preservative) or the waste meets a Part 261 Subpart C criteria. This means EPA regulates unused chemicals but not all wastes containing the same chemicals. There are regulatory efforts underway that may eliminate this discrepancy.

Of course, the generator also needs to determine that the discarded fish and formaldehyde are not hazardous on the basis of exhibiting any of the characteristics of hazardous waste. It is unlikely that the formalin will be found to be ignitable, corrosive, reactive, or EP toxic. If you have any other questions on the Federal policy of regulatory hazardous waste, feel free to contact me at (202) 382-4770. Of course, you need to comply with the New York Department of Environmental Conservation determination in the State of New York, since the State program is operating in lieu of the Federal program.

Sincerely yours,

Alan S. Corson
Branch Chief

cc: James S. Moran, NYDEC

RCRA Input to Region IV Inquiry: UIC Well Inventory Update

Eileen B. Claussen, Director
Characterization and Assessment Division
Office of Solid Waste (WH-562)

Paul Baltay, Director
State Programs Division
Office of Drinking Water (WH-550)

Per your request the following paragraph is the RCRA response to the embalming fluid question in the subject inquiry.

> The RCRA hazardous waste identification regulations contain two mechanisms for identifying a waste as a hazardous waste, lists and characteristics. A waste is a hazardous waste if it either is listed (40 CFR 261.31, 32, or 33) or it exhibits one or more of the defined characteristics (§261.21, 22, 23, or 24). While used embalming fluids do not qualify as hazardous under any of these criteria, many people mistakenly believe they they do because formaldehyde, the key ingredient in such products, is listed under §261.33. Section 261.33 lists commercial chemical products which are hazardous wastes when discarded or intended to be discarded. It does not include wastes which result from the intended use of the product. Thus, embalming fluid, since it consists of formaldehyde plus some inert ingredients (e.g., colorants and perfumes), would be a hazardous waste if discarded unused and the septic tank/tile field could classify as a Class 4 well. However, if the generator is disposing of embalming fluid which has been used, for example, to flush body fluids out of the cadaver, then disposal of the fluid does not constitute disposal of a hazardous waste and the tank/field is not a Class 4 well.

WH-562B/DFRIEDMAN/ACORSON/margaret/rm S248/382-4770/5-17-85
DFA Diskette

MAY 24 [illegible]

Mr. Robert C. Scott
Director of Administration
Mobay Chemical Corporation
Agricultural Chemicals Division
P.O. Box 4913
Kansas City, MO 64120

Dear Mr. Scott:

I am writing in response to your request for a decision regarding whether certain wastes associated with the manufacture of pesticides at your Kansas City, Missouri plant are considered to be listed hazardous wastes. More specifically, you have inquired whether the manufacturing processes for prothiophos, sulprofos, fensulfothian, and MTMC generate listed spent solvents. These manufacturing processes use either toluene, methanol, or m-cresol as reactants in such excess that large amounts of these materials do not react and are removed from the process as a waste stream. Steve Hirsch from the Office of General Council and I have carefully reviewed the material which you have submitted as well as the Background Listing Document (BLD) and the Federal Register notice for the listing concerning wastes from the usage of organic solvents. Based on our review, we conclude that the wastes that contain the unreacted materials are not listed spent solvents.

We agree with Mobay's assertion that the original solvent listing was not intended to include chemicals which are commonly used as solvents when they are used as reactants. As the bases for our decision, we cite the following excerpts and quotations from the BLD and the Federal Register notice:

- The footnote on page 33 of the BLD states, "Large amounts of chemicals listed in Table II-1 are used in such non-solvent applications as chemical feedstock..." Thus, usage as a feedstock was considered to be a non-solvent use.

- Pages 40 and 41 of the BLD define solvent application in the production of pesticides to include "... usage as a reaction (synthesis) medium, and usage in equipment cleaning." The term "reaction medium" does not mean reactant or feedstock; rather, it refers to a substance that is capable of dissolving another substance (i.e., solute) to form a uniformly dispersed mixture or solution thereby enhancing the ability of the solute to undergo a chemical reaction with other soluble substances.

- The language in 40 FR 56584 (November 17, 1981) clearly states that substances commonly used as solvents, "... may also be used in a manufacturing process as chemical reactants or process intermediates and, when so used, are not considered to be spent solvents."

It should be noted that although we do not consider the subject waste streams to be listed hazardous wastes, these streams may exhibit hazardous characteristics (e.g., ignitability). If such is the case, these wastes should be handled under the waste management standards contained in 40 CFR Parts 262-266, Part 124, and the permitting requirements of Parts 270 and 271. If you have any questions regarding our decision on this matter, you may contact me at (202) 382-4761.

Sincerely,

Matthew A. Straus
Chief, Waste Identification Branch

JUN 3 1985

MEMORANDUM

SUBJECT: Request for Guidance on Part B Applications

FROM: John Skinner, Director
Office of Solid Waste (WH-562)

TO: James H. Scarbrough, Chief
Residuals Management Branch
EPA Region IV

This memorandum responds to your inquiry of April 29, 1985, requesting concurrence on the status of toluene-laden filter residue generated from the ink production process at Union Camp Corporation. Your memorandum states that both EPA Region IV and Georgia EPD consider the waste to be a spent solvent--EPA Hazardous Waste No. F005. We disagree with this determination.

In general, chemicals which are used as solvents are not consumed, nor are they physically or chemically altered during the process. When used in this manner, that is, for their "solvent" properties, wastes generated are considered spent solvents when they consist of solvents (and other materials) which no longer meet the specifications for which they were originally used and are intended for discard or further processing.

The filtering unit at Union Camp is an integral part of the production process, since its primary function is removal of unreacted chemicals, excess reactants and other impurities from the product. The filtration cake generated at this unit, however, is not a spent solvent. The waste stream apparently only includes the solvent as a contaminant. As noted in Union Camp's letter to John D. Taylor of the Georgia Environmental Protection Division, "the filter cake waste stream consists primarily of filter aid, unreacted metal oxides, and resinate product." The listing background document notes,

> the wastes encompassed by this listing do not include waste streams where solvent is a contaminant, such that the waste stream is not spent solvent, as defined above. Thus, wastes which contain as constituents solvents which are used in the industrial process are not included within the scope of this

WH-562B/JSales/vc/rm SE-248/5-13-85/Disk JS10:09
Control No. OSW-079

> listing. Nor are these waste streams hazardous by virtue of the mixing rule (Sec. 261.3(a)(2)(ii)), since a spent solvent is not being mixed with another solid waste (Listing Background Document, p. 81).

Accordingly, the filter cake is not an F005 waste, but remains only an ignitable (D001) waste.

Since the residue is treated on-site (partially in a Funda Unit and partially by evaporation), to decrease solvents content, the facility must obtain a treatment permit, and either obtain a storage permit before treatment or comply with 40 CFR §262.34.

If you have questions or require additional information, please call Jacqueline Sales, of my staff, at (FTS) 382-4770.

F-10,021/ACORSON/margaret/rm 5248/382-4770/6-19-85

JUN 19 1985

Mr. J.W. Bloemer
Eaton Corporation
Manufacturing Services Center
32500 Chardon Road
Willoughby Hills, Ohio 44094

Dear Mr. Bloemer:

This is in reply to your letter of June 3, 1985, in which you solicited our opinion as to the status of spent ion exchange resin resulting from metal removal from electroplating rinse waters (EPA Hazardous Waste F006). As you surmised in your question, our answer is in the affirmative — the spent ion exchange resin is considered to be F006 and must be managed in accordance with hazardous waste regulations.

Should you need additional information or, in particular, if you wish information relative to excluding your waste from regulatory control ("delisting"), I suggest you call Myles Morse, 202/382-4782.

Very truly yours,

Alan S. Corson,
Branch Chief
Studies and Methods Branch (WH-562B)

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

MAY 85

Solid Waste Determination

4. A warehouse stores product acrylonitrile. An accidental fire destroys the warehouse and produces an ash from the burned acrylonitrile. The acrylonitrile was not a hazardous waste prior to the fire. Is the ash viewed as solid waste generated from the disposal of a hazardous waste per §261.3(c)(2)(i) and therefore a listed hazardous waste per §261.3(c)(2)(i)?

   The ash from an acrylonitrile warehouse fire is regulated as U009 hazardous waste. Burned product is viewed as discarded. Thus, the acrylonitrile is a solid waste per §261.2(b)(1) and §261.2(b) (50 FR 614, January 4, 1985). Ash from the acrylonitrile is a listed hazardous waste per §261.3(c)(2)(i).

   Source: Steve Silverman (202) 382-7706
   Matt Straus (202) 475-8551

9444.12-(85)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 3 1985

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Ken Chiu
Solid Waste Branch (HS-13)
US EPA
230 S. Dearborn St.
Chicago, IL 60616

Dear Mr. Chiu:

I am writing this letter in response to the question you posed in our telephone conversation on August 30, 1985. According to the manufacturing process description that you provided, the surface impoundment at the Rockwell International, Newark, Ohio facility is considered a hazardous waste impoundment, listed as EPA Hazardous Waste No. F006.

It is my understanding that Rockwell International manufactures automotive gears. These gears are placed in an iron/manganese/phosphate tank to provide lubrication. The gears are then dipped in a rinse tank, and this contaminated rinse water enters the impoundment. The F006 listing applies to wastewater treatment sludges from electroplating operations. Any sludge that precipitates out of Rockwell International's wastewater is classified as hazardous.

Rockwell International's lubrication coating process is considered electroplating, as defined in the listing background document. A number of production processes, including coating, are considered subcategories of the electroplating industry. Electroplating is defined as the application of a surface coating, usually, but not always, by electrodeposition to provide corrosion protection, erosion resistance, anti-frictional characteristics or decoration. In particular, phosphate conversion coating produces a layer of insoluble crystalline phosphate on the surface of a metal that provides a base for lubricants.[1]

Consequently, Rockwell International's iron/manganese/phosphate lubricating process is considered electroplating, and sludge that results from treatment of the wastewater is considered hazardous

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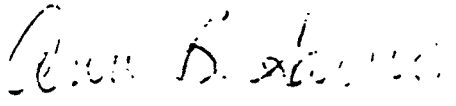
1/ US EPA. Development document for existing source pretreatment standards for electroplating point source category. EPA No.440/1-79/003. August, 1979.

and listed as EPA Hazardous Waste No. F006. If Rockwell International feels that their sludge is non-hazardous, then please advise them to call this office and discuss submitting a delisting petition.

I hope that this letter helps to clarify the issue. If you have any additional questions, please do not hesitate to call me at (202) 382-4519.

Sincerely,



Ann Burke Sarno
Environmental Protection Specialist
Waste Identification Branch (WH-562B)

September 10, 1985

Mr. Dave Johnson
Production Manager
Pueblo Chemical and Supply Company
Garden City, Kansas 67846

Dear Mr. Johnson:

We have reviewed your letter of July 22, 1985, notifying the Environmental Protection Agency (EPA) of your intent to dispose of over 20,000 gallons of rinsates generated as a result of cleaning containers that contained 2,4,5-T and other pesticide formulations by deep well injection. These waste rinsates are listed as acute hazardous wastes under EPA regulations (see enclosed Federal Register notice) and subject to all regulatory provisions of the Resource Conservation and Recovery Act. Thus, the waste rinsates can be disposed only at a deep well facility which is permitted to handle dioxin-containing wastes. If the facility at which you intend to dispose the waste rinsates is permitted to handle such wastes, you may proceed with the disposal plan. However, if the facility is not permitted you can either seek a facility that is permitted to handle these wastes or petition the Agency to exclude your wastes from the hazardous waste list.

While wastes described in the regulations generally are hazardous, a specific waste meeting the listing description from an individual facility may not be. For this reason, 40 CFR 260.20 and 260.22 provide generators the opportunity to petition the Administrator to exclude a waste on a site-specific basis from the hazardous waste list.

To be excluded, petitioners must show that a waste generated at their facility does not meet any of the criteria under which the waste was listed. (See 40 CFR 260.22(c).) In addition, the Agency is required to consider factors (including other constituents) other than those for which the waste was listed if there is a reasonable basis to believe that such additional factors could cause the waste to be hazardous. Accordingly, a petitioner must demonstrate that his waste does not exhibit any of the hazardous waste characteristics and present sufficient information for the Agency to determine whether the waste contains any other toxicants at hazardous levels.

This has been retyped from the original document.

If you wish to delist the subject waste rinsates from the hazardous waste list, you can petition EPA to exclude the rinsates from the listing under CFR Part 261. The petition must include sufficient information for the Agency to determine whether the waste meets the criteria for which it was listed as well as information to determine if any other hazardous constituents are present in the waste rinsates at levels of regulatory concern. The analysis data included in your letter to EPA can, in part, be used to support a delisting determination should you decide to petition the Agency for an exclusion to the listing.

If you have any questions or need further information on the delisting procedures, please contact Dr. Howard Fribush, Office of Solid Waste, or (202) 475-6726.

Sincerely,

Jack W. McGraw
Deputy Assistant Administrator

Enclosure

This has been retyped from the original document.

9444.1985(15)

June 24, 1985

Mr. Martin H. Lewis
Smith & Schnacke
Suite 2250
41 S. High Street
Columbus, Ohio 43215-6199

Dear Mr. Lewis:

This letter responds to your inquiry of June 14, 1985, regarding the regulatory status of a solvent mixture (Nalcast 6015, water and wax) and residue from a water-wall paint spray booth in which solvent-based paints are sprayed.

First, you are incorrect in stating that Nalcast 6015 (used in the removal of wax) is considered a process waste when intended to be discarded. Since Nalcast 6015 is used as a "solvent" (i.e., to clean wax from metal parts) it is considered "spent solvent" when it has served its intended purpose and can no longer be used without further processing. However, you are correct in stating that under the current hazardous waste regulations, spent solvent mixtures are not regulated, unless they exhibit one or more of the characteristics of hazardous waste (i.e., ignitability, EP toxicity, reactivity, and corrosivity).

At this time, the spent solvent listings pertain only to the technical grade or the pure form of the solvent, thus, solvent mixtures remain unregulated. On April 30, 1985, the Agency proposed to close this regulatory loophole by expanding the universe of wastes considered "spent solvents" to include solvent mixtures containing ten percent or more of one or more listed solvents (see enclosed Federal Register notice). When this rule becomes final, Nalcast 6015, when spent or discarded, will be considered a listed hazardous waste. In addition the Nalcast 6015/water/wax mixture also will be considered hazardous waste based on the provision in the "mixture rule" (40 CFR 261.3(a)(2)(iii) which states that a mixture of solid waste and hazardous waste is considered "hazardous waste."

With respect to the water-wall spray booth residue, these wastes are not hazardous waste unless they exhibit one or more of the characteristics of hazardous waste. As you correctly stated, solvent-based paints are not listed hazardous waste when discarded nor are they covered under the spent solvent listings. The listings do not apply to waste streams where solvents are a contaminant.

This has been retyped from the original document.

I trust that this letter adequately responds to the questions raised in your letter. Should you have additional questions, please call Jacqueline Sales, of my staff, at (202) 382-4807.

Sincerely,

Eileen Claussen
Director
Characterization and
Assessment Branch

Enclosure

This has been retyped from the original document.

RCRA/SUPERFUND/OUST HOTLINE MONTHLY REPORT QUESTION
JULY 1985

The Solvent Mixture Rule

4. EPA published a proposed rule on April 30, 1985, (50 FR 18378) which would regulate certain spent solvent mixtures. The proposed rule amends §261.31 so that spent solvent listings having EPA hazardous waste numbers F001 through F005 would be combined under the F001 listing. More importantly, the proposed rule would regulate certain spent solvent mixtures that are not currently regulated due to the "sole active ingredient" interpretation. * The proposed hazardous waste description for F001 includes "spent solvents and spent solvent mixtures/blends containing, in total, ten percent (or more) by volume" of the listed spent solvents. How will EPA interpret "ten percent (or more) by volume?" For example: (a) Does a solvent blend containing trichloroethylene and methylene chloride (both listed spent solvents under F001), each present at five percent by volume, meet the listing description? (b) Does one of the spent solvents listed under F001 have to be present at ten percent by volume?

   EPA interprets the phrase "ten percent (or more) by volume" to mean the total percentage by volume calculated by summing the percentages of all F001 listed spent solvents included in a mixture/blend. "Ten percent (or more) by volume" does not mean that a particular spent solvent under the F001 listing must be present in the mixture at ten percent by volume.

   (a) A solvent mixture/blend containing two F001 listed spent solvents at five percent by volume each would be considered a F001 listed hazardous waste.

   (b) In order for a mixture to meet the spent solvent listing, a single solvent need not be present at a concentration of ten percent. Rather, the ten percent threshold refers to the total of all listed solvents in the mixture.

*Currently the F001-F005 listings only apply to the spent form of the listed solvents where only one solvent (i.e., sole active ingredient) solvent was used in a process. The F001-F005 listings do not apply to the spent form of solvent blends or mixtures with more than one active ingredient (i.e., two or more solvents listed in §261.31).

9444.1985(16)

September 26, 1985

Mr. Robert E. Broyles
Purina Mills, Inc.
Checkerboard Square
St. Louis, MO 63164

Dear Mr. Broyles:

This is in response to your letter of September 6, 1985, and pursuant to your conversation with Dr. Judy Bellin. In particular, you requested that EPA clarify whether persons who solely blended commercially available materials are exempt from the dioxin regulations; whether the rinsate from the equipment so used is EPA hazardous waste; and whether EPA can provide for an expedited delisting petition.

Concerning the first point, the dioxin regulations promulgated on January 14, 1985 provide that the past manufacturing operation described in your letter and discussed with Dr. Bellin (i.e., the formulation of chemicals derived from 2,4,5-trichlorophenol) presently results in the generation of EPA Hazardous Waste No. F023. This applies to the waste resulting from the company's mixing and formulating tanks.

Two courses of action are available to change this determination. The company can replace the mixing tanks, or it can submit a delisting petition showing that the waste in question does not contain chlorinated dioxins or -dibenzofurans or other toxicants at levels of concern. Waste generated after substitution of "new" equipment, or after delisting of the waste, would no longer be considered EPA hazardous waste.

With respect to the evaluation of a delisting petition, we cannot guarantee that the petition will be processed expeditiously. The Agency already has approximately 300 petitions that are currently being reviewed and acted upon; your petition would have to be considered in an appropriate order.

I trust the above adequately responds to your concerns. If you have further questions, please call Judy Bellin at (202) 382-4789.

Sincerely,

Matt Strauss, Chief
Waste Identification Branch

This has been retyped from the original document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 3 1985

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Virginia Smith
House of Representatives
Washington, D.C. 20515

Dear Ms. Smith:

I have reviewed EPA's classification of spent pickle liquor as a hazardous waste as you requested in your September 12, 1985, letter to the Administrator. However, the Agency has taken the position that spent pickle liquor from any source, including hot dip galvanizing, is a listed hazardous waste (it is listed in the regulations as K062). This interpretation is consistent with the letter from Jack McGraw (then Acting Assistant Administrator for Solid Waste and Emergency Response) to Mr. Satterfield on April 10, 1985. In that letter, Mr. McGraw stated that hot dip galvanizing is excluded from the electroplating category; however, no such statement was made with respect to the pickle liquor waste.

I should point out, however, that a number of companies, especially those in the porcelain enamel industry, have taken exception to this view. In fact, a law suit was filed by the Porcelain Enamel Institute (PEI) disputing the Agency's application of the K062 listing beyond the Iron and Steel Industry. As a result of this suit and a rulemaking petition filed by several members of PEI, the Agency recently requested comments on the Agency's application of the K062 listing. This request for comment appeared in the Federal Register on September 10, 1985. I have included a copy of this notice for your convenience.

In the notice, you will find a discussion of the issues and background information on the Agency's position. Since the comment period is now open, Mr. Soderquist may make any comments he believes appropriate about the K062 listing. I can assure you that all comments will be evaluated as part of the Agency's rulemaking procedure.

The delisting mechanism is also an alternative; it need not take three to four years. The time it takes for processing a delisting is directly dependent upon our receiving a complete delisting petition from the company filing the petition. We

recently published a guidance document (EPA/530-SW-85-003) to help petitioners file complete petitions. This document is available from the National Technical Information Service.

I realize that compliance with EPA's regulations may be costly, however, we believe that the costs are justified in order to protect our ground-water resources.

I thank you for your concern in this matter. If Mr. Soderquist or you would like any additional information, please contact Mr. James Poppiti at (202) 382-4788.

Sincerely yours,

J. Winston Porter
Assistant Administrator

Enclosure

9444.1986(02)

January 27, 1986

Mr. Abe Esral
Plant-Roberts Chemicals
1644 Tullie Circle, Suite 118
Atlanta, Georgia 30329

Dear Mr. Esral:

This letter is written in response to your December 16 letter to J. Winston Porter, regarding the Office of Solid Waste's definition of primary and secondary production of steel in electric arc furnaces. As you are aware, the electric arc furnace is the most versatile of all steelmaking processes because it can be operated as either an acid or basic, oxidizing or reducing process and, thus, can accommodate any combination of raw materials including ore, steel scrap, and pig iron (plus fluxes such as limestone and fluorspar). In general, nearly all steelmakers using the electric arc furnace use a combination of all of these raw materials. Therefore, the Agency does not have a definition for primary and secondary production of steel in electric arc furnaces and does not differentiate between the wastes generated when a specific combination of raw materials are used.

The Agency's use of the term, "primary steel production" is meant to distinguish between manufacturers who produce steel using the electric arc furnace and foundary operators who use the electric arc furnace to melt steel scrap for castings. The Agency made this distinction clear when it published its response to a comment received on the interim final rule for the K061 listing (see 45 FR 33124, May 19, 1989) in which a clarification on the scope of the listings was requested. The interim final rule read, "Emission control dust/sludges from the electric furnace production of steel." The commenter indicated that it was not clear whether the listing description applied only to primary steel production or to both primary steel production and to foundries using steel scrap in their electric furnace production.

The Agency's response was that the listing was intended only to include wastes from primary steel production and that this intent is reflected in the listing background document, which refers throughout to primary steel production. Also, the Agency stated that it was uncertain whether foundry electric furnace emission control dusts and sludges are sufficiently similar in composition to warrant inclusion in the same listing.

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In summary, all dusts and sludges from the production of steel in electric arc furnaces are listed hazardous wastes unless generated from foundry operations. In addition, dusts and sludges from foundry operations may be hazardous wastes if they exhibit any of the characteristics of hazardous wastes as described in 40 CFR 261, Subpart C.

Please feel free to give Matt Strauss, of my staff, a call if we can be of any further assistance, his telephone number is (202) 475-8551.

Sincerely yours,

Original signed by
Marcia E. Williams

Marcia Williams, Director
Office of Solid Waste

This has been retyped from the original document.

February 12, 1986

Mr. Kevin J. Igli
Chemical Waste Management, Inc.
3003 Butterfield Road
Oak Brook, Illinois 60521

Dear Mr. Igli:

Thank you for your letter of January 2, 1986, regarding the disposal status of containers formerly containing pentachlorophenol (PCP). In your letter, you request that I explain how the January 14, 1985 dioxin rules deal with the management of these wastes.

As you stated in your letter, an emptied, unrinsed container which formerly contained an unused formulation of PCP is EPA Hazardous Waste No. F027. Under the rules promulgated on January 14, 1985, these containers must be disposed either at a fully permitted facility having a waste management plan for this ("dioxin") waste; at a permitted incinerator that has demonstrated 99.9999% destruction and removal efficiency (6-9s DRF) for the chlorinated dioxins (CDDs) and -dibenzofurans (CDFs) or for the principal organic hazardous constituents (POHCs) that are more difficult to destroy than the CDDs/CDFs; or at an interim status facility which has received certification from the Assistant Administrator for Solid Waste and Emergency Response as satisfying the performance standards in Subpart O of Part 264. These containers may also be stored at an interim status facility in compliance in the tank or container standards.

At present, the residues of such incineration are considered to be an EPA acute hazardous waste. However, on September 12, 1985, the Agency proposed a regulation that would change their status to hazardous wastes (rather than acute hazardous wastes), which could then be managed at interim status land disposal facilities (see enclosure).

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At this point in time, I am not aware of any potential rule change which could allow these wastes to be managed any differently than described above. Please feel free to call Dr. Judith Bellin, if we can be of any further assistance; her telephone number is (202) 475-8551.

Sincerely,

Matthew A. Straus
Chief
Waste Identification Branch

Enclosure

This has been retyped from the original document.

MAR 3 1986

William M. Warren
Eder Associates
85 Forest Avenue
Locust Valley, N.Y. 11560

Re: File 509-1

Dear Mr. Warren:

This is in answer to your letter of February 13, 1986. You requested clarification concerning the regulatory status of spent carbon used to remove dissolved pentachlorophenol (PCP) from ground water. You also asked what type of disposal facility could properly dispose of this waste.

Your letter indicates "product spillage" as the source of the contamination. If the product spilled was unused formulations (EPA Hazardous Waste No. F027) and this is what migrated into the ground water, the spent carbon is an acute hazardous waste (F027), and, therefore, would be subject to the hazardous waste regulations promulgated for dioxin-containing wastes. It this is not the case, the waste you describe is not subject to regulation under RCRA. In any event, you should be aware that the improper management of this waste could certainly be hazardous to human health and the environment. Regeneration of the spent carbon would result in desorption and distribution of the chemicals it contained to air (in this case, pentachlorophenol and chlorinated dioxins and -dibenzofurans are of principal concern). Land disposal of the spent carbon in a situation where solubilizing solvents are co-disposed could ultimately result in once again polluting ground water. Therefore, the management of this waste should be carefully controlled.

With respect to your request regarding disposal options, incineration of this waste in a hazardous waste incinerator that is permitted to burn PCBs is probably the most prudent option. If you decide to incinerate you may wish to speak with Dr. Paul des Rosiers of our Office of Engineering Research. His telephone number is 202-382-2722.

Sincerely,

Matthew A. Straus, Chief
Waste Identification Branch

FILE COPY

1985-467-851

APR 7 1986

Dr. Tom Tseng
Conservation and Protection
Ontario Region
Environment Canada
25 St. Claire Ave. E.
Toronto, CA
M4 T1 M2

RE: CJ1305

Dear Dr. Tseng:

Current U.S. EPA regulations control environmental releases from wood preserving and surface protection facilities under several Congressional statutes, including the Resource Conservation and Recovery Act (RCRA), and the Clean Water Act (CWA). In addition, exposures of workers and consumers to the preservative formulations during application and usage of the treated wood is controlled by the Toxic Substances Control Act (TSCA). The current applicability of the authorities to environmental releases is summarized below, along with a description of our present investigations under RCRA.

Wastewater Effluents under the CWA

Process wastewaters effluent discharges from wood preserving facilities which use arsenical/chromates, creosote, and/or pentachlorophenol are regulated under the Clean Water Act (CWA). The final regulations were promulgated in 1981 (46 FR 8260-8295) and vary according to whether a facility was in existence at the time of the regulation (pretreatment standards for existing sources, PSES) or for new plants (new source performance standards, NSPS).

The release of pentachlorophenol and creosote in wood preserving wastewaters is controlled by the use of the indicator pollutant, oil and grease. The effluent standard for arsenic, chromium, and copper is based on specific concentration limits. No discharge of any wastewaters is mandated for Boulton processes and non-pressure processes.

Process wastewaters for the wood preserving subcategory of timber products is defined as all wastewater sources excepting noncontact cooling water, material storage yard runoff (either raw material or processed wood storage) and boiler blowdown (46 FR 8287 col. 2, ¶ 4). However, precipitation falling in the 1/4 to 1/2 acre around the treating cylinders and tank areas is defined as a process wastewater which must be collected and treated. Guidance may be found in the Development Document for Effluent Limitations and Guidelines and Standards for the Timber Products

Point Source Category (EPA Publication No. EPA-440/1-81/023, p. 82), which states:

> "Rainwater that falls on or in the immediate vicinity of the retorts and work tank area--an area of from about on-quarter to one-half of an acre for the average plant--becomes contaminated and can present a treatment and disposal problem at any plant, but especially at plants in areas of high rainfall. For example, a plant located in an area that recieves 152 cm (60 in) of rain annually must be equipped to process an additional 1.5 to 3.0 million liters (400,000 to 800,000 gallons) per year of contaminated water."

Current Dioxin/Furan Chlorophenolic Regulations under RCRA

Certain associated wastes from oil or water based chlorophenolic formulations used by wood preserving or surface protection facilities (either at sawmills or at wood treaters before air seasoning) may be subject to regulation as acutely hazardous wastes because of their contamination with polychlorinated dioxins and furans under the Resource Conservation and Recovery Act (RCRA). The hazardous waste listings which may apply are found in Part 261.31, Volume 40 of the Code of Federal Regulations as Hazardous Waste Nos. F020, F021, F026 or F027.

If a facility mixes chlorophenolic formulations on-site, then it may be covered by either the F020 (tri- or tetrachlorophenol) or F021 (pentachlorophenol) listing if wastes are generated during the process. An example would be filtering the unused formulation before storage, thus generating a filter residual.

If a facility discards an unused (not spent) formulation containing chlorophenolics the associated wastes and formulation itself are covered by Hazardous Waste No. F027.

If a waste is generated from the use of equipment (tanks, etc.) that previously was used to mix chlorophenolic formulations, then these wastes would be covered by Hazardous Waste No. F026. An example would be mixing t-butyl tin oxide in the same tank that was used for chlorophenolics previously, and generating a filter waste when the TBO formulation was transfered to the process or storage tank.

A container or an inner liner removed from a container that that has held an acute hazardous waste such as F020, F021, or F027 must be either "triple rinsed" with an appropriate solvent or cleaned by another established scientific method or the inner liner must be removed and discarded (as a hazardous waste). Otherwise, this container itself is considered to be the hazardous waste itself, either F020 or F021. This regulation may be found in the Code of Federal Regulations, Vol. 40, Part 261.7(a)(3). Examples would be a storage tank taken out of service that previously

contained unused formulation, a formulation mixing tank, or empty chlorophenolic drums or kraft bags.

When a waste is listed as "Acutely Hazardous" under Part 261.31 (Hazard Code "(H)"), then special management standards apply under RCRA over those normally imposed for other hazardous wastes. For example, under Part 261.5(a), generators of less than 1000 kilograms of hazardous waste a month would normally be exempt from the management standards contained in Parts 262-265 and Parts 270 and 124 (surface impoundment specifications, ground water monitoring, hazardous waste manifesting, etc.). Part 261.5(e) instead states that the generation of 1 kilogram of acutely waste generated a month or a total of 100 kilograms of contaminated soils subjects the generator to the full management standards of Parts 262-265, 270, and 124.

(As described below, we are currently investigating the addition of other wood preserving wastes to the acutely hazardous waste categories because of their contamination with polychlorinated dioxins and furans.)

Wastewater Treatment Sludges from Creosote and Pentachlorophenol under RCRA

At the present time, wastewater treatment sludges from wood preserving processes which use creosote and/or pentachlorophenol are regulated as Hazardous Waste No. K001 under Part 261.31. This includes oil/water separator sludges, the sludges which form at the bottom of surface impoundments used to treat or dispose of wastewater (percolation or evaporation ponds), filter media (carbon, sand, soil), spray irrigation fields (considered land treatment units), sludge dewatering/drying beds, etc.

There has been a lot of activity over the past years in "closing" unlined lagoons, ponds, etc. used for process wastewaters. The issue of "how clean is clean" for removing the sludges and contaminated subsoils (much less pumping and treating contaminated ground water) is decided on a case by case basis. The criteria to be used for closure of waste management units such as surface impoundments, land treatment units, waste piles are given in Parts 265 and 267.

If all contaminated materials cannot be removed, then post closure care as specified under Part 265.310 is required. This would include maintaining a cover for the unit, leachate collection, etc.

The RCRA management standards would not apply to wastewater treatment sludges (or wastewaters if they are listed as hazardous wastes in the future) while they are managed on-site in tanks which meet certain design requirements (Part 264.1(g)(6) and Part 265.1(c)(10)). However, as soon as the sludges are removed from these units, the full RCRA permitting requirements apply. Many facilities have therefore chosen to install wastewater treatment trains in structures that meet our tank specifications, rather than surface impoundments, to avoid ground water monitoring and other RCRA permitting requirements.

Creosote or Pentachlorophenol Wastewaters under RCRA

In 1980, we proposed to add wastewaters themselves from creosote and/or pentachlorophenol facilities to the list of hazardous wastes under Part 261.31 (45 FR 33137). In 1984, we started obtained the necessary analytical data by site sampling missions to support this proposed hazardous waste listing. We have been obtaining analyses of the wastewaters themselves as well as documenting ground and surface water contamination with polynuclear aromatic hydrocarbons (PAHs), chlorophenols, and polychlorinated dioxins/furar

Since wastewaters are typically managed in the same units that manage the currently regulated wastewater treatment sludges (Hazardous Waste No. K001), few additional controls of wastewater units under RCRA would occur. However, if wastewaters were listed, we would have the authority of controlling such waste management practices as their "treatment" by evaporation in the treating cylinder or the plant boiler.

Any RCRA authority over wastewaters would be limited to their management on-site at a facility (Part 261.4(a)(2)[Comment]). When released to the navigable waterways or sent to a publically owned treatment work (POTW), the statuatory authority becomes the Clean Water Act (CWA). This means that it is possible to have different toxic substances of concern or "action levels" for a wastewater while it is managed on-site under RCRA than after release off-site under the CWA. For example, under RCRA we may be consideri wastewater contamination with polychlorinated dioxins and furans, yet the CWA standards currently only consider the indicator pollutan oil and grease.

Inorganic Arsenical and Chromate Wastes (Wastewaters, Sludges, Contaminated Soils) under RCRA

At the current time, any wastes generated by a wood preserving facility that fails the "Extraction Procedure Toxicity Test" (EP Toxic) is a regulated waste. This test procedure (described in Appendix II of Part 261) involves extracting the waste with 20 times its weight with water, adjusted to a pH of 5 with acetic acid. The extract is analyzed, thus yeilding the "EP Toxicity" value. If the sample is an aqueous liquid, then the sample itself is analyzed, giving the "EP Toxicity".

The maximum allowable concentration for metallics in the "EP" extract is compared to the values given in Table 1 of Part 261.24. If either the total arsenic or chromium in the "EP" extract exceeds 5.0 parts per million, then the waste is classified as either EPA Hazardous No. D004 or D007, respectively.

Thus many inorganic salt wood preserving wastes are controlled by the RCRA management standards of Parts 262-265, 270, and 124. This would include contaminated soils in the treated wood drippage area, process wastewaters, sludges, spilled formulations, etc.

We are currently investigating whether or not to specifically list inorganic salt wood preserving wastes under Part 261.32. This would give the Agency the additional advantage of oversight of treatment of all the wastes generated through its delisting process under Part 260.22. Currently, for "EP Toxic" wastes, the facility has the ability to determine on its own whether or not a waste is hazardous and whether or not treatment is adequate.

Corrective Action under RCRA

As the result of the Hazardous and Solid Waste Amendments of 1984 (HSWA) (Congressional Records of Oct. 3 and 11, 1984), the authority of RCRA has been extended to other solid waste management units (SMUs) at facilities, even if these units do not not manage a waste that is listed in Part 261. This is the corrective action requirement for continuing releases at permitted facilities under Section 3004(u) and (v) of HSWA.

This requirement for permitting all solid waste management units applies only to facilities that current have hazardous waste management units subject to the permitting standards of RCRA. Since few facilities, if any, have final permits, any plants with surface impoundments managing K001 wastewater treatment sludges must also obtain a permit for the treated wood drippage/storage area, process areas, and any landfills.

If there is any contamination in these areas (release) corrective action must be undertaken. A release from a solid waste management unit is defined in terms of whether or not the unit is designed for adequate containment. For example, treated wood drippage (currently a "solid waste" but not a "listed hazardous waste") is typically managed by land disposal (drippage to the ground). This ground usually does not have a clay liner, runoff containment, etc. Therefore, disposing of this drippage on the open ground constitutes a release for the purposes of corrective action. Leakage from a tank would also be a release.

Current Efforts under RCRA to List Additional Wastes

At the present time, our branch is involved in investigating whether or not to add additional wastes from wood preserving and surface protection facilities to the list of hazardous wastes under Parts 261.31 and 261.32. New wastes which are being considered are listed below, and apply to either wood preservation or surface protection facilities and to any of the preservative formulation types, whether creosote, chlorophenolics, or arsenical-chromates:

- Storage tank, treating tank, retort, dip tank, spray booth sludges
- Treated wood drippage/storage residuals
- Fugitive emissions, drippage in the process and tank area
- Maintenance area, shop area wastes

•Wastewaters (including storm water runoff)

•Wastewater treatment sludges from arsenical-chromate processes or chlorophenolics from surface protection processes

All of these wastes, where applicable, are being studied to determine whether or not they should be listed as acutely hazardous waste because of contamination with polychlorinated dioxins and furans. This includes any wastes that can be cross contaminated with chlorophenolics, such as wastes generated from a creosote process where a common oil/water separator is used for both creosote and pentachlorophenol, sludges from an arsenical process that uses pentachlorophenol make-up water, wastes from a non-chlorophenolic dip tank that previously held chlorophenolics, etc.

As described in previous sections, all of these wastes are covered under the RCRA authority at some wood preserving facilities, especially because of the corrective action provisions under HSWA. Very little coverage under RCRA currently exists for sawmills practicing sapstain control, however. Adding new waste streams to the list of hazardous wastes would make hazardous waste management standards uniform at all facilities, and ease the burden to State and Regional enforcement personel in formulating a regulatory authority rationale.

If you have any questions, please do not hesitate to call me at (202)382-4786.

Sincerely,

Cate Jenkins, Ph.D.
Project Officer, Wood Preserving
and Surface Protection
Waste Identification Branch
Mail Code WH-562 B

May 2, 1986

Mr. Gregory J. Harvey
Industrial Hygenist
Occupational Medical Services
Newark Air Force Station, OH 43057-5000

Dear Mr. Harvey,

This letter is written in response to your request that EPA determine whether activated carbon canisters that are used to collect vapors of the solvents Freon 113, 1,1,1-trichloroethane, and methylene chloride, which are generated during the application of certain paint products, are considered to be a hazardous waste.

As you are aware, the Agency has listed these compounds as hazardous wastes when they are used as solvents and have become contaminated with physical or chemical impurities and are no longer fit for use without being regenerated, reclaimed, or otherwise re-processed. Use as a solvent is defined as being used for their solvent properties, that is, to solubilize (dissolve) or mobilize other constituents. For example, solvents used as a cleaning or degreasing agent, a medium for chemical reactions, an extraction agent, a diluent, and similar uses are covered under the F001 through F005 listings under §261.31 of RCRA. These listings, however, do not apply when the solvents are used as reactants or ingredients in commercial chemical products (e.g., paint and coatings). (See 51 FR 6538, February 25, 1986.)

Since the incorporation of solvents into paint formulations does not constitute solvent use as defined in the listing, the solvent vapors collected from paint application are not spent solvents. Unless these canisters exhibit one or more of the hazardous characteristics described under 40 CFR 261.20 - 261.24, they would not be a hazardous waste under the Resource Conservation and Recovery Act (RCRA).

This has been retyped from the original document.

Nevertheless, we believe that sufficient toxicological data exists on these solvents to indicate that the subject canisters may pose a substantial present or potential threat to human health or the environment, if improperly managed. We, therefore, urge you to manage these canisters with proper controls (i.e., as if they were hazardous under Subtitle C of RCRA).

Sincerely yours,

Matthew Straus
Branch Chief

This has been retyped from the original document.

May 2, 1986

Mr. Donald P. Duffy
Pace Laboratories, Inc.
1710 Douglas Drive North
Minneapolis, MN 55422

Dear Mr. Duffy:

This letter is in response to your request for an interpretation of the electroplating listings (EPA Hazardous Waste Nos. F006 and F019). Our responses to your specific questions are as follows:

1. "Electroplating operations" includes electroplating of common metals, electroplating of precious metals, anodizing, coatings, chemical etching and milling, electroless plating, and printed circuit board manufacturing.

2. The only phosphating processes that are not included in the F006 listing are phosphating on aluminum. These processes are included in the F019 listing.

3. The exclusion "...(3) zinc plating (segregated basis) on carbon steel..." refers to non-cyanide zinc plating processes. That is, zinc plating processes which use cyanide are not excluded from the F006 listing.

4. The zinc plating exclusion does not encompass any wastes from chemical conversion coating processes (e.g., chromating). Thus, when chromating processes contribute to the wastewater stream, the resultant wastewater treatment sludges are included in the F006 listing.

5. The F006 and F019 listings are currently being re-evaluated. At present, the primary focus of this effort is on phosphating processes; several trade associations are now gathering data to support our re-evaluation.

This has been retyped from the original document.

Should you have any questions regarding this interpretation, please contact either Mr. Matthew Straus or Mr. David Topping of my staff at (202) 475-8551.

Sincerely yours,

Eileen Claussen
Director
Characterization and
Assessment Division (WH-562B)

This has been retyped from the original document.

May 22, 1986

Mr. Paul Yancey
Facility Engineer
Whirlpool Corporation
6400 Jenny Lind Road
Fort Smith, AR 72903

Dear Mr. Yancey:

The purpose of this letter is to respond to your question regarding the classification of sludge generated from treatment of cleaner solutions at your Fort Smith, Arkansas facility. It is my understanding that the first stages of your phosphating process are the cleaner stages. Treatment of the wastewater from the cleaning baths involves pH adjustment, flocculant addition, and filtration. The sludge that results from this treatment is not considered listed hazardous waste as long as wastewater generated from the listed process is kept entirely separate (the listed process occurs further down the line). The cleaning process is not a listed process, so this wastewater treatment sludge is not listed. This sludge may still be hazardous by characteristic, however, and you will need to test for that. If you have any further questions, please do not hesitate to call me at (202) 382-4519.

Sincerely,

Ann Burke Sarno
Environmental Protection
Specialist
Waste Identification Branch
(WH-562B)

This has been retyped from the original document.

9444.1986(13)

Mr. Reggie W. Carden
Chemical Safety Manager
Lisle Corporation
807 East Main Street
Clarinda, Iowa 51632

June 24, 1986

Dear Mr. Carden,

The purpose of this letter is to confirm our telephone conversation held on June 23, 1986 which dealt with the question of whether the Lisle Corporation's manufacturing process should really be considered an electroplating operation. Based on the information the Agency requested and received from Lisle Corporation on June 23, 1986, the mechanical plating system is not an electroplating operation as listed under 40 CFR 261.31.

On May 19, 1980, the Agency promulgated as an interim final rule the listing of "wastewater treatment sludges from electroplating operations" in 40 CFR 261.31 as EPA Hazardous Waste No. F006. As indicated in Appendix VII of Part 261 (45 FR 74892), the constituents of concern for this waste are cadmium, hexavalent chromium, nickel, and complexed cyanide. (This waste listing was finalized on January 16, 1981 (46 FR 4619) with some modification).

The mechanical plating operation utilized by Lisle Corporation involves the deposition of metallic coating on a base metal through mechanical action (i.e., impact of glass beads on the object to be coated in the presence of the coating metal) and is not considered an electrolytic process. We feel, therefore, that mechanical plating would not be considered an electroplating operation as defined in the background document and that wastewater treatment sludge previously generated from mechanical plating operations would not be considered a listed hazardous waste under 40 CFR 261.31 and thus, would not require delisting.

This, however, does not mean that the wastes already generated from this operation are non-hazardous. Each generator is ultimately responsible for determining whether his waste exhibits any of the characteristics of a hazardous waste (i.e., ignitability, corrosivity, reactivity and EP toxicity) as described in 40 CFR 261, Subpart C. If the waste exhibits a hazardous waste characteristic, the waste must be managed in accordance with the hazardous waste management regulations.

This has been retyped from the original document.

9444.1986(13)

Mr. Reggie W. Carden
Chemical Safety Manager
Lisle Corporation
807 East Main Street
Clarinda, Iowa 51632

June 24, 1986

Dear Mr. Carden,

The purpose of this letter is to confirm our telephone conversation held on June 23, 1986 which dealt with the question of whether the Lisle Corporation's manufacturing process should really be considered an electroplating operation. Based on the information the Agency requested and received from Lisle Corporation on June 23, 1986, the mechanical plating system is not an electroplating operation as listed under 40 CFR 261.31.

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The mechanical plating operation utilized by Lisle Corporation involves the deposition of metallic coating on a base metal through mechanical action (i.e., impact of glass beads on the object to be coated in the presence of the coating metal) and is not considered an electrolytic process. We feel, therefore, that mechanical plating would not be considered an electroplating operation as defined in the background document and that wastewater treatment sludge previously generated from mechanical plating operations would not be considered a listed hazardous waste under 40 CFR 261.31 and thus, would not require delisting.

This, however, does not mean that the wastes already generated from this operation are non-hazardous. Each generator is ultimately responsible for determining whether his waste exhibits any of the characteristics of a hazardous waste (i.e., ignitability, corrosivity, reactivity and EP toxicity) as described in 40 CFR 261, Subpart C. If the waste exhibits a hazardous waste characteristic, the waste must be managed in accordance with the hazardous waste management regulations.

This has been retyped from the original document.

Please feel free to contact me if you have any further questions, at (202) 382-4488.

Sincerely,

James R. Kent
Environmental Protection
Specialist

This has been retyped from the original document.

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

JUNE 86

2. Spent Solvent Listings (§261.31)

A manufacturing facility uses a liquid-liquid extractor in its production process. An influent water stream bearing the product to be recovered contacts an influent stream of pure halogenated solvent flowing countercurrent. The solvent stream preferentially absorbs the product from the water. The solvent bearing product stream exits the extractor. Because the solvent is not completely immiscible with water, the production process yields an effluent stream consisting of water and solvent at the other end of the liquid-liquid extractor.

If the solvent used in the extraction process is a RCRA listed hazardous waste when spent, would the water/solvent effluent stream be RCRA regulated?

No; although extraction constitutes solvent use, the effluent stream is not a spent solvent covered by the spent solvent listings in §261.31 as revised on December 31, 1985 (50 FR 53315). The effluent waste water stream became contaminated with solvent during the actual production process (i.e., during use of the virgin solvent) resulting from the incomplete miscibility of water and solvent in the extraction process. It did not become contaminated as a result of spent solvent being discharged into it. It, therefore, would not be regulated as a RCRA hazardous waste, unless such waste stream were listed as a manufacturing waste in §261.32 or exhibited a characteristic in Subpart C of Part 261.

Source: Matt Straus (202) 475-8551
Research: Dave Phillips

Mr. J. W McAdams
Manager, Environmental Services
Mobil Chemical Company
P.O. Box 26683
Richmond, VA 23261

AUG 4 1986

Dear Mr. McAdams:

I am writing in response to your request for a written determination of whether the "pre-coat" waste that you generate as part of the process is a listed hazardous waste. I have reviewed the information that you have submitted in your June 10, 1986, letter and conclude that the use of 2-ethoxyethanol in your polypropylene extruding process does not constitute use as a solvent.

As you have stated in your letter, the spent solvents listings do not cover manufacturing process wastes that are contaminated with solvents when they are used as reactants or ingredients in the formulation of commercial chemical products. This is because the chemicals are not being used as solvents. I am satisfied that you have provided sufficient evidence that 2-ethoxyethanol is an ingredient of the pre-coat formulation. Thus, this pre-coat waste containing 2-ethoxyethanol is not a listed waste.

Although the subject waste is not a listed waste, 2-ethoxyethanol is known to be teratogenic in animals by oral, inhalation, and dermal routes, and causes adverse reproductive effects in animals. The concentration of 2-ethoxyethanol in your waste (1 to 5%) is many times greater than the health-based values for 2-ethoxyethanol. Furthermore, the Agency has listed still bottoms from the recovery of spent 2-ethoxyethanol because it contains similar levels of the subject solvent (1 to 10%). Thus, this pre-coat waste may pose a substantial threat to human health and the environment, if improperly disposed and we suggest that you manage it accordingly.

Sincerely,

Matthew A. Straus
Chief
[illegible]RENCES

*U.S. GPO . 1985-467-853

Mr. Randy L. Porter
Industrial Hygienist
University of Kansas Medical Center
Safety Office
39th and Rainbow Blvd.
Kansas City, Kansas 66103

AUG 18 1986

Dear Mr. Porter:

This is in response to your July 8, 1986, letter in which you request written clarification as to whether your laboratory waste, generated by an investigator performing research using stock solutions of 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD), is covered by the dioxin listings (EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027). These wastes include animal carcasses, bedding, feces, urine and other "typical" laboratory dry waste such as paper goods, gloves, syringes, etc.

The wastes which you described are not the listed dioxin-containing wastes under 40 CFR §261.31. These wastes would more appropriately be defined at 40 CFR §241.101(h) as infectious waste, "...laboratory wastes, such as pathological specimens (e.g., all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto.....". To date, EPA has not promulgated criteria for identifying waste as infectious under §261 Subpart C. The Agency has, however, developed a manual to provide guidance on the management of infectious waste. A copy is enclosed for your reference.

I hope this adequately answers your questions. If you have any further questions, please contact Doreen Sterling of my staff.

Sincerely yours,

Matthew A. Straus
Chief
Waste Characterization Branch

Enclosure

U.S. GPO 1985-467-853

SEP 4 1986

Mr. John L. Cherill
Environmental Control
Corning Glass Works
Corning, New York 14831

Dear Mr. Cherill:

This is in response to your letter of May 15, 1986, regarding the regulatory status of the reject substrates containing vanadium pentoxide (as described in your May 15th letter) under the existing Federal hazardous waste regulations. First, I would like to apologize for taking so long in responding to your request; I hope this delay has not caused you any problems. With regard to your specific request, the vanadium pentoxide substrate is not a listed hazardous waste; therefore, this material (when abandoned) would only be subject to the hazardous waste regulations if it exhibits one or more of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity). In response to your specific questions:

1. Would our reject substrates (prior to crushing) be a hazardous waste, P010, because the vanadium pentoxide component would be considered a "sole active ingredient"?

   No. The reject substrates are not considered the listed hazardous waste P010. P010, listed in 40 CFR 261.33(e), covers unused vanadium pentoxide (either pure grade, technical grade, or in formulations where it is the sole active ingredient) which is discarded. Since the reject substrates are not considered the commercial chemical product vanadium pentoxide, this material is not considered hazardous waste P010.

2. Would crushing the reject substrates (as we normally do) make them a "process waste" which, since such process waste is not a listed waste under 261.31 or 261.32 and would not exhibit any of the characteristics of a hazardous waste given at 261.20, 261.21, 261.22, 261.23 and 261.24, is not a hazardous waste; or, would such crushing merely be considered a "treatment" of a hazardous waste subject to a RCRA Part B Permit?

OFFICIAL FILE COPY

U.S. GPO : 1985-467-853

Crushing of the reject substrates would not be considered a process waste since this activity is not part of the manufacturing operation (i.e., operation to manufacture the vanadium pentoxide substrate). Rather, the crushing operation is a treatment process to reduce the waste volume of the off-spec substrates. However, since the reject substrates are not hazardous wastes (i.e., are not specifically listed nor exhibit any of the hazardous waste characteristics (as you indicate), the crushing operation is not subject to the hazardous waste rules.

3. Would the ultimate end user of this new product, e.g., a power plant, have to dispose of the spent product as a hazardous waste solely because it contained vanadium pentoxide? (Obviously, if the product as a result of its use captured arsenic or lead, for example, from the exhaust stream and it then exhibits the characteristic of EP Toxicity it would have to be disposed of as a characteristic hazardous waste.)

   No. As already indicated, the vanadium pentoxide substrate is not a listed hazardous waste. Therefore, this material is not subject to the hazardous waste rules, unless this material exhibits one or more of the hazardous waste characteristics.

Please feel free to give me a call if you have any further questions; my telephone number is (202) 475-8551.

Sincerely,

Matthew A. Straus
Chief
Waste Characterization Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 25 1986

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Repromulgation of F006 Hazardous Waste Category

FROM: J. Winston Porter
Assistant Administrator for Solid Waste and
Emergency Response

TO Valdas V. Adamkus
Regional Administrator

Thank you for your August 18, 1986 memorandum regarding the repromulgation of the F006 hazardous waste category.

After a briefing with the staff from the Office of Solid Waste, Office of General Counsel, and the Office of Waste Programs Enforcement (OWPE), I decided to re-interpret the F006 listing to only include those processes that can be implicated, either directly or indirectly, in the language of the listing. During this briefing, I was presented with five options which are described in the attached material. I selected option three because it provides a sound legal argument and is cost effective--it saves resources. Realizing that option three may create problems with existing enforcement actions involving F006 wastes, I have requested OWPE to develop guidance which you should find helpful. In addition, we expect to re-visit the scope of the F006 listing as part of our relisting effort.

The details of the decision are as follows: the F006 listing would include wastewater treatment sludges from the following processes: (1) common and precious metals electroplating, (2) anodizing (3) chemical etching and milling and (4) cleaning and shipping associated with common and precious metal electroplating. The following processes are not included under the F006 listing: (1) chemical conversion coating, (2) electroless plating, (3) printed circuit board manufacturing and (4) the six processes explicitly excluded from F006. Let me elaborate two fine points regarding the processes that are not listed. First, wastewater treatment sludges from the chemical conversion coating of aluminum are listed as EPA hazardous waste No. F019. Second, wastewater treatment sludges from printed circuit board manufacturing operations that include processes which are within the scope of the listing (i.e. chemical etching) are listed as EPA hazardous waste No. F006.

We have drafted a Federal Register notice which presents our re-interpretation of the F006 listing. This notice has been forwarded to the Regions for comment. In addition, a meeting was held with the Regions in Atlanta on September 16, 1986 to discuss our approach.

I hope this memorandum and the attached briefing material explains how I made my decision and how I plan to proceed. If I can be of further assistance, please let me know.

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Mr. William L. Warren
Warren, Goldberg, Berman, and Lubitz
112 Nassau Street
P.O. Box 645
Princeton, New Jersey 08542

SEP 29 1986

Dear Mr. Warren:

This is in response to your letter of August 26, 1986, in which you request that EPA confirm that soil contaminated with Chlordane, as a result of application of that pesticide in the normal course of agricultural use, would not automatically be considered a hazardous waste.

The pesticide Chlordane is a listed commercial chemical product (U036; see 40 CFR 261.33(f)) that becomes a hazardous waste when discarded or intended to be discarded. The Agency did not intend to cover those cases when the chemical is released into the environment as a result of use. (See, for example, the enclosed memo regarding the regulatory status of pesticide applicator washing rinse water.) In addition, 40 CFR 261.2(c)(1)(B)(ii) specifically states that commercial chemical products listed in Section 261.33 are not solid wastes (and, thus, not hazardous wastes) if they are applied to the land and that is their ordinary manner of use. Therefore, the contaminated soil would be treated as a hazardous waste (if it is dug up) only if it exhibits one or more of the four RCRA hazardous waste characteristics defined in 40 CFR 261.21 through 261.24.

Please feel free to contact Mr. Matthew A. Straus if you have any further questions; Mr. Straus can be reached at (202) 475-8551.

Sincerely,

Eileen B. Claussen
Director
Characterization and
Assessment Division

Enclosure

9444.1986(21)

Mr. Paul M. Frank
ACR Electronics Inc.
5757 Ravenswood Road
P.O. Box 5247
Ft. Lauderdale, Florida 33310-5247

Re: Status of Delisting Petition #0297

Dear Mr. Frank:

The purpose of this letter is to inform you that the Agency has reevaluated its previous interpretation of the hazardous waste listing for F006 wastes (Wastewater treatment sludges from electroplating operations) and has determined that it is overly broad. In particular, we believe that certain of the processes identified in the Listing Background Document that are not directly or indirectly implicated in the actual listing are not covered under regulations as listed hazardous wastes. As a result, we now believe that F006 includes only common and precious metals electroplating, anodizing, chemical etching and milling, and cleaning and stripping when associated with these processes. On the other hand, the following processes are not included under the F006 listing: chemical conversion coating[1], electrolysis plating, and printed circuit board manufacturing[2]. The Agency will be publishing an explanation of its determination on the F006 listing in the Federal Register in the near future.

---

[1]Wastewater treatment sludges from the chemical conversion coating of aluminum is listed as EPA Hazardous Waste No. F019.

[2]Wastewater treatment sludges from printed circuit board manufacturing operations that include processes which are within the scope of the listing (e.g., chemical etching) are regulated as EPA Hazardous Waste No. F006.

This has been retyped from the original document.

Our records indicate that your petitioned waste is generated from processes that are not included in the scope of the F006 listing as described above. Therefore, we have discontinued the review of your petition. It should be noted that if your petitioned wastes are mixed with listed F006 wastes or any other listed hazardous wastes, the resulting mixture would be considered hazardous. Also, if your petitioned wastes or any mixture of wastes exhibit one or more of the characteristics of hazardous waste (40 CFR 261 Subpart C) then that waste would be considered hazardous. If our records are incorrect or if your petitioned wastes are mixed with other hazardous wastes for which you still seek delisting, please contact us as soon as possible so that we can reactivate our review. Also, please note that this decision does not apply to any other listed wastes that may be generated at your facility.

If you have any questions regarding this matter, please contact Myles Morse of my staff, at (202) 382-4788.

Sincerely,

Bruce Weddle
Director
Permits and State Programs Division

This has been retyped from the original document.

9444.1986(23)

Mr. Alfred A. Levin
Director, Toxic Substances Control
Regulatory Affairs
Velsicol Chemical Corporation
341 East Ohio Street
Chicago, Illinois 60611-337

Dear Mr. Levin:

This is in response to your March 19, 1986, letter in which you request written confirmation that the wastes generated from the manufacture of 2,4,5-Trichlorophenol (TCP) and Hexachlorophene at your Beaumont plant are not covered by the dioxin listings promulgated on January 14, 1985 (see 50 FR 1978). First, I would like to apologize for my delay in getting back to you; I hope this has not caused you any problems. With respect to your specific request, I agree that all of the wastes that are described in your letter that are generated at your Beaumont plant from 2,4,5-TCP and Hexachlorophene production are not covered by the dioxin listings (EPA Hazardous Waste Nos. F020-027).[1] As I explain below, these waste are specifically excluded activities are being carried out or were carried out in the past, the answer to these questions could change. More specifically:

Wastes from Manufacture of 2,4,5-TCP

- Wastewaters - I agree that the wastewaters that are generated in the 2,4,5-TCP process (i.e., streams 1 and 2, as referred to in your letter) are not covered by the EPA Hazardous Waste Nos. F020 and F023 listings. If, however, these wastewaters are treated on-site and a sludge is formed (e.g., biological sludge, spent activated carbon, spent filter aid, etc.), the sludge is covered by the listings and would be regulated as an acute hazardous waste. (See enclosed, March 29 1985, memorandum from Michael Cook to the Regions).

[1]The only stream which I did not address is the spent sulfuric acid from the manufacture of 2,4,5-TCP. However, Mr. Steven E. Silverman already addressed the regulatory status of this stream in a separate letter dated October 6, 1986. Therefore, I will not discuss it in this letter.

This has been retyped from the original document.

- Wastes from Manufacture of Hexachlorophene Where Highly Purified 2,4,5-TCP is Used

  - I agree with you (except as noted below) that all the wastes that are generated by this process (i.e., streams 3-11 and 13-19, as referred to in your letter) are not included within the scope of EPA Hazardous Waste Nos. F020 and F023). I agree with Dr. Bellin that highly purified 2,4,5-TCP means any 2,4,5-TCP that contains less than 1 ppb of 2,3,7,8-TCDD.[2] (You should be aware that if the Hexachlorophene Process at this plant was previously operated without using "highly purified 2,4,5-TCP," the wastes that are currently generated would be covered by EPA Hazardous Waste No. F023.)

Please feel free to give me a call if you have any further questions; my telephone number is (202) 475-8551.

Sincerely,

Matthew A. Straus
Chief
Waste Characterization Branch

Enclosure

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[2] This level is much lower than that typically found in 2,4,5-TCP where the 2,4,5-TCP had not been highly purified. See table 3 in listing background document to dioxin listing where it states that the concentration of 2,3,7,8-TCDD in trichlorophenols did range between 0.07 to 6.2 ppm. In addition, based on discussions we had with manufacturers who use to produce hexachlorophene meeting FDA standards with respect to TCDD-contamination and their supplies of 2,4,5-TCP, the 1 ppb level of 2,3,7,8-TCDD was indicated as necessary in order to meet the FDA specification for Hexachlorophene.

This has been retyped from the original document.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

9444.1986(25)

NOV -3 1986

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Andrew A. Rathsack, P.E.
Project Manager
Andrews Environmental
Engineering, Inc.
1320 South Fifth Street
Springfield, Illinois 62703

Dear Mr. Rathsack:

Thank you for your September 29, 1986, letter requesting written confirmation that floating hollow plastic balls, which are used to control vapors from industrial process tanks containing carbon disulfide, would not be a hazardous waste when disposed.

As you are aware, carbon disulfide is listed in 40 CFR 261.33(e) as an acutely hazardous substance waste under the Resource Conservation and Recovery Act (RCRA). This listing includes commercial chemical product, off-specification species, container residues, or spill residues when any of these are discarded or intended to be discarded.

The plastic balls are a hazardous waste since carbon disulfide has been incidentally deposited on them. Cleaning the balls should remove the carbon disulfide and render the balls non-hazardous. Simple washing may be sufficient for this purpose.

If I can be of any further assistance, please let me know.

Sincerely,

J. Winston Porter,
Assistant Administrator

NOV 7 1986

Mr. Gary Winslow
Sandoz Crop Protection Corp.
Chemical Manufacturing
1990 Bay Road
East Palo Alto, CA 94303

Dear Mr. Winslow:

This letter is in response to your October 8, 1986, letter requesting guidance regarding the interpretation of the scope of the spent solvent listings (i.e., EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005). In your letter, you discuss your understanding of these hazardous waste listings and request that we determine whether three specific wastes are listed spent solvents.

In general, your understanding of the regulations related to the identification and classification of spent solvent waste is correct. However, below are the criteria that we use to determine whether a particular waste is a hazardous spent solvent:

1) the waste must be a solid waste as defined in 40 CFR 261.2,

2) the waste must be generated as a result of the solvents being used for their solvent properties: that is, to solubilize (dissolve) or mobilize other constituents. (The listings do not cover manufacturing process wastes that are contaminated with solvents when the solvents are used as reactants or ingredients in the formulation of commercial chemical products.), and

3) in the case of solvent mixtures, the mixture must contain, before use, a total of ten percent or more (by volume) of one or more of the solvents listed in F001, F002, F004, or F005 (see 50 FR 53315).

In regard to the three specific examples that you discuss in your letter, each example involves the generation of a solvent-contaminated process wastewater. You are correct in your conclusion that the spent solvent listings are not applicable because these wastewaters are manufacturing process waste streams, and not the spent solvents.[1/] Thus, these wastes would only be considered hazardous wastes if they exhibit one or more hazardous waste characteristics defined in 40 CFR 261.21 - 261.24.

Please contact Mr. Matt Straus at (202) 475-8551 if you have additional questions regarding the regulatory status of these wastes.

1/ It should be noted that if the waste streams discussed in your letter were a mixture of wastewater and spent solvent (i.e., it is not a waste which contains a solvent as a result of an actual manufacturing process), the wastewater mixture would not be regulated if the mixture met the conditions in 40 CFR 261.3(a)(2)(IV)(A) or (B).

Sincerely,

Marcia Williams
Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9444.1986(27)

DEC 5 1986

Dr. Gerald Spiegelman
Environmental Controls Manager
Interwaste Services Co.
West Market Street
Campbelltown, Pennsylvania 17010

Dear Dr. Spiegelman:

This is in response to your letter of September 17, 1986, regarding the applicability of the hazardous waste regulations, specifically 40 CFR 261 and 40 CFR 268, to still bottoms generated from distillation of spent xylene from the manufacture of sodium xylenesulfonate. I apologize for the delay in responding to your letter. During the recent months we have been using all available resources to develop the land disposal restrictions final rule (51 FR 40572, November 7, 1986).

A process waste containing solvents where the solvent is a reactant in the formulation of commercial chemical products are not covered by the spent solvent listings (EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005). According to the information provided in your letter, xylene is used as a reactant in the manufacture of sodium xylenesulfonate, therefore, you are correct in noting that excess xylene from this process would not be covered under the F003 solvent listing. Still bottoms generated from the distillation of the excess xylene would not be a hazardous waste unless they exhibit one or more of the characteristics of hazardous waste (i.e., corrosivity, ignitability, EP toxicity, or reactivity). Furthermore, as you correctly stated, spent xylene and still bottoms from the recovery of xylene used in your process does not meet the listing description for EPA hazardous waste number U239, since it is not a discarded commercial chemical product, off-specification species, or other material identified under 40 CFR 261.33.

The first class of wastes subject to the land disposal restrictions effective November 8, 1986, include the F001-F005 solvents and certain dioxin-containing wastes. Therefore, the xylene still bottoms generated from your process would not be subject to these rules. If these wastes exhibit one or more of the characteristics of hazardous waste, they will be subject to the land disposal restrictions when the Agency promulgates treatment standards for characteristic wastes by the May 1990, statutory

*U.S. GPO : 1985-467-853

I hope this information adequately addresses your concerns. Please feel free to contact Bill Fortune, of my staff at (202) 475-6715, if you have further questions.

Sincerely,

Jacqueline W. Sales, Chief
Regulation Development Section

December 5, 1986

Mr. Eliot Cooper
Director of Environmental Affairs
Waste-Tech Services, Inc.
18400 W. 10th Avenue
Golden, CO 80401

Dear Mr. Cooper:

Thank you for your letter of November 17, 1986, in which you request clarification of the regulatory status of spent fluidized bed media used during the destruction of listed hazardous waste as well as clarification of facility changes allowed under interim status.

Under the RCRA regulations, spent fluidized bed media would not be considered to be a hazardous waste via application of 40 CFR 261.3(d) since the spent media would not be considered to have been derived from the treatment of a hazardous waste. In addition, the mixture rule in 40 CFR 261.3(a)(2)(iv) does not apply since the fluidized bed media is not a solid waste at the time it becomes mixed with a hazardous waste. Nevertheless, spent fluidized bed media contaminated with a listed hazardous waste (or, in this case, a waste derived from a listed hazardous waste) would still be subject to regulation since it contains a hazardous waste. See §261.3(c)(a) and (d)(2). Therefore, the treatment, storage, or disposal of spent fluidized bed media contaminated with hazardous waste must be handled as if the fluidized bed media itself were a hazardous waste. However, if the fluidized bed media, as a result of the incineration process or as result of other treatment, no longer contains a hazardous waste, it would no longer be subject to regulation under Subtitle C of RCRA. In this case, no delisting petition would be required.

Your second question concerns whether an interim status facility may add a new incinerator if the facility currently does not have an incineration process. The answer is yes, provided that the conditions specified in 40 CFR 270.72 are met. Under §270.72(c), owners or operators wishing to make any changes in or additions to the processes of treatment, storage, or disposal at an interim status facility are required to submit a revised Part A and a justification for the change to the regulating agency for approval. EPA or an authorized State may approve these changes only when they are necessary to prevent a threat to human health and the environment due to an emergency situation, or when they are necessary to comply with Federal regulations (including the interim status standards of 40 CFR Part 265) or State or local laws. This provision does not preclude the addition of a

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completely new process (e.g., incineration) at an interim status facility that currently does not have such a process.

It should be noted, however, that §270.72(e) limits the scope of any changes that take place at interim status facilities by prohibiting changes that require a capital expenditure greater than 50% of capital cost for the construction of a comparable entirely new hazardous waste management facility. Therefore, this provision (known as the "reconstruction" limit) may restrict the extent of a change even if the addition of a new process is allowed under §270.72(c).

The above response to your two questions describes the operation of the Federal RCRA program for the situations you outlined in your letter. However, 42 States now have final authorization to operate the RCRA program in lieu of EPA. Some State requirements may be more stringent or more restrictive than the Federal program in these two areas. If you have specific concerns regarding your operation in Colorado, I recommend that you contact Mary Gearhart in the Colorado Department of Health (303-331-4830) since the State has RCRA authorization.

If you have any further questions on the Federal RCRA requirements, please feel free to contact Larry Wapensky in EPA's Region VIII office in Denver (303-293-1660).

Sincerely,

Marcia E. Williams
Director
Office of Solid Waste

cc: Larry Wapensky, EPA Region VIII
Mary Gearhart, Colorado Department of Health

This has been retyped from the original document.

DEC 8 1986

Dr. George W. Rambo
National Pest Control Association, Inc.
8100 Oak Street
Dunn Loring, VA 22027

Dear Dr. Rambo:

This is in response to your letter of November 13, 1986, requesting an interpretation of the federal hazardous waste rules concerning the disposal of spent ash following fumigation with aluminum and/or magnesium phosphide products.

As you are aware, aluminum phosphide is listed as a hazardous waste (EPA Hazardous Waste No. P006) in 40 CFR §261.33(e). However, this listing only applies to the unused commercial product when discarded as the pure grade, technical grade, or where it is the sole active ingredient in a formulation[1/]. Since the product has been used, it would not be considered the listed hazardous waste. Nevertheless, the ash-residue of the product would be hazardous and subject to the appropriate requirements if it exhibits any of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity) and if the small quantity generator (SQG) level (1 kg of total hazardous waste calendar month) is exceeded. Thus, when the ash residue is collected, the generator is responsible for determining if it exhibits any of the hazardous waste characteristics; if it does, the additional processing of the residue (i.e., expose to air or place in a water detergent bath) must be managed in accordance with 40 CFR Parts 262 to 266.

If you have any further questions, please feel free to call Wanda LeBleu-Biswas of my staff at (202) 382-7392.

1/ The listing also applies to any off-spec commercial aluminum phosphide, container residues, and spill residues of the unused product.

Sincerely,

JD for MW

Marcia E. Williams
Director, Office of Solid Waste

9444.1986(30)

December 10, 1986

Curtis Verploegh
Hazardous Waste Manager
The University of New Mexico
Occupational Safety
Medical Building 3, #137
Albuquerque, NM 87131

Dear Mr. Verploegh:

This is in response to your October 21, 1986 letter in which you requested clarification as to whether your laboratory waste, generated by an investigator, performing research involving 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is covered under 40 CFR §261.31. The wastes in question are: 1.07 mg of TCDD contained in some 361 mouse carcasses, 450 gallons of cages and bedding, and 41 gallons of dry waste.

The wastes which you described are not the listed dixoin-containing wastes under 40 CFR §261.31. Rather, these wastes would more appropriately be characterized as infectious wastes, "... laboratory wastes, such as pathological specimens (e.g., all tissues, specimens of blood elements, excretes, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto..." see 40 CFR §241.101(h). To date, EPA has not promulgated criteria for identifying waste as infectious under §261 Subpart C.

The Agency has, however, developed a manual to provide guidance on the management of infectious waste. A copy is enclosed for your reference. You should be aware that typical infectious waste incinerators are probably not satisfactory devices for disposal of materials highly contaminated with TCDD. TCDD decomposes above 800C. These wastes which you describe can be safely managed by high temperature incineration.

I hope this adequately answers your questions.

Sincerely yours,

Doreen Sterling, Ph.D.
Chemist
Waste Characterization Branch

Enclosure

cc: Matt Straus

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DEC 11 1986

Mr. Randy-M. Mott
Heron, Burchette, Ruckert
and Rothwell
Suite 700
1025 Thomas Jefferson Street, N.W.
Washington, D.C. 20007

Dear Mr. Mott:

Thank you for your November 5, 1986, letter regarding the September 22, 1986, correction notice (51 FR 33612) for the spent pickle liquor final rule (51 FR 19320, May 28, 1986). You stated that the correction notice dramatically changed the spent pickle liquor final rule without prior notice and comment. You, therefore, argued that the Agency violated the Administrative Procedure Act because the Agency did not provide notice and comment, §4, 5 U.S.C. §553 (1966). You also argued that adoption of the correction notice by the State of Tennessee violates the Tennessee Administrative Procedure Act.

We disagree with your argument that our action has violated the Administrative Procedure Act. We think that the Agency's intent throughout the rulemaking process has been to list, as a hazardous waste, spent pickle liquor from steel finishing operations from facilities within the iron and steel industry, and that the Agency stated this intention clearly and repeatedly. In fact, until your letter, there has never been any question, or even assertion, that the listing is limited to only those facilities actually producing iron and steel. Thus, in the September 10, 1985, proposal that led to the May 1986 final rule, the Agency explained that the whole debate revolved around the question of whether the Agency's existing K062 listing applies to pickle liquor generated by any steel finishing operation or only from those steel finishing operations in the iron and steel industry. See, e.g. 50 FR 36966/1; 36967/1; 36967/2.

The Agency laid out several options to resolve the issue, including whether the listing "applies only to K062 wastes generated by the iron and steel industry". (id. at 36968/1). The reference to the "iron and steel industry" referred to facilities in Standard Industrial Codes (SIC) Codes 331-332, as shown by the Agency's reference to those SIC codes (id. at 36966/1), as well as, the regulatory language in §261.3(c)(2) (ii).

The final regulation adopted the option of narrowing the K062 listing to wastes from facilities within the iron and steel industry. In particular, we stated:

> "The Agency believes that the petitioners and the commenters to the September 10, 1985, proposed rule have a valid argument that the listing should be read to apply only to those facilities within the iron and steel industry." [emphasis added] (51 FR 19321/2)
>
> "Therefore, in light of the comments received and arguments made, the Agency had decided to modify its interpretation and narrow the scope of the spent pickle liquor listing to apply to those facilities within the iron and steel industry." [emphasis added] (51 FR 19321/2)
>
> "This amendment will have no adverse economic impact on small entities since the rule will reduce the hazardous waste requirements to those persons who generate spent acid in non-iron and steel industries." [emphasis added] (51 FR 19322/1)
>
> "The majority of commenters strongly supported the petitioners' claim that the plain language of the listing for spent pickle liquor from steel finishing operations...indicates that the listing applies only to facilities within the iron and steel industry."

The final rule mistakenly applied to facilities producing iron and steel. The preamble to the final rule also occasionally referenced this error. The rule did not reflect the Agency's intent and could not reasonably be viewed as doing so. The Agency (as shown above) did not propose such a limited construction, and received no comments suggesting such a restricted listing nor was the regulatory language consistent with the preamble language cited above.

It should also be noted that the May 1986 regulatory language contradicted the language of another regulation regarding waste K062 and so did not reflect the Agency's intent and could not reasonably be considered to do so. In particular, lime stabilized waste pickle liquor sludge from the iron and steel industry liquor (SIC codes 331-332) had been exempted from the "derived from" rule under §261.3(c)(2)(ii). See 49 FR 23284, June 5, 1984. Thus, a listing of pickle liquor only from facilities producing iron and steel would have made the listing narrower than the parallel exclusion for sludges derived from treating the listed waste. We repeat that such a factual contradiction could not be deemed to reflect the Agency's intent, and so could be changed by means of a technical correction. The Agency indeed noted this contradiction in making the technical correction. 51 FR 33612/2.

Therefore the Agency believes that it has not violated the Administrative Procedure Act. We believe that the regulated community is clear on the issues involving the pickle liquor listing as evidenced by the comments received on the Septebmer 1986, proposed rule. Also, the Agency believes that the commenters and the regulated community understand that the iron and steel industry is defined as SIC codes 331 and 332 (as stated in the June 5, 1984, final rule).

In support of this position,the Agency received numerous calls from the regulated community and State officials questioning the contradictory language in the preamble and final rule. Many of these callers indicated that the preamble language of the final rule indicates that the listing applies to all facilities within the iron and steel industry while the rule addresses facilities that "produce" iron and steel. The Agency recognized the contradiction as pointed out by callers and responded with the September 22, 1986, correction notice.

Thus, in light of the phone calls received by the Agency addressing the contradictory language in the preamble and regulatory language of the May 1986, final rule, the Agency concludes that the regulated community understands that the Agency made an error in the final rule, and that it did not have "a belated change of heart in the nature of the rule" as you allege. Furthermore, the Agency has difficulty understanding the practical consequences to your client of the corrected regulatory language. You indicate that Bristol recycles all pickle liquor and rinse water. We would be interested in an explanation of what operations at Bristol are regulated and which regulations would apply.

I trust that this letter adequately addresses your concerns. If you have questions, please contact Matthew Straus or Jacqueline Sales at (202) 475-8551.

Sincerely,

/s/ Jack W. McGraw

J. Winston Porter
Assistant Administrator

12 DEC 1986

Mr. Richard M. Barrett
Teledyne Monarch Rubber Company
10 Lincoln Park
Hartville, OH 44632

Re: Status of Delisting Petition #0507

Dear Mr. Barrett:

The purpose of this letter is to inform you that the Agency has reevaluated its previous interpretation of the hazardous waste listing for F006 wastes (Wastewater treatment sludges from electroplating operations) and has determined that it is overly broad. In particular, we believe that certain of the processes identified in the Listing Background Document that are not directly or indirectly implicated in the actual listing are not covered under the regulations as listed hazardous wastes. As a result, we now believe that F006 includes only common and precious metals electroplating, anodizing, chemical etching and milling, and cleaning and stripping when associated with these processes. On the other hand, the following processes are not included under the F006 listing: chemical conversion coating 1/, electroless plating, and printed circuit board manufacturing 2/. The Agency recently published an explanation of its determination on the F006 listing in the Federal Register 3/.

In addition, the Agency notes that your petition also identified the subject waste as EPA Hazardous Waste No. K062 The Agency has recently revised the scope of the K062 listing to include wastes from only those facilities described by

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1/ Wastewater treatment sludges from the chemical conversion coating of aluminum is listed as EPA Hazardous Waste No. F019.

2/ Wastewater treatment sludges from printed circuit board manufacturing operations that include processes which are within the scope of the listing (e.g., chemical etching) are regulated as EPA Hazardous Waste No. F006.

~~3/ See 51 FR 43350, December 2, 1986 for an explanation of the F006 determinati--~~

CONCURRENCES

SIC codes 331 and 332. Based upon discussions with Mr. Richard Bohaychyk of Teledyne, we have concluded that the SIC code for your facility causes the waste to not meet the K062 listing description.[4/]

Our records indicate that your petitioned waste is generated from processes that are not included in the scope of the F006 listing or that of the K062 listing, as described above. Therefore, we have discontinued the review of your petition. It should be noted that if your petitioned wastes are mixed with listed F006 wastes, listed K062 wastes, or any other listed hazardous wastes, the resulting mixture would be considered hazardous. Also, if your petitioned wastes or any mixture of wastes exhibit one or more of the characteristics of hazardous waste (40 CFR 261 Subpart C) then that waste would be considered hazardous.

If our records are incorrect or if your petitioned wastes are mixed with other hazardous wastes for which you still seek delisting, please contact us as soon as possible so that we can reactivate our review. Also, please note that this decision does not apply to any other listed wastes that may be generated at your facility.

If you have any questions regarding this matter, please contact Myles Morse of my staff, at (202) 382-4788.

Sincerely,

Myles Morse
Acting Chief
Variances Section

cc: Alan Debus, Region V
William Muno, Region V

[4/] See 51 FR 19320, May 28, 1986 for an explanation of the K062 decision. Also, see 51 FR 33612, September 22, 1986 (correction notice).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9444.1986(33)

Honorable Lloyd Bentsen
961 Federal Building
Austin, Texas 78701

Dear Mr. Bentsen:

Thank you for your November 29, 1986, letter requesting information concerning the regulatory status of electric arc furance (EAF) dust generated by the Bodner Metal and Iron Corporation of Houston, Texas, after treatment with Lopat Industries; K-20 encapsulation process. My office has reviewed the material supplied with the letter, and has concluded that the encapsulated EAF dust is still a hazardous waste under the Resource Conservation and Recovery Act (RCRA) and should be managed as such.

The Texas Water Commission, in its letter of November 7, 1986, to Emanuel Bodner of Bodner Metal and Iron Corporation, was correct in its assessment of Bodner Metal and Iron's EAF dust. This EAF dust is a listed hazardous waste (EPA Hazardous Waste No. K061) under 40 CFR §261.32. The hazardous constituents for which this waste was originally listed are hexavalent chromium, lead, and cadmium. A listed waste must be handled as hazardous, even if treated, unless a regulatory exclusion ("delisting") is granted.

The delisting process requires detailed sampling and testing of representative samples of the waste generated a particular facility. Delisting decisions are based on the characterizations of the wastes generated at individual facilities.

The standards that a waste must meet to be delisted are more stringent than the standards set in the RCRA regulations for the hazardous waste characteristics. These characteristics (i.e., extraction procedure [EP] toxicity, reactivity, corrosivity, and ignitability) were established to bring non-listed wastes which exhibited any of these characteristics under hazardous waste regulation. After the promulgation of the Hazardous and Solid Waste Amendments of 1984 (HSWA), the Agency is now required to evaluate all wastes, for which a delisting is sought, for their originally listed constituents of concern and for any "Appendix VIII" hazardous constituents reasonably believe to be present in the waste, as well as the hazardous waste characteristics, in each delisting demonstration.

It should be noted that the two series of EP toxicity tests performed on samples of treated EAF dust (the results presented with Mr. Bodner's letter of November 10, 1986) have produced leachate concentrations for lead that are too high to justify a delisting. The Agency uses a vertical and horizontal spread (VHS) dispersion model to aid in the evaluation of delisting petitions. This model uses leachate dat and waste volume to predict potential impacts of a waste upon ground water. The EP leachate data for lead (1.6 and 3.6 mg/l) in the treated waste, as presented in the Bodner letter, will produce compliance-point concentrations which fail the VHS evaluation (i.e., the compliance-point values exceed the National Interim Primary Drinking Water Standard for lead of 0.05 mg/l). The Agency has required that other stabilization technologies employed in several other delisting petitions achieve EP leachate concentrations for lead below 0.3 mg/l. Several petitioners have been successful in achieving these leachate levels.

Although it would not change the regulatory status of the EAF dust the Agency does believe that encapsulation processes (such as the Lopat K-20 process) are useful in controlling the mobility of hazardous wastes and thereby decreasing the probability of environmental contamination. To assure that stabilizing treatment technologies will successfully bind constituents over the long term, the Agency requires stabilized wastes to be ground to a uniform 100-mesh particle size prior to chemical testing. This provides the Agency with a means of evaluating the waste for the potential effects of weathering or mismanagement.

I hope this information addresses your concerns. If you have any additional questions concerning the delisting of hazardous wastes, please contact Mr. Myles Morse, of my staff, at (202) 382-4782.

Sincerely yours,

/s/ Jack W. McGraw

J. Winston Porter
Assistant Administrator