

MEMORANDUM

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Waste Engineering & Enforcement Division

FROM: Ross Bunnell, District II Enforcement
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DATE: July 15, 1997

SUBJECT: Use/reuse and related regulatory provisions of RCRA.

A while ago you asked me if I had any information regarding the use/reuse provisions of RCRA as they might apply to certain types of spent industrial chemicals. This memo and its attachments summarize my research into this area. I am sorry I was unable to get this to you any sooner, but I have been very busy with a number of consent orders lately. I hope this is of some help to you.

The discussion below is organized according to a number of major topics which impact the kinds of scenarios you had mentioned. Throughout this discussion, references are provided to the attached documents, which consist of 15 documents from the RCRA Permit Policy Compendium, and one Federal Register excerpt.

1.) The Three Different Use/Reuse Categories.

As you know, 40 CFR 261.2(e)(1) exempts three different classes of materials from the definition of solid waste when they are recycled. These include:

- a.) Materials which are used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed (40 CFR 261.2(e)(1)(i)).
- b.) Materials which are used or reused as effective substitutes for commercial products (40 CFR 261.2(e)(1)(ii)); and,
- c.) Materials which are returned to the original process from which they are generated, without first being reclaimed. Such a material must be returned as a substitute for raw material feedstock, and the process must use raw materials as principal feedstocks (40 CFR 261.2(e)(1)(iii)).

Any situation in which one of these provisions is being cited must be examined closely to ensure that the applicable criteria and limitations are being met, and that the recycling is not sham. Examples of legitimate use/reuse cited by EPA include: (1) the use of spent pickle liquor as a wastewater

conditioner (see compendium entry 9441.1985(20)); (2) the use of 36% phosphoric acid from the chemical polishing of aluminum as a substitute for 75% technical grade phosphoric acid used in wastewater treatment (see compendium entry 9441.1986(80)); (3) the processing of K061 flue dust into briquettes for use in steel production (see compendium entry 9441.1987(58)); and, (4) the reuse of ceramic glaze solids to make ceramic products for sale (see compendium entry 9441.1988(17)). In fact, EPA seems to allow quite a bit of latitude with respect to the details of how these materials are used or reused, provided that the basic criteria of the regulation are satisfied. For instance, in example (3) cited above, EPA acknowledged that the use of the K061 flue dust was legitimate, even though it was processed at an off-site location, under a batch tolling agreement, and even though it was necessary to add a sodium silicate binding agent in order to facilitate its being formed into briquettes.

However, EPA has also identified at least one situation which it feels does not constitute legitimate use/reuse. This situation involves the use of hazardous wastewaters as quenchwaters or slurring agents in the production of cement (see compendium entry 9489.1991(01)). EPA's reasoning was that, in this scenario, the hazardous constituents in the wastewater were not necessary to the cement production process, but were instead being treated. EPA made it clear in this case that the mere fact that the wastewater was effective as a quenching agent or as a slurring agent was not enough to make its use or reuse as a substitute for clean water legitimate. The fact that the resulting cement might be applied to the land (such as in a building foundation) only makes matters worse for this particular scenario, since this would amount to use constituting disposal.

In a number of other situations, EPA was unable to determine if the proposed use/reuse scenario was legitimate or not without additional information (see compendium entries 9441.1989(01), and 9493.1991(03)). Although they declined to make a determination in these cases, EPA did provide valuable guidance regarding the criteria by which such situations might be evaluated in order to determine if the use or reuse is legitimate. These criteria include:

- a.) Does the material truly function as an ingredient or as a substitute for a commercial product (or is it just "along for the ride")?
- b.) Does the use or reuse of the material result in distinct components as separate end products? (If so, it would be reclamation, not use/reuse.)
- c.) How contaminated is the material relative to the virgin material it replaces?
- d.) How variable is the material over time? (This is a quality control issue.)
- e.) Is the material used only in the amounts necessary for the production process, or is it used in excessive amounts? (If used excessively, this might be an indicator that the use or reuse is not legitimate.)
- f.) Is the material used as an approximately 1-for-1 replacement for the virgin material it replaces (i.e., if 1000 pounds of virgin material are normally used, is a roughly

equivalent amount of waste sufficient to replace it)? (This is a similar question as the previous question).

In addition, EPA has also outlined a number of criteria that would it feels would be indicators of the use or reuse not being legitimate -- that is, indicators of sham recycling (see 50 FR 638, column II, middle). These indicators (many of which are very similar in nature to the six questions above) are as follows:

- a.) The secondary material in question is ineffective or only marginally effective for the claimed use;
- b.) The secondary material is used in excess of the amount necessary for operating the process;
- c.) The recycler does not require product specifications on incoming secondary materials, and/or the specifications are not in accord with those generally in use in industry;
- d.) The secondary material is not as effective as the material it is replacing;
- e.) There is an absence of records regarding the recycling transaction;
- f.) The secondary material is not handled in a manner consistent with its use as a raw material or a commercial product substitute (i.e., it is not stored or handled in a manner that guards against significant economic loss).

In evaluating use/reuse situations, it is also very important to keep in mind the provisions of 40 CFR 261.2(e)(2), which void out the use/reuse exemptions in certain circumstances, and return the materials to regulation as solid wastes. In particular, the following materials are solid (and therefore hazardous) wastes, even if they are used or reused in accordance with one of the three scenarios specified in 40 CFR 261.2(e)(1):

- a.) Materials which are used in a manner constituting disposal, or used to produce products that are applied to the land (see paragraph 2 below);
- b.) Materials which are burned for energy recovery, used to produce a fuel, or contained in fuels (see paragraph 3 below);
- c.) Materials which are accumulated speculatively (see paragraph 4 below); and
- d.) The so-called “inherently waste-like” materials (i.e., EPA waste codes F020 through F023, F026, and F028).

It must also be pointed out that the use/reuse exemptions are voided if the use or reuse involves any sort of reclamation. As noted in 40 CFR 261.2(a)(4), reclamation may include processing to recover a usable product (for example, the recovery of metals values from plating wastes), or regeneration (for example, if spent etch is re-processed into virgin etch by removing contaminants and/or replenishing lost constituents). While the ban on reclamation is clearly spelled out in the regulatory language for two of the three use/reuse exemptions (i.e., 40 CFR 261.2(e)(1)(i) and (iii)), it is not as clearly spelled out for the remaining one (i.e., 40 CFR 261.2(e)(1)(ii)). However, to eliminate any doubt, EPA has established policy making it clear that the ban on reclamation applies to all three types of use/reuse (see 9441.1992(13); see also 50 FR 619, column III, middle, and 50 FR 637, column III, middle).

2.) Use Constituting Disposal.

As noted in paragraph 1 above, materials which are used in a manner constituting disposal (or which are used to produce products that are applied to the land) are not eligible for any of the use/reuse exemptions. As a result, they are solid wastes, and, if listed or characteristically hazardous, hazardous wastes as well. Such materials are regulated under the requirements of 40 CFR 266, Subpart C (i.e., 40 CFR 266.20 - .23). Examples of applications that EPA has identified as use constituting disposal include use in making fertilizers, asphalt, and building foundations (see 50 FR 628, column I, bottom).

It should be noted, however, that EPA has provided clarification indicating that certain situations do not fall under the category of use constituting disposal. Such situations include the legitimate use or reuse of waste materials as wastewater treatment chemicals (see compendium entries 9441.1985(20), 9441.1986(80), and 9441.1987(17)). In addition, EPA has determined that situations in which waste materials are legitimately incorporated into pesticides also do not fall under the category of use constituting disposal (see 50 FR 628, column II, top).

3.) Burning for Energy Recovery.

Another activity which is not allowed under the use/reuse provisions is burning for energy recovery (or use as an ingredient to make a fuel). Such materials are typically regulated as hazardous waste fuels, and the units which they are burned in are typically regulated under the boiler and industrial furnace provisions of 40 CFR 266 Subpart H (i.e., 40 CFR 266.100 - .112).

However, this does not necessarily mean that every material is burned is fully regulated as a solid waste. In particular, in one compendium entry (9441.1993(10)), EPA indicated that a company's burning of a sulfide oil in a sulfuric acid production furnace did not constitute waste management. In this case, however, EPA made this determination based on their feeling that the sulfide oil was a co-product, and therefore should be treated as a product, not as a waste. For more discussion on the issue of co-products, see paragraph 5 below.

4.) Speculative Accumulation Requirements.

In any use/reuse scenario, it is important to keep a number of things in mind regarding the speculative accumulation provisions of 40 CFR 261.2(b)(4), since they are designed to prevent the use/reuse exemptions from being abused. In particular:

- a.) The speculative accumulation provisions only apply to: (1) secondary materials which would otherwise be exempt from the definition of solid waste, such as characteristic sludges and by-products being reclaimed, commercial chemical products being reclaimed, and materials being used or reused under the provisions of 40 CFR 261.2(e); and, (2) certain other secondary materials which by regulation have been made specially subject to speculative accumulation requirements (such as precious metal recyclables).
- b.) “Speculative accumulation” consists not only of accumulating a material for an excessive period of time (i.e., over a year in Connecticut), but also the act of accumulating any amount of a potentially recyclable material for any period of time without a feasible means of being recycled (i.e., without a legitimate market or disposition). Since sorting out all of these issues can be confusing, it might be helpful to summarize the four possible situations in which speculative accumulation requirements might apply:
 - (1) If a material is not potentially recyclable (i.e., no known method or technology to recycle it), it is immediately a solid waste (since the claim of recycling is sham), and the speculative accumulation requirements do not apply.
 - (2) If a material is potentially recyclable, but has no feasible means of being recycled, it is considered to be speculatively accumulated from the moment it is generated, and is therefore a solid waste. The length of accumulation is irrelevant in this case.
 - (3) If a material is potentially recyclable and has a feasible means of being recycled, but has been accumulated for too long (in Connecticut, for greater than a year), it is considered to be speculatively accumulated, and becomes a solid waste on the date that it is accumulated in excess of the allowed timeframe (i.e., on day 366).
 - (4) If a material is potentially recyclable and has a feasible means of being recycled, and has not been accumulated for too long (in Connecticut, for no greater than a year), the applicable recycling exemption continues to apply, and the material is not regulated.

For a complete discussion on this issue, see 50 FR 618, column III, top, 50 FR 634, column III, middle, and 50 FR 635, column II, middle.

5.) Product vs. Co-Product.

In a number of policy documents, EPA brings up the idea of co-products as a subset of products (both of which are *not* under RCRA control), and distinguishes them from by-products (which *are* under RCRA control). The following table summarizes the criteria that EPA considered in these policy documents (see compendium entries 9441.1993(10) and 9441.1994(13); see also 50 FR 625, column I, bottom, and 50 FR 630, column I, top):

PRODUCT OR CO-PRODUCT	BY-PRODUCT
<ul style="list-style-type: none"> *Fit for end use, or requires only minimal processing to become usable. *Provides revenues. *Managed to prevent a release (i.e., as a valuable commodity). *Marketability guaranteed. *Lacks hazardous constituents not normally found in the corresponding virgin material. *Meets relevant product specifications. *Produced intentionally. *Is ordinarily used in its existing state as a commodity in trade by the general public. *Meets relevant product specifications. *Examples from the petroleum industry: kerosene, pitch, and various grades of fuel oil, all of which are not the primary products of the refining process, but which are still valuable and widely used <u>co-products</u>. 	<ul style="list-style-type: none"> *Unfit for end use without substantial further processing. *Not the primary product of the production process. *Generally of a residual character. *Not produced intentionally or separately. *Examples: distillation column residues, mining slags and drosses, reactor cleanouts.

For materials which are determined to be co-products, RCRA rules do not apply, and the waste is treated exactly the same as a virgin product. However, materials which are determined to be by-products are subject to RCRA control, and must be evaluated further to determine their precise status under RCRA.

One example of a situation in which EPA determined that an apparent waste material was a co-product was in the instance of one company's waste hydrochloric acid, which was to be used directly as a pickling liquor (see compendium entry 9441.1994(13)). However, in this same document, EPA did not feel that an alternate use of this material as a fracturing agent in oil exploration was exempt from regulation, since its injection into the ground would amount to use constituting disposal. EPA made a similar determination in another case involving the reuse of materials in lower-demand applications (see compendium entry 9441.1994(24)). In this case, a company wanted to know if high-purity spent chemicals from a high-demand application could be reused in another, lower-demand application. Specifically, the company wished to use solvents from printed circuit board cleaning (which has very low tolerances for contamination) for general use. EPA concurred that this

was acceptable, since the materials in question did not meet the definition of “spent material” in 40 CFR 261.1(c), and so could not be regulated as hazardous wastes.

6.) The Status of Neutralization Activities.

A use/reuse scenario which is often raised is the use or reuse of corrosive wastes as neutralizing agents. While EPA has made it clear that materials that are neutralized are typically considered wastes (see compendium entry 9441.1986(39) and 50 FR 638, column III, middle), there are certain situations in which the use or reuse of corrosive wastes as neutralizing agents can be considered legitimate.

In particular, the compendium document cited above (i.e., 9441.1986(39)) outlines three criteria under which such use would be considered legitimate:

- a.) If the corrosive waste meets appropriate specifications with respect to contaminant levels;
- b.) If the corrosive waste is as effective as the virgin material it is substituted for; and
- c.) If the material is used under controlled conditions (i.e., is properly and safely stored prior to use, not, say, stored in an un-lined surface impoundment).

Another compendium document (9441.1987(17)) identifies one additional criterion--namely, that, in a two-party transaction, consideration (such as monetary reimbursement) is given in exchange for the material. These four criteria are also set forth in a virtually identical form in the January 4, 1985 recycling regulation preamble (see 50 FR 638, column III, middle).

Another possible concern is that use of wastes as neutralizing agents might somehow be considered use constituting disposal. However, as noted in at least three policy documents (i.e., compendium entries 9441.1985(20), 9441.1986(80), and 9441.1987(17)), this is not the case. As indicated in these documents, the concept of use constituting disposal applies only to situations where materials are applied to the land, not those in which materials are discharged in a wastewater.

7.) Reuse of Wastewaters.

Occasionally, you may find that a generator claims to use or reuse a wastewater (such as rinsewaters or the treated discharge from a wastewater treatment plant). These types of situations must be looked at especially closely, since they may easily stray into the sham area. For instance, in one policy document (see compendium entry 9489.1991(01)), EPA stated that the use of hazardous wastewaters as quenchwaters and/or slurring agents in the production of cement was not an example of legitimate use or reuse. In this case, EPA was concerned that the hazardous constituents in the wastewaters were not necessary to the cement production process, and were effectively being treated. EPA further stated that the fact that the wastewater was an effective substitute for clean water was not sufficient to make its use in this manner legitimate.

EPA has also stated that it does not consider materials such as wastewaters to meet the definition of “reclaimed materials” under 40 CFR 261.3(c)(2) (see 50 FR 634, column I, middle). This means that, in most cases, hazardous wastewaters which are used or reused in some manner would remain solid and hazardous wastes to the same extent as if they were being disposed of.

8.) The Regulatory Status of Characteristically Hazardous Commercial Chemical Products.

In looking at the table in 40 CFR 261.2, it is not clear how characteristically hazardous commercial chemical products should be regulated under RCRA, since this table only lists “commercial chemical products listed in 40 CFR 261.33.” However, in at least one policy letter (see compendium entry 9444.1993(01)) EPA has noted that commercial chemical products which are characteristically hazardous are regulated the same as those which are listed in 40 CFR 261.33. That is, in each instance in the table in 40 CFR 261.2 where commercial chemical products listed in 40 CFR 261.33 are indicated as being solid wastes (or not being solid wastes), the same is true for the corresponding characteristically hazardous commercial chemical products.

9.) The Regulatory Status of Materials that Are Reclaimed from Hazardous Waste and Used Beneficially.

The so-called “derived from” rule of 40 CFR 261.3(c)(2)(i) indicates that any solid waste generated from the treatment, storage, or disposal of hazardous waste is itself a hazardous waste, unless it meets certain criteria (i.e., if the original waste was characteristically hazardous, that it no longer exhibits the characteristic, or, if the original waste was listed, it is delisted). However, in doing so, this regulation exempts “materials that are reclaimed from solid wastes and that are used beneficially ... unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.”

While this regulation would appear to clearly exempt from regulation any material which was fully reclaimed, it is unclear with respect to materials which may only be partially reclaimed, and which may require further processing in order to be usable. However, EPA has provided clarification for at least one common group of reclaimed materials--namely, recovered metals. If recovered metals are suitable for direct use, or only have to be refined to be usable, then they are products, not wastes (see compendium entry 9441.1986(43) and 50 FR 634, column I, middle). In addition, EPA has indicated that this exemption does not apply to materials which are not ordinarily considered to be commercial products, such as wastewaters or stabilized wastes (see 50 FR 634, column I, middle).

10.) Documentation of Claims.

It should be noted that the requirements of 40 CFR 261.2(f) regarding documentation of claims apply in situations in which a use/reuse claim is raised (or, for that matter, to any other situation in which a person makes a claim that a material is not a solid waste or is conditionally exempt from regulation). This documentation must contain the items identified in 40 CFR 261.2(f), including:

- a.) A demonstration that there is a known market or disposition for the material. This should include things such as the names and addresses of the recyclers that accept the material, as well as any other information that substantiates the minimum turnover rate, such as shipping papers, contracts, or correspondence with the recycler (see 50 FR 636, column II, middle).
- b.) That the person making the claim meets the terms of the exclusion or exemption. In the case of a claim that a material is used as an ingredient in an industrial process to make a product or as an effective substitute for a commercial product (i.e., 40 CFR 261.2(e)(1)(i) or (ii)), this should include information that addresses the six questions a through f listed in paragraph 1 above.
- c.) Appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation.
- d.) In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

EPA has also indicated that certain additional information may be appropriate. For instance, EPA has stated that persons making use/reuse claims should be able to document that they are not accumulating the materials speculatively (see 50 FR 642, column III, bottom). EPA has also indicated that if a generator is shipping a recyclable material a great distance for recycling, he should be able to demonstrate that it is “economically reasonable” to do so (see 50 FR 635, column I, top).

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attachments