Hazardous Secondary Materials Recycling Inspectors Checklist

ASTSWMO Training Section II
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U.S. Environmental Protection Agency
Office of Resource Conservation and Recovery

Hazardous Secondary Materials Checklist Introduction

- Designed to assist EPA and states with monitoring compliance at facilities that generate and recycle hazardous secondary materials (HSM).
- Includes information on how the definition of solid waste (DSW) relates to the regulation of HSM being recycled.
- Describes and summarizes statutory provisions, regulatory requirements, and policies. It is not a substitute for these provisions, regulations, or policies, nor is it a regulation itself.

Introduction (continued)

- *Hazardous secondary material* (HSM) means a secondary material (e.g., spent material, by-product, or sludge) that, when discarded, would be identified as hazardous waste under 40 CFR part 261. (40 CFR 260.10)
- In other words, an HSM may or may not be a hazardous waste depending on whether it is discarded.
- Sometimes "HSM" is used as shorthand for excluded or exempted recyclable material. However, from regulatory perspective, HSM can include either discarded or non-discarded material.
- It is the "material" that is evaluated under the definition of solid waste (40 CFR 261.2) to determine whether or not is it a solid waste.

Introduction (continued)

- The HSM checklist consists of a 4-page checklist and a number of appendices on specific recycling topics.
- The appendices can also be used as a stand-alone reference for the different topic areas.
- During this training, we will walk through several scenarios using this checklist.
- Link to the checklist: https://www.epa.gov/hw/inspection-checklist-tool-facilities-generating-and-recycling-hazardous-secondary-materials-2024

Hazardous Secondary Material (HSM) Recycling Checklist
Table of Contents

HSM Recycling Checklist.....5

Appendix A: Legitimate Recycling.....9

Appendix B: Speculative Accumulation.....14

Appendix C: Recycling Exclusions and Exemptions.....19

Appendix D: Use Constituting Disposal.....34

Appendix E: Burning for Energy Recovery.....39

Appendix F: Inherently Waste-like Materials.....43

Appendix G: Use-Reuse.....46

Appendix H: Reclamation.....51

Appendix I: Processed or Unprocessed Scrap Metal.....57

Appendix J: Hazardous Waste Recycling Process.....62

Appendix K: Documentation of Claims.....66

Appendix L: Generator Controlled Exclusion.....68

Appendix M: Transfer-Based Exclusion including Exports.....73

Appendix N: Remanufacturing Exclusion.....87

Knowledge Check (Poll)

- A hazardous secondary material that is legitimately recycled is not a solid waste.
  - True.
  - False.
  - It depends.

Scenario 1: Hazardous Spent Solvent Distillation and Residuals Recycling

- A generator that does a lot of painting operates a solvent distillation unit to reclaim F001-F005 listed solvent on site under the generator-controlled exclusion at 40 CFR 261.4(a)(23). The reclaimed solvent is used on site for the painting operations. The distillation 'pucks' (still bottoms) are sent off for 'solids distillation' under the transfer-based exclusion at 40 CFR 261.4(a)(24), but the generator cannot demonstrate how much solvent is reclaimed from the pucks nor what its use will be after solids are distilled further.

Identifying the HSM

- Scenario 1 involves two HSM, each of which must be evaluated separately.
  - HSM 1: Listed solvents recycled on site. Generator has notified under the generator-controlled exclusion.
  - HSM 2: Listed solvent still bottoms, sent off site for recycling. Generator has notified under the transfer-based exclusion.

Assumptions

- For the first HSM (solvents recycled on site), assume the state has adopted the generator-controlled exclusion.
  - If your state has not adopted these exclusions, then the HSM would be managed as a hazardous waste until it is fully reclaimed.
  - Also, assuming that the spent solvent is stored in a tank or container prior to distillation.
- For the second HSM (still bottoms sent off site for recycling), assume that the HSM is being sent to a facility in a state that has adopted the transfer-based exclusion or to a permitted facility.

Evaluation of HSM #1 (Solvents)

Hazardous Secondary Material (HSM) Recycling Checklist		
Note: For any question where the answer is unknown, make a note in the checklist below, list the information needed to answer that question in the attached form, and then continue to the next question.		
1. Description of the HSM, including what waste code(s) would apply if it is discarded. **F001-F005 listed solvents**		
2. Description of the recycling process, including how the HSM is managed during storage prior to recycling. **Solvents are reclaimed in an on-site distillation system on a continual basis; storage prior to distillation in a tank or container**		
3. Accumulation start date: N/A	4. If accumulation start date is > 1 year ago	
	a. The quantity of HSM stored onsite on January 1 of the previous calendar year.	b. The quantity of HSM stored onsite on January 1 of the current calendar year.

Evaluation of HSM #1 (Solvents) (cont'd)

5. Description of the recycled product(s) and where they are sold and/or used by the generator. (Note: If the HSM is used directly without processing, the HSM would be considered the product in this analysis.) Authority to request information to document that a material is not a solid waste is found in 40 CFR 261.2(f). See also Appendix K. **Reclaimed solvents are used on site for painting operations**
6. Based on the above information, does the recycling meet the definition of legitimate recycling in 40 CFR 260.43? (See Appendix A) YES/NO If NO, then the HSM is a solid and hazardous waste per 40 CFR 261.2(g). Because the recycling is not legitimate, processing of the hazardous waste is not considered an exempt recycling process under 40 CFR 261.6(c) and (d) and requires a RCRA treatment permit. If YES, continue to 7.
7. Based on the above information, is the HSM subject to speculative accumulation limits, and is it being speculatively accumulated as defined in 40 CFR 261.1(c)(8)? (See Appendix B) YES/NO If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(4). If NO, continue to 8.

Evaluation of HSM #1 (Solvents) (cont'd)

8. Regulatory citation given for the specific HSM recycling solid waste exclusion, variance or non-waste determination being used (See Appendix C): **40 CFR 261.4(a)(23)** If NOT APPLICABLE, skip to #10
9. Does the HSM recycling comply with all the conditions of the exclusion? (See Appendix C) YES/NO If YES, then the HSM is not regulated as a hazardous waste per the specific exclusion. If NO, then the HSM is regulated as a hazardous waste.

Appendix C: Recycling Exclusions and Exemptions

40 CFR 261.4(a)(23), (24), (25), and (27)	Hazardous Secondary Material (HSM) reclamation exclusions	HSM that is (1) reclaimed under the control of the generator (40 CFR 261.4(a)(23)) (See Appendix L); (2) transferred to a third party for reclamation (40 CFR 261.4(a)(24)) (See Appendix M); (3) exported for reclamation (40 CFR 261.4(a)(25)) (See Appendix M); or (4) reclaimed under a remanufacturing agreement (40 CFR 261.4 (a)(27)) (See Appendix N) is not a solid waste, provided all conditions are met. See regulations for full description of conditions.

Appendix L – Under the Control of the Generator Exclusion

Generator Controlled Exclusion (40 CFR 261.4(a)(23)) – Short Form Checklist		
1	Is the hazardous secondary material (HSM) being reclaimed "under the control of the generator?" That is, is the HSM being reclaimed at the generated facility, at a different facility that is under the control of the generator, or under a specific tolling agreement? Note: "reclaimed" does not include recycling that involves use constituting disposal (see Appendix D) or burning for energy recovery (see Appendix E).	If yes, then continue to Question 2. If no, this exclusion does not apply.
2	Is the HSM contained?	If yes, then continue to Question 3. If no, this exclusion does not apply and the uncontained HSM is a solid and hazardous waste subject to all applicable RCRA regulations.
3	Is the HSM being reclaimed in a timely manner (i.e., not speculatively accumulated)?	If yes, continue to Question 4. If no, the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.

4	Did the HSM generator provide notice using the Site ID form (EPA form 8700-12)?	If yes, continue to Question 5. If no, the generator needs to submit notification to use this exclusion.
5	Is the HSM subject to material-specific management standards?	If yes, then the HSM must be managed under the material-specific exclusion and not under the generator-controlled exclusion. If no, continue to Question 6.
6	Does the HSM generator have documentation that the HSM is being legitimately reclaimed?	If yes, then continue to Question 7. If no, then the generator needs to document its legitimacy determination to use this exclusion. If the HSM is not being legitimately recycled, the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.
7	Has the HSM generator complied with the emergency preparedness and response requirements in 40 CFR 261, subpart M?	If yes, the HSM generator meets the conditions of this exclusion. If no, then the generator is not meeting all the conditions of this exclusion and the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.

Initial Conclusion: On-Site Solvent Recycling

- Recycling is done on site and generator has notified; meets definition of recycling under the control of the generator.
- Spent solvent recycled in a continual manner – likely not "speculatively accumulated"
- Spent solvent likely "legitimately recycled"
  - Useful contribution – spent solvent regenerated into fresh solvent.
  - Valuable product – recovered solvent used for on-site painting operations
  - Managed as a valuable commodity – spent solvent managed in tanks, likely "contained"
  - Hazardous constituents – Recovered solvents unlikely to have elevated hazardous constituents not in original solvents
- Recycling process appears to meet the conditions of the generator-controlled exclusion.

Next steps: Verify management of spent solvent and legitimate use of recovered solvent during an inspection.

Evaluation of HSM #2 (Still Bottoms)

Hazardous Secondary Material (HSM) Recycling Checklist		
Note: For any question where the answer is unknown, make a note in the checklist below, list the information needed to answer that question in the attached form, and then continue to the next question.		
1. Description of the HSM, including what waste code(s) would apply if it is discarded. **F001-F005 listed solvent still bottoms**		
2. Description of the recycling process, including how the HSM is managed during storage prior to recycling. **Sent off site for solids distillation. No information on storage prior to recycling or the product of the distillation process.**		
3. Accumulation start date: **Unknown**	4. If accumulation start date is > 1 year ago	
	a. The quantity of HSM stored onsite on January 1 of the previous calendar year.	b. The quantity of HSM stored onsite on January 1 of the current calendar year.

Evaluation of HSM #2 (Still Bottoms) (cont'd)

5. Description of the recycled product(s) and where they are sold and/or used by the generator. (Note: If the HSM is used directly without processing, the HSM would be considered the product in this analysis.) Authority to request information to document that a material is not a solid waste is found in 40 CFR 261.2(f). See also Appendix K. **Unknown – Need more information**
6. Based on the above information, does the recycling meet the definition of legitimate recycling in 40 CFR 260.43? (See Appendix A) YES/NO If NO, then the HSM is a solid and hazardous waste per 40 CFR 261.2(g). Because the recycling is not legitimate, processing of the hazardous waste is not considered an exempt recycling process under 40 CFR 261.6(c) and (d) and requires a RCRA treatment permit. **Unknown** If YES, continue to 7.
7. Based on the above information, is the HSM subject to speculative accumulation limits, and is it being speculatively accumulated as defined in 40 CFR 261.1(c)(8)? (See Appendix B) YES/NO **Unknown** If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(4). If NO, continue to 8.

Note: Need more information?

- If there is not enough information to establish legitimate recycling and/or no speculative accumulation, the inspector can request the necessary information under the authority of 40 CFR 261.2(f) (as explained in Appendix K)
- However, it may still be useful to continue through the checklist to see if there is any additional information needed.
- The checklist include a page for notes on what additional information is needed.

Evaluation of HSM #2 (Still Bottoms) (cont'd)

8. Regulatory citation given for the specific HSM recycling solid waste exclusion, variance or non-waste determination being used (See Appendix C):

40 CFR 261.4(a)(24)

If NOT APPLICABLE, skip to #10

Appendix C: Recycling Exclusions and Exemptions

40 CFR 261.4(a)(23), (24), (25), and (27)	Hazardous Secondary Material (HSM) reclamation exclusions	HSM that is (1) reclaimed under the control of the generator (40 CFR 261.4(a)(23)) (See Appendix L); (2) transferred to a third party for reclamation (40 CFR 261.4(a)(24)) (See Appendix M); (3) exported for reclamation (40 CFR 261.4(a)(25)) (See Appendix M); or (4) reclaimed under a remanufacturing agreement (40 CFR 261.4 (a)(27)) (See Appendix N) is not a solid waste, provided all conditions are met. See regulations for full description of conditions.

Evaluation of HSM #2 (Still Bottoms) (cont'd)

Appendix M – Transfer-Based HSM Exclusion including Exports

Transfer-Based HSM Exclusion (40 CFR 261.4(a)(24)) – Short Form Checklist		
1	Is the hazardous secondary material (HSM) being transferred to another facility for reclamation by the HSM generator? Note: "Reclamation" does not include recycling that involves use constituting disposal (see Appendix D) or burning for energy recovery (see Appendix E).	If yes, then continue to Question 2. If no, this exclusion does not apply.
2	Is the HSM being exported to another country for reclamation?	If yes, go to HSM Exported and Reclaimed Short Form Checklist. If no, go to Question 3.
3	Is the HSM being reclaimed in a timely manner (i.e., not speculatively accumulated)?	If yes, continue to Question 4. If no, the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.
4	Is the HSM only handled by the HSM generator, the transporter, an intermediate facility and/or the reclaimer, and, while in transport, not stored for more than 10 days at a transfer facility?	If yes, continue to Question 5. If no, the HSM is not eligible for this exclusion.

Unknown

Evaluation of HSM #2 (Still Bottoms) (cont'd)

5	Is the HSM subject to material-specific management standards? Some examples of HSM subject to material specific standards are oil-bearing hazardous secondary materials (40 CFR 261.4(a)(12)); hazardous secondary materials used to make zinc fertilizers (40 CFR 261.4(a)(20)) or cathode ray tubes (40 CFR 261.4(a)(22))	If yes, then the HSM must be managed under the material-specific exclusion and not under the transfer-based exclusion. If no, continue to Question 6.
6	Is the HSM being legitimately reclaimed?	If yes, then continue to Question 7. **Unknown** If the HSM is not being legitimately recycled, the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.

Evaluation of HSM #2 (Still Bottoms) (cont'd)

7	Has the HSM generator met the following conditions: a) Does the HSM generator ensure the HSM is contained while managed at its facility? b) Has the HSM generator made reasonable efforts to ensure the HSM will be safely managed by any intermediate facility and the reclamation facility and legitimately recycled by	If the answers to all of the sub-questions under question 7 are yes, then the HSM generator is meeting their obligations under this exclusion. If the answer to any of these sub-questions is no, then the HSM generator is not meeting all the conditions of this exclusion and the HSM is a solid and hazardous waste subject to all applicable RCRA regulations.
	any reclamation facility, if such facilities do not have a RCRA permit? c) If sending their HSM to a facility that does not have a RCRA permit, does the HSM generator keep documentation and certification of any reasonable efforts made for at least 3 years? d) Does the HSM generator keep records of all off-site shipments of HSM for at least 3 years? e) Does the HSM generator keep confirmation of receipts from all reclaimers and any intermediate facilities for at least 3 years? f) Has the HSM generator complied with the emergency preparedness and response requirements in 40 CFR 261, subpart M?	**Unknown**

Evaluation of HSM #2 (Still Bottoms) (cont'd)

8	Has the HSM reclaimer and all intermediate facilities met the following conditions: a) Does the reclaimer and any intermediate facility keep records of all HSM received from off-site for at least 3 years? b) If applicable, does the intermediate facility send the HSM to the reclaimer designated by the HSM generator? c) Does the reclaimer and any intermediate facilities send confirmations of receipt to the HSM generator? d) Does the reclaimer and any intermediate facilities manage the HSM at least as protectively as the analogous raw material and is the HSM contained? e) Are the residuals from the reclamation process managed in a way that protects human health and the environment? f) Does the reclaimer and any intermediate facilities have financial assurance?	If the answers to all of the sub-questions under question 8 are yes, then the HSM reclaimer and intermediate facility are meeting their obligations under this exclusion. If the answer to any of these sub-questions is no, then the HSM reclaimer and/or intermediate facility are not meeting all the conditions of this exclusion and the HSM is a solid and hazardous waste subject to all applicable RCRA regulations. **Unknown**

Evaluation of HSM #2 (Still Bottoms) (cont'd)

9	Did the HSM generator, the HSM reclaimer, and any intermediate facilities provide notice using the Site ID form (EPA form 8700-12)?	If yes, they are eligible to use the transfer-based exclusion. If no, these facilities need to submit notification to use this exclusion.

Unknown

Questions about this scenario?

- What are the most important questions to answer about this scenario before making a determination regarding compliance?

Initial Conclusion: Still Bottoms Sent Off Site

- Not enough information to make initial conclusion.
- Inspector may request information on:
  - How the still bottoms are being managed. (Are they contained?)
  - How long they are stored before being sent off site (Are they speculatively accumulated?)
  - Where are the still bottoms being sent? Is it a RCRA permitted recycler who has notified under the transfer-based exclusion?
  - If not, has the generator performed a “reasonable efforts” audit of the recycler? (You can request a copy)
  - You can also ask to see shipping records and confirmations of receipt, to verify the information.

Scenario 2: Paint-blast media used as an absorbent and burned off site as a fuel

- Facility A generates a starch-based paint blast media that is high in RCRA TC metals. Facility A reuses some of the spent media as absorbent on site. They send the rest of the HSM off site to Facility B, who uses a portion of the HSM as an absorbent and sends the rest to their furnace as a fuel. Both A and B facilities claim that all the spent blast media is exempt because it could all be continued to be used as an absorbent even though only a small portion is used. How is this HSM regulated under RCRA at both facilities?

Evaluation of HSM #1 (Used as Absorbent)

Hazardous Secondary Material (HSM) Recycling Checklist		
Note: For any question where the answer is unknown, make a note in the checklist below, list the information needed to answer that question in the attached form, and then continue to the next question.		
1. Description of the HSM, including what waste code(s) would apply if it is discarded. **Spent paint blast media contaminated with TC metals (likely lead - D008 and chromium – D007)**		
2. Description of the recycling process, including how the HSM is managed during storage prior to recycling. **Starch-based paint blast media that is high in RCRA TC metals is used as an absorbent on site.**		
3. Accumulation start date: **Unknown**	4. If accumulation start date is > 1 year ago	
	a. The quantity of HSM stored onsite on January 1 of the previous calendar year.	b. The quantity of HSM stored onsite on January 1 of the current calendar year.

Evaluation of HSM #1 (Used as Absorbent) cont.

5. Description of the recycled product(s) and where they are sold and/or used by the generator. (Note: If the HSM is used directly without processing, the HSM would be considered the product in this analysis.) Authority to request information to document that a material is not a solid waste is found in 40 CFR 261.2(f). See also Appendix K. **HSM is used "as is" on site by the generator as an absorbent**
6. Based on the above information, does the recycling meet the definition of legitimate recycling in 40 CFR 260.43? (See Appendix A) YES/NO If NO, then the HSM is a solid and hazardous waste per 40 CFR 261.2(g). Because the recycling is not legitimate, processing of the hazardous waste is not considered an exempt recycling process under 40 CFR 261.6(c) and (d) and requires a RCRA treatment permit. **Unknown** If YES, continue to 7.
7. Based on the above information, is the HSM subject to speculative accumulation limits, and is it being speculatively accumulated as defined in 40 CFR 261.1(c)(8)? (See Appendix B) YES/NO **Unknown** If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(4). If NO, continue to 8.

Is the HSM used as absorbent legitimate recycling?

Appendix A – Legitimate Recycling

40 CFR 260.43

The regulatory language from the 2018 revisions to the definition of legitimate recycling follows. The legitimate recycling regulations apply to all hazardous secondary materials regulated under the recycling exclusions and exemptions of RCRA, including recycling exclusions from the definition of solid waste in 40 CFR 261.2 and exemptions from permitting for recyclable materials in 40 CFR 264.1(g)(2). In addition, hazardous secondary materials that are sham recycled because the recycling is not legitimate are solid waste and are not exempt per 40 CFR 261.2(g).

There are four factors to the legitimate recycling definition, as outlined in the regulations below.

§260.43 Legitimate recycling of hazardous secondary materials

(a) Recycling of hazardous secondary materials for the purpose of the exclusions or exemptions from the hazardous waste regulations must be legitimate. Hazardous secondary material that is not legitimately recycled is discarded material and is a solid waste. In determining if their recycling is legitimate, persons must address all the requirements of this paragraph and must consider the requirements of paragraph (b) of this section.

Is the HSM used as absorbent legitimate recycling? Cont.

[Factor 1] Legitimate recycling must involve a hazardous secondary material that provides a useful contribution to the recycling process or to a product or intermediate of the recycling process. The hazardous secondary material provides a useful contribution if it:

(i) Contributes valuable ingredients to a product or intermediate; or

(ii) Replaces a catalyst or carrier in the recycling process; or

(iii) Is the source of a valuable constituent recovered in the recycling process; or

(iv) Is recovered or regenerated by the recycling process; or

(v) Is used as an effective substitute for a commercial product.

Is the HSM used as absorbent legitimate recycling? Cont.

[Factor 2] The recycling process must produce a valuable product or intermediate. The product or intermediate is valuable if it is:

(i) Sold to a third party; or

(ii) Used by the recycler or the generator as an effective substitute for a commercial product or as an ingredient or intermediate in an industrial process.

Is the HSM used as absorbent legitimate recycling? Cont.

[Factor 3] The generator and the recycler must manage the hazardous secondary material as a valuable commodity when it is under their control. Where there is an analogous raw material, **the hazardous secondary material must be managed, at a minimum, in a manner consistent with the management of the raw material or in an equally protective manner.** Where there is no analogous raw material, the hazardous secondary material must be contained. Hazardous secondary materials that are released to the environment and are not recovered immediately are discarded.

Is the HSM used as absorbent legitimate recycling? Cont.

[Factor 4] The product of the recycling process does not:

(i) Contain significant concentrations of any hazardous constituents found in Appendix VIII of part 261 that are not found in analogous products; or

(ii) Contain concentrations of any hazardous constituents found in Appendix VIII of part 261 at levels that are significantly elevated from those found in analogous products; or

(iii) Exhibit a hazardous characteristic (as defined in part 261 subpart C) that analogous products do not exhibit.

Is the HSM used as absorbent legitimate recycling? Cont.

Factor 4 continued

(2) In making a determination that a hazardous secondary material is legitimately recycled, persons must evaluate all factors and consider legitimacy as a whole. If, after careful evaluation of these considerations, the factor in this paragraph is not met, then this fact may be an indication that the material is not legitimately recycled. However, the factor in this paragraph does not have to be met for the recycling to be considered legitimate. In evaluating the extent to which this factor is met and in determining whether a process that does not meet this factor is still legitimate, **persons can consider exposure from toxics in the product, the bioavailability of the toxics in the product, and other relevant considerations.**

What recycling exclusion applies to the HSM #1?

Appendix C: Recycling Exclusions and Exemptions

		(23) (See Appendix M), and 40 CFR 261.4(a)(27) (See Appendix N).
40 CFR 261.2(e)	Use/Reuse	See Appendix G.
40 CFR 261.4(a)(6)	Pulping liquors	Pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process are not solid waste, unless accumulated speculatively (See Appendix B).
40 CFR 261.4(a)(7)	Spent sulfuric acid	Spent sulfuric acid used to produce virgin sulfuric acid is not a solid waste provided it is not accumulated speculatively (See Appendix B). Spent sulfuric acid used to produce virgin sulfuric acid per 261.4(a)(7) is not a solid waste, regardless of how the facility subsequently utilizes the virgin sulfuric acid. Virgin sulfuric acid incorporated into a fertilizer is not waste-derived and is not regulated when applied to the land. (RO 14713) (RO 14348)

Is the use of the HSM as absorbent use/reuse or reclamation?

Appendix G – Use/Reuse

40 CFR 261.2(e) is the section of the regulations that explains when a hazardous secondary material that is used, reused, or returned to the original process is a solid waste, as summarized below.

With certain exceptions listed below, a material is not a solid waste if it is:

- Used or reused as an ingredient in an industrial process to make a product, provided the material is not being reclaimed; (40 CFR 261.2(e)(1)(i);
- Used or reused as an effective substitute for a commercial product; (40 CFR 261.2(e)(1)(ii); or
- Returned to the original process from which it is generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials.
    - In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land.
    - In cases where the material is generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph. (40 CFR 261.2(e)(1)(iii)

Is the use of the HSM as absorbent use/reuse or reclamation? (cont'd)

Exceptions - The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process:

- Materials used in a manner constituting disposal, or used to produce products that are applied to the land; (40 CFR 261.2(e)(2)(i));
- Materials burned for energy recovery, used to produce a fuel, or contained in fuels (40 CFR 261.2(e)(2)(ii));
- Materials accumulated speculatively (40 CFR 261.2(e)(2)(iii)); or
- Inherently waste-like materials (40 CFR 261.2(e)(2)(iv)).

As long as the absorbant is not being speculatively accumulated, none of these exceptions would apply.

Initial Conclusions

- Initial conclusions/more information needed:
  - Need more information to determine if it is legitimate recycling and not speculatively accumulated.
  - What questions would you need to ask to determine if the HSM is being accumulated speculatively?
  - Assuming the use of the HSM as an absorbent is legitimate and recycled in a timely manner, then this use could fall under the use/reuse exclusion in 40 CFR 261.2(e).

Evaluation of HSM #2 (Sent off site where a portion is used as absorbent and the rest is burned on site in a furnace)

<table>
<tr><th colspan="3">Hazardous Secondary Material (HSM) Recycling Checklist</th></tr>
<tr><td colspan="3">Note: For any question where the answer is unknown, make a note in the checklist below, list the information needed to answer that question in the attached form, and then continue to the next question.</td></tr>
<tr><td colspan="3">1. Description of the HSM, including what waste code(s) would apply if it is discarded.

Spent paint blast media contaminated with TC metals (likely D007/8) is sent off site to Facility B.</td></tr>
<tr><td colspan="3">2. Description of the recycling process, including how the HSM is managed during storage prior to recycling.

Some of the HSM is used as absorbent and the rest is sent to the on-site furnace as a fuel.</td></tr>
<tr><td rowspan="2">3. Accumulation start date:

Unknown</td><td colspan="2">4. If accumulation start date is > 1 year ago</td></tr>
<tr><td>a. The quantity of HSM stored onsite on January 1 of the <u>previous</u> calendar year.</td><td>b. The quantity of HSM stored onsite on January 1 of the <u>current</u> calendar year.</td></tr>
</table>

Is the use of the HSM #2 as absorbent at Facility B still excluded under the use/reuse exclusion?

Exceptions - The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process:

- Materials used in a manner constituting disposal, or used to produce products that are applied to the land; (40 CFR 261.2(e)(2)(i));
- Materials burned for energy recovery, used to produce a fuel, or contained in fuels (40 CFR 261.2(e)(2)(ii));
- Materials accumulated speculatively (40 CFR 261.2(e)(2)(iii)); or
- Inherently waste-like materials (40 CFR 261.2(e)(2)(iv)).

Since some of the HSM is being sent to be burned in an on-site furnace as a fuel, the HSM is not eligible for the use/reuse exclusion.

Is the HSM burned on site in a furnace legitimate recycling?

Appendix A – Legitimate Recycling

40 CFR 260.43

The regulatory language from the 2018 revisions to the definition of legitimate recycling follows. The legitimate recycling regulations apply to all hazardous secondary materials regulated under the recycling exclusions and exemptions of RCRA, including recycling exclusions from the definition of solid waste in 40 CFR 261.2 and exemptions from permitting for recyclable materials in 40 CFR 264.1(g)(2). In addition, hazardous secondary materials that are sham recycled because the recycling is not legitimate are solid waste and are not exempt per 40 CFR 261.2(g).

There are four factors to the legitimate recycling definition, as outlined in the regulations below.

§260.43 Legitimate recycling of hazardous secondary materials

(a) Recycling of hazardous secondary materials for the purpose of the exclusions or exemptions from the hazardous waste regulations must be legitimate. Hazardous secondary material that is not legitimately recycled is discarded material and is a solid waste. In determining if their recycling is legitimate, persons must address all the requirements of this paragraph and must consider the requirements of paragraph (b) of this section.

How is HSM #2 sent to furnace regulated?

8. Regulatory citation for the specific HSM recycling solid waste exclusion, variance or non-waste determination being used (See Appendix C): N/A If UNKNOWN or NOT APPLICABLE, skip to #10
9. Does the HSM recycling comply with all the conditions of the exclusion? (See Appendix C) YES/NO If YES, then the HSM is not regulated as a hazardous waste per the specific exclusion. If NO, then the HSM is regulated as a hazardous waste.
10. Does recycling involve use constituting disposal? (See Appendix D) YES/NO If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(1) and regulated under 40 CFR part 266 Subpart C If NO, continue to 11.
11. Does recycling involve burning for energy recovery? (See Appendix E) YES/NO If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(2). If NO, continue to 12.

Is the HSM burned on site in a furnace legitimate recycling (cont.)?

Appendix E – Burning for Energy Recovery

40 CFR 261.2(c)(2) is the regulatory citation for the part of the RCRA definition of solid waste that affects materials burned for energy recovery, as summarized below:

- Materials are solid wastes when they are:

  (A) Burned to recover energy. (40 CFR 261.2(c)(2)(i)(A))

  (B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste). (40 CFR 261.2(c)(2)(i)(B))

- However, commercial chemical products listed in 40 CFR 261.33 are not solid wastes if they are themselves fuels. (40 CFR 261.2(c)(2)(ii))

Combustion units that burn hazardous waste to recover energy are generally regulated under the boiler and industrial furnace rules, found at 40 CFR part 266 subpart H.

Initial Conclusions

- Initial conclusions/more information needed:
  - Because the HSM is burned on site for energy recovery, it would need to be managed as HW until it is put in the unit. Facility B would need to have a RCRA permit to accept the HSM from off site and the unit would need to meet the Boiler and Industrial Furnace (BIF) standards in 40 CFR Part 266, Subpart H.
  - Legitimate recycling still applies and Facility B should be able to show the HSM has fuel value; otherwise, if it's sham recycling, the HSM is being burned solely for destruction and the unit might meet the definition of a RCRA incinerator, not a BIF.
  - Would speculative accumulation apply? Let's take a poll.

Knowledge Check (Poll)

- Would speculative accumulation apply to the spent blast media burned on site as a fuel?
  - Yes.
  - No.
  - Unsure.

Appendix B – Speculative Accumulation

40 CFR 261.1(c)(8)

- A material is "accumulated speculatively" if it is accumulated before being recycled.
- A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that—during the calendar year (commencing on January 1)—the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.
- Materials must be placed in a storage unit with a label indicating the first date that the material began to be accumulated. If placing a label on the storage unit is not practicable, the accumulation period must be documented through an inventory log or other appropriate method.
- In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (*e.g.,* slags from a single smelting process) that is recycled in the same way (*i.e.,* from which the same material is recovered or that is used in the same way).
- Materials accumulating in units that would be exempt from regulation under 40 CFR 261.4(c) are not to be included in making the calculation.
- Materials that are already defined as solid wastes also are not to be included in making the calculation.
- Materials are no longer in this category once they are removed from accumulation for recycling, however.

Scenario 3: Lead From Steel Shot Bridge Blasting Used for Road Base

Most civil works paint projects have moved from sand blasting to steel grit blasting for paint removal of old buildings and structures. In many cases, the old paint being removed from bridges via this method (mixed with the steel shot) would exhibit the toxicity characteristic for lead (above 5.0 mg/L using the Toxicity Characteristic Leaching Procedure) and be classified as D008.

- If the mixture of lead paint and steel shot is recycled into road base, how is the HSM regulated under RCRA?

Evaluation of Scenario 3 (Lead Shot Blast Recycled into Road Base)

<table>
<tr><th colspan="3">Hazardous Secondary Material (HSM) Recycling Checklist</th></tr>
<tr><td colspan="3">Note: For any question where the answer is unknown, make a note in the checklist below, list the information needed to answer that question in the attached form, and then continue to the next question.</td></tr>
<tr><td colspan="3">1. Description of the HSM, including what waste code(s) would apply if it is discarded.

Steel shot contaminated with lead paint (D008)</td></tr>
<tr><td colspan="3">2. Description of the recycling process, including how the HSM is managed during storage prior to recycling.

Steel shot contaminated with lead is collected near the bridge/structure and recycled into road base.</td></tr>
<tr><td rowspan="2">3. Accumulation start date:

Unknown</td><td colspan="2">4. If accumulation start date is > 1 year ago</td></tr>
<tr><td>a. The quantity of HSM stored onsite on January 1 of the <u>previous</u> calendar year.</td><td>b. The quantity of HSM stored onsite on January 1 of the <u>current</u> calendar year.</td></tr>
</table>

Evaluation of Scenario 3 (Lead Shot Blast Recycled into Road Base)

5. Description of the recycled product(s) and where they are sold and/or used by the generator. (Note: If the HSM is used directly without processing, the HSM would be considered the product in this analysis.) Authority to request information to document that a material is not a solid waste is found in 40 CFR 261.2(f). See also Appendix K. **Steel shot contaminated with lead is recycled into road base.**
6. Based on the above information, does the recycling meet the definition of legitimate recycling in 40 CFR 260.43? (See Appendix A) YES/NO **Unknown** If NO, then the HSM is a solid and hazardous waste per 40 CFR 261.2(g). Because the recycling is not legitimate, processing of the hazardous waste is not considered an exempt recycling process under 40 CFR 261.6(c) and (d) and requires a RCRA treatment permit. If YES, continue to 7.
7. Based on the above information, is the HSM subject to speculative accumulation limits, and is it being speculatively accumulated as defined in 40 CFR 261.1(c)(8)? (See Appendix B) YES/NO **Unknown** If YES, then the HSM is a solid and hazardous waste per 40 CFR 261.2(c)(4). If NO, continue to 8.

Evaluation of Scenario 3 (Lead Shot Blast Recycled into Road Base)

8. Regulatory citation for the specific HSM recycling solid waste exclusion, variance or non-waste determination being used (See Appendix C): N/A If UNKNOWN or NOT APPLICABLE, skip to #10
9. Does the HSM recycling comply with <u>all</u> the conditions of the exclusion? (See Appendix C) YES/NO N/A If YES, then the HSM is not regulated as a hazardous waste per the specific exclusion. If NO, then the HSM is regulated as a hazardous waste.

Appendix A – Legitimate Recycling

40 CFR 260.43

The regulatory language from the 2018 revisions to the definition of legitimate recycling follows. The legitimate recycling regulations apply to all hazardous secondary materials regulated under the recycling exclusions and exemptions of RCRA, including recycling exclusions from the definition of solid waste in 40 CFR 261.2 and exemptions from permitting for recyclable materials in 40 CFR 264.1(g)(2). In addition, hazardous secondary materials that are sham recycled because the recycling is not legitimate are solid waste and are not exempt per 40 CFR 261.2(g).

There are four factors to the legitimate recycling definition, as outlined in the regulations below.

§260.43 Legitimate recycling of hazardous secondary materials

(a) Recycling of hazardous secondary materials for the purpose of the exclusions or exemptions from the hazardous waste regulations must be legitimate. Hazardous secondary material that is not legitimately recycled is discarded material and is a solid waste. In determining if their recycling is legitimate, persons must address all the requirements of this paragraph and must consider the requirements of paragraph (b) of this section.

[Factor 1]

(1) Legitimate recycling must involve a hazardous secondary material that provides a useful contribution to the recycling process or to a product or intermediate of the recycling process. The hazardous secondary material provides a useful contribution if it:

(i) Contributes valuable ingredients to a product or intermediate; or

(ii) Replaces a catalyst or carrier in the recycling process; or

(iii) Is the source of a valuable constituent recovered in the recycling process; or

(iv) Is recovered or regenerated by the recycling process; or

(v) Is used as an effective substitute for a commercial product.

Unknown

Appendix A – Legitimate Recycling

40 CFR 260.43

[Factor 2]

(2) The recycling process must produce a valuable product or intermediate. The product or intermediate is valuable if it is:

(i) Sold to a third party; or

(ii) Used by the recycler or the generator as an effective substitute for a commercial product or as an ingredient or intermediate in an industrial process.

[Factor 3]

(3) The generator and the recycler must manage the hazardous secondary material as a valuable commodity when it is under their control. Where there is an analogous raw material, the hazardous secondary material must be managed, at a minimum, in a manner consistent with the management of the raw material or in an equally protective manner. Where there is no analogous raw material, the hazardous secondary material must be contained. Hazardous secondary materials that are released to the environment and are not recovered immediately are discarded.

Unknown

(b) The following factor must be considered in making a determination as to the overall legitimacy of a specific recycling activity.

Appendix A – Legitimate Recycling

40 CFR 260.43

[Factor 4]

(1) The product of the recycling process does not:

(i) Contain significant concentrations of any hazardous constituents found in Appendix VIII of part 261 that are not found in analogous products; or

Unknown

(ii) Contain concentrations of any hazardous constituents found in Appendix VIII of part 261 at levels that are significantly elevated from those found in analogous products; or

(iii) Exhibit a hazardous characteristic (as defined in part 261 subpart C) that analogous products do not exhibit.

(2) In making a determination that a hazardous secondary material is legitimately recycled, persons must evaluate all factors and consider legitimacy as a whole. If, after careful evaluation of these considerations, the factor in this paragraph is not met, then this fact may be an indication that the material is not legitimately recycled. However, the factor in this paragraph does not have to be met for the recycling to be considered legitimate. In evaluating the extent to which this factor is met and in determining whether a process that does not meet this factor is still legitimate, persons can consider exposure from toxics in the product, the bioavailability of the toxics in the product, and other relevant considerations.

Appendix D – Use Constituting Disposal (UCD)

40 CFR 261.2(c)(1) is the subparagraph in the definition of solid waste that applies to "use constituting disposal," as explained below:

- Materials (including spent materials, sludges, by-products, commercial chemical products and scrap metal) are solid wastes if they are recycled—or accumulated, stored, or treated before recycling—by being used in a manner constituting disposal.

- Materials are used in a manner constituting disposal if they are:

  (A) Applied to or placed on the land in a manner that constitutes disposal; or

  (B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

- However, commercial chemical products listed in 40 CFR 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

Appendix D – Use Constituting Disposal (UCD)

40 CFR part 266 Subpart C is the subpart that explains the hazardous waste requirements that apply to recyclable materials used in a manner constituting disposal, as summarized below:

- **Generators and transporters** of materials that are used in a manner that constitutes disposal are subject to the applicable hazardous waste generator and transporter requirements of 40 CFR parts 262 and 263, and the notification requirement under section 3010 of RCRA. (40 CFR 266.21) Unknown

- **Owners or operators of facilities that store materials** that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable hazardous waste permitting provisions of subparts A through L of parts 264, 265, and 267, and parts 270 and 124 of this chapter and the notification requirement under section 3010 of RCRA. (40 CFR 266.22) Unknown

- **Owners or operators of facilities that use recyclable materials** in a manner that constitutes disposal are regulated under all applicable provisions of subparts A through N of parts 124, 264, 265, 268, and 270 of this chapter and the notification requirement under section 3010 of RCRA. (40 CFR 266.23 (a)) Unknown

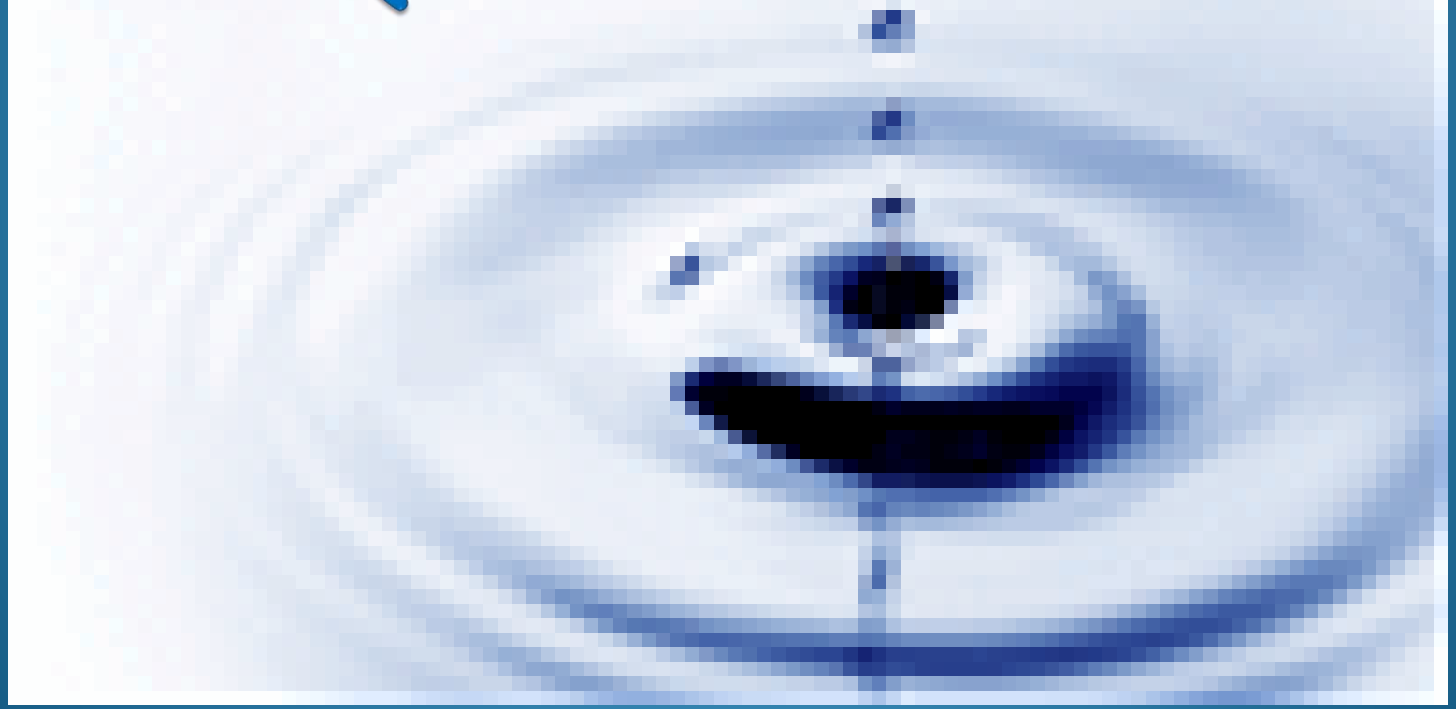
Appendix D – Use Constituting Disposal (UCD)

- These requirements do not apply to products which contain recyclable materials, and are used in or on the land, and meet the requirements of **40 CFR 266.20(b)**, which says:
  - **Products produced for the general public's use** that are used in a manner that constitutes disposal and that contain recyclable materials are not subject to regulation if:
    - The recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means; and **Unknown**
    - Such products meet the applicable land disposal treatment standards in 40 CFR part 268 subpart D (or applicable prohibition levels in 40 CFR 268.32 of this chapter or RCRA section 3004(d), where no treatment standards have been established) for each recyclable material (*i.e.*, hazardous waste) that they contain; and **Unknown**
    - The recycler complies with 40 CFR 268.7(b)(6) (One-time certification and notification requirements under the land disposal restrictions requirements). **Unknown**

Initial Conclusion: Lead Shot Blast Recycled into Road Base

- Lots of unknowns and red flags—potential for enforcement action
- Inspector may request information on:
  - How long the material has been stored
  - Appendix A
    - Whether the HSM provides a useful contribution to the road base
    - How the HSM is being stored
    - Whether the road base contains significant concentrations of hazardous constituents not usually found in road base
  - Appendix D
    - Whether the generator and transporter are complying with hazardous waste requirements
    - Whether the HSM has gone through a chemical reaction
    - Whether the road base meets the LDRs and underlying hazardous constituents
    - Whether the recycler has notified

FINAL QUESTIONS?



For additional information on Hazardous Secondary Materials recycling/the Definition of Solid Waste, contact:

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