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Revisions to the Definition of Solid Waste Final Rule Compilations: The History of Legitimate Recycling

Materials Recovery and Waste Management Division
Office of Resource Conservation and Recovery
U.S. Environmental Protection Agency

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INTRODUCTION

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About the 2008 DSW Rule

On October 30, 2008, the U.S. Environmental Protection Agency (EPA) published a final rule that streamlines regulation of hazardous secondary materials to encourage beneficial recycling and to help conserve resources. The Revisions to the Definition of Solid Waste (DSW) Final Rule ("DSW rule") amends and clarifies the Resource Conservation and Recovery Act (RCRA) definition of solid waste (40 CFR 261.2). In particular, this rule establishes three self-implementing exclusions to the definition of solid waste for hazardous secondary materials that are reclaimed. One of the exclusions involves hazardous secondary materials that are legitimately reclaimed under the control of the generator (onsite reclamation, reclamation by the same company, and reclamation under certain tolling arrangements). The second exclusion involves hazardous secondary materials that are transferred to another company for reclamation. The last exclusion involves hazardous secondary materials that are exported for reclamation. In addition, the 2008 DSW rule outlines a procedure for case-by-case non-waste determinations.

For more information on the DSW rule, see EPA's DSW Federal Register Notices web page.

About the "Revisions to the Definition of Solid Waste Final Rule Compilations"

The *Revisions to the Definition of Solid Waste Final Rule Compilations* provide easy access for EPA, the states, the regulated community, and the public to important information regarding a number of the provisions in the DSW rule: legitimate recycling, reasonable efforts and the

contained standard. This user-friendly reference tool reduces the need for stakeholders to search through multiple *Federal Register* notices and will improve understanding of each of these three subjects. For each compilation, EPA has incorporated information from relevant preambles, regulations, and other materials. Please note that this reference is designed to be web-based; therefore, the usefulness of the document is maximized when it is viewed on a computer that is connected to the Internet.

This volume of the *Compilations* series provides information about the legitimacy standard under the DSW rule. An abbreviated version of this compilation and compilations addressing the contained standard and the reasonable efforts condition will be available at http://www.epa.gov/epawaste/hazard/dsw/impresource.htm#guide.

This document is not a rulemaking and does not change any of the existing solid or hazardous waste requirements. Any reformatting of regulatory language for the new exclusions is only intended to make the language easier to read. Moreover, EPA's intention is to include only that CFR language that is directly relevant to the legitimate recycling standard. Note: other relevant language to this standard may exist and may not be included in this document; users of this document are responsible for examining all CFR language and other information that may be relevant to the reasonable efforts condition. In addition, we also provide links to the Government Printing Office's Electronic Code of Federal Regulations Web site (e-CFR), which is updated almost daily.

In addition, this reference document presents matters related only to the legitimate recycling standard of the federal definition of solid waste and hazardous waste recycling regulations. Most states are authorized to manage their own solid and hazardous waste regulatory program. Therefore, states may have their own regulations that apply in lieu of the federal regulations. While most state solid and hazardous waste regulations are based on the federal requirements, some states have developed regulations that are more stringent than the federal program. We direct you to the following web site to determine if your state regulatory program is different from the federal program: http://epa.gov/waste/wyl/stateprograms.htm.

For a collection of written materials about other issues related to the definition of solid waste, see the Definition of Solid Waste Compendium. For more information regarding the various regulations applied to facilities generating or managing hazardous waste, see Hazardous Waste Generators: A User Friendly Reference Document.

The *Compilations* series is also available in Microsoft Word format from EPA upon request. For more information on these versions and any other questions or comments concerning this document, please contact EPA's Office of Resource Conservation and Recovery:

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About "The History of Legitimate Recycling" Compilation

Under the 2008 DSW rule, EPA requires hazardous secondary materials being reclaimed under the control of the generator (40 CFR 261.2(a)(2)(ii) and 40 CFR 261.4(a)(23)) or transferred for the purpose of reclamation (40 CFR 261.4(a)(24) and 40 CFR 261.4(a)(25)) to meet the legitimacy standard. Materials must also meet the legitimacy standard to be applicable for a non-waste determination at 40 CFR 260.34. EPA has long articulated the need to distinguish between "legitimate" (i.e., true) recycling and "sham" recycling and has codified legitimacy provisions in the DSW rule. This compilation is designed for users who want to look at the history of legitimate recycling or compare other guidance on legitimate recycling to the requirements in the 2008 final rule. This compilation discusses the following subjects (click a topic below to jump to a section):

This document contains multiple references to the *Federal Register* notices that discuss the legitimacy provision. In order to direct the reader to a precise location in a paper copy of the *Federal Register*, EPA has indicated the column of the *Federal Register* page in which a quote is found in parentheses after the citation's page number (e.g., "73 FR 64701(1), October 30, 2008" indicates the first column of page 64701).

The text in the following sections is taken nearly verbatim from the preamble to the 2008 final rule, the 2003 and 2007 proposals for the DSW final rule, and from final regulatory language. The excerpts presented in this compilation do not necessarily appear in the same order as in the original source. In some cases, we have reformatted passages to improve readability. Where the language in this compilation does not exactly match preamble or regulatory language, we have indicated this by italicizing transitional language and bracketing changes to cited language. Headings and titles may not necessarily appear in cited sources or may be formatted differently from the source material. Sources are indicated below each excerpt. As noted above, any changes to the preamble or regulatory text are for the convenience of the reader and are not to be taken as substitutes for the actual language of the regulations or the preamble.

THE HISTORY OF LEGITIMATE RECYCLING

Purpose of Legitimacy

The 2008 final rule preamble lays out the Agency's position regarding the purpose for requiring the recycling be legitimate:

> As discussed in the October 2003 proposal and the March 2007 supplemental proposal to this rulemaking, the Agency has a long-standing policy that all recycling of hazardous secondary materials must be legitimate, including both excluded recycling and the recycling of regulated hazardous wastes. The legitimacy provision in today's final exclusions and non-waste determinations is designed to distinguish between real recycling activities—legitimate recycling—and "sham" recycling, an activity undertaken by an entity to avoid the requirements of managing a hazardous secondary material as a hazardous waste. Because of the economic advantages in managing hazardous secondary materials as recycled materials rather than as wastes, there is an incentive for some handlers to claim they are recycling when, in fact, they are conducting waste treatment and/or disposal.
>
> **Source:** 73 FR 64701(1), October 30, 2008.

Another section of the 2008 preamble also addresses this point:

> Under the RCRA Subtitle C definition of solid waste, certain hazardous secondary materials, if recycled, are not solid wastes and, therefore, are not subject to RCRA's "cradle to grave" management system. The basic idea behind this principle is that recycling of these materials often closely resembles industrial manufacturing rather than waste management. However, due to economic incentives for managing hazardous secondary materials outside the RCRA regulatory system, there is a potential for some handlers to claim that they are recycling the hazardous secondary materials when, in fact, they are conducting waste treatment and/or disposal. To guard against this, EPA has long articulated the need to distinguish between "legitimate" (i.e., true) recycling and "sham" recycling, beginning with the preamble to the 1985 regulations that discussed the definition of solid waste (50 FR 638, January 4, 1985) and continuing through today's final rule.
>
> **Source:** 73 FR 64670(2), October 30, 2008.

Other FR citations for this topic
The final rule addresses the purpose of legitimacy elsewhere, repeating the points already included above. These can be found at 73 FR 64677(2) and 73 FR 64700(2), October 30, 2008.

The points above are also included in the discussions in the 2003 proposal and the 2007 supplemental proposal on the purpose of the legitimacy provision. These can be found at 68 FR 61582(1), October 28, 2003, and 72 FR 14197(2), March 26, 2007.

Legitimacy in the Final Exclusions

The Agency decided not to codify the legitimacy requirements for existing exclusions, although the Agency emphasized that all hazardous secondary materials recycling and hazardous waste recycling must be legitimate :

> As part of this final rulemaking, EPA has decided to codify in 40 CFR 260.43 the requirement that materials be legitimately recycled as a requirement for the exclusion for hazardous secondary materials that are legitimately reclaimed under the control of the generator (40 CFR 261.2(a)(2)(ii) and 40 CFR 261.4(a)(23)) and as a condition of the exclusion for hazardous secondary materials that are transferred for the purpose of legitimate reclamation (40 CFR 261.4(a)(24) and 40 CFR 261.4(a)(25)). EPA is also requiring that hazardous secondary materials must be legitimately recycled under the final non-waste determinations (40 CFR 260.34) for hazardous secondary materials that are (a) reclaimed in a continuous industrial process and (b) indistinguishable in all relevant aspects from a product or intermediate.
>
> **Source:** 73 FR 64700(1)–(2), October 30, 2008.

Other FR citations for this topic
EPA's final rule is different from the 2003 proposal and 2007 supplemental proposal on the question of what the codified legitimacy provision applies to. The discussions of this in the two proposals can be found at 68 FR 61582(2)–61583(1) and 68 FR 61564(2)–(3), October 28, 2003, and 72 FR 14198(1), March 26, 2007.

Effect on Current Determinations and Exclusions

EPA's final rule preamble addressed whether there would be an effect from its action on current exclusions and regulatory determinations that had already been made:

> EPA is codifying a legitimacy provision in this final rule as part of the final exclusions and non-waste determinations, but stresses that EPA retains its long-

standing policy that all recycling of hazardous secondary materials must be legitimate. If a facility is engaged in sham recycling, this, by definition, is not real recycling and that material is being discarded. The legitimacy policy continues to apply to all hazardous secondary materials that are excluded or exempted from Subtitle C regulation because they are recycled and to recyclable hazardous wastes that remain subject to the hazardous waste regulations. This policy is well-understood throughout the regulated community and among the state implementing agencies.

EPA believes that the four legitimacy factors being codified in 40 CFR 260.43 are substantively the same as the existing legitimacy policy. These factors are a simplification and clarification of the policy statements in the 1989 Lowrance Memo and in various Definition of Solid Waste Federal Register notices.

Nonetheless, to avoid confusion among the regulated community and state and other implementing regulatory agencies about the status of recycling under the existing exclusions, the Agency has decided not to codify the legitimacy factors for existing exclusions and, thus, states and other implementing agencies will continue to apply the existing legitimacy policy to all recycling as they have in the past in order to ensure that recycling is real and not a sham. The legitimacy provisions of the final rule are codified only for the exclusions and non-waste determinations being promulgated today. In developing the codified legitimacy language, we did not intend to raise questions about the status of legitimacy determinations that underlie existing exclusions from the definition of solid waste, or about case-specific determinations that have been made by EPA or the states. Current exclusions and other prior solid waste determinations or variances, including determinations made in letters of interpretation and inspection reports, remain in effect.

A number of commenters raised concerns with the application of the codified legitimacy factors to these existing waste-specific and industry specific exclusions. In particular, as we noted in the October 2003 proposal, EPA has examined in depth a number of waste-specific and industry-specific recycling activities and has promulgated specific regulatory exclusions or provisions that address the legitimacy of these practices in much more specific terms than the general factors being finalized as part of the exclusions and non-waste determination process today. One example is the regulation for zinc fertilizers made from recycled hazardous secondary materials. In the zinc fertilizer regulation, among the requirements established by EPA are specific numerical limits on five heavy metal contaminants and dioxins in the zinc fertilizer product exclusion at 40 CFR 261.4(a)(21). Other examples are shredded circuit boards excluded under 40 CFR 261.4(a)(14), which must be free of mercury switches, mercury relays and nickel-cadmium and lithium batteries, and comparable fuels excluded under 40 CFR 261.4(a)(16), which must meet specific levels for hazardous constituents. The conditions developed for the recycling exclusions in

§261.4(a) were found to be necessary under material-specific rulemakings that determined when the particular hazardous secondary material in question is not a solid waste. When EPA originally made the decision that these materials are not solid waste, the Agency took into account the relevant factors about the hazardous secondary materials, including how the material was managed and what toxic chemicals were present. By limiting the codified legitimacy provision to the exclusions and non-waste determinations in today's final rule, EPA is avoiding any implication that we are revisiting these determinations.

However, at the same time, these material-specific exclusions from the definition of solid waste do not negate the basic requirement that the hazardous secondary material must be "legitimately" recycled. Recycling that is not legitimate is not recycling at all, but rather "sham recycling"—discard in the guise of recycling.

For example, under EPA's historic guidance, particularly questions (1) and (3) in OSWER Directive 9441.1989(19), the "Lowrance Memo," a facility could not plausibly claim the zinc fertilizer product exclusion at 40 CFR 261.4(a)(21) for a hazardous secondary material that contained absolutely no or minimal levels of zinc, even if all the conditions of the zinc fertilizer exclusion were met. The exclusion was developed to encourage legitimate recycling of zinc-containing hazardous secondary materials, not to allow any hazardous waste to be discarded to purported fertilizer in the name of recycling when the hazardous secondary material provided no recognizable benefit to the product.

Similarly, if a facility accepted zinc-containing hazardous waste, claiming to make zinc fertilizer, but failed to produce a product that was actually sold or was otherwise valuable, such a process would not be legitimate recycling (under question (4) of the Lowrance Memo in the historic legitimacy guidance), even if the management conditions or the constituent levels in the zinc fertilizer exclusion were met. The consequences of the latter example are illustrated in one of the damage cases in the environmental problems study. A facility whose primary business was mixing electric arc furnace dust (K061) with agricultural lime for sale as a micronutrient lost its customers and could not sell its product. However, the facility continued to accept EPA Hazardous Waste K061, and, in approximately seven months, the facility had accepted over 60,000 tons of this hazardous waste and stored it on the ground in piles up to 30 feet high, with no prospect of it being used to produce a product and, thus, legitimately recycled. While the initial recycling of the K061 hazardous waste was legitimate, when the facility failed to produce a product that was actually sold, the K061 could no longer be considered legitimately recycled.

In summary, all hazardous secondary materials recycling and hazardous waste recycling, whether such recycling remains under hazardous waste regulations or is excluded from the definition of solid waste, must be legitimate. This has been our long-standing policy and it is well understood throughout the regulated

community and the implementing state regulatory agencies. In order to be clear that the legitimacy provision codified at 40 CFR 260.43 under today's final rule would not affect how the current legitimacy policy applies to recycling under existing exclusions, the legitimacy provision at 40 CFR 260.43 is explicitly designated as applying only to the exclusions and non-waste determinations being finalized in today's rule.

Source: 73 FR 64707(3)–64708(3), October 30, 2008.

EPA also addresses the effect of the rule on current determinations and other exclusions in the preamble of the final rule where it discusses responses to public comments:

In the March 2007 supplemental proposal, EPA stated its opinion that the concept of legitimate recycling originally proposed in October 2003 is not substantively different from our longstanding policy, as articulated in the 1989 Lowrance Memo and subsequent preambles. We stated that we were simply reorganizing, streamlining, and clarifying the existing legitimacy principles. Thus, we stated in the March 2007 supplemental proposal that we believe that the regulatory definition of legitimate recycling, when applied to specific recycling scenarios, would result in determinations that were consistent with EPA's earlier policy. We went on to say that we did not believe the regulated community or implementing agencies would need to revisit previous legitimacy determinations. However, we did request examples of determinations which could be impacted by the codification.

Comments: relationships with existing determinations

Commenters expressed concern that, in spite of EPA's intentions, the codification could prompt implementing agencies to revisit past legitimacy determinations. In addition, comments on the October 2003 proposed rule suggested that implementing agencies could interpret the proposed regulatory text as meaning that a recycling activity must satisfy all four of the factors to be considered legitimate. Several commenters on the March 2007 supplemental proposal stated that legitimacy should not apply to the existing recycling exclusions in the current regulations and others were concerned that codification may lead implementing agencies to consider only the four factors and not consider other key information about the recycling activity.

EPA's response: relationships with existing determinations

Regarding the existing exclusions in the regulations, EPA acknowledges that, in establishing a specific exclusion, we have already determined in the rulemaking record that the specific recycling practice is excluded from the definition of solid waste provided all the conditions of the rule are met. However, the Agency has always enforced its rules on the basis that any recycling must be legitimate (See

U.S. v. Self, 2 F. 3d 1071, 1079 (10th Cir. 1993); *U.S. v Marine Shale Processors*, 81 F. 3d 1361, 1366 (5th Cir. 1996): *Marine Shale Processors v. EPA*, 81 F. 3d 1371, 1381-83 (5th Cir. 1996)). This is meant to prevent a company from claiming to be operating under an existing exclusion and simply using that as a way to avoid full RCRA Subtitle C regulation.

However, to avoid confusion among the regulated community and state and other implementing agencies about the status of recycling under existing exclusions, we have decided that the focus of this rule should be the specific changes it is making to the definition of solid waste in the form of the exclusions and non-waste determinations finalized today. Thus, the legitimacy factors codified in 40 CFR 260.43 only apply to the exclusions and non-waste determination process being finalized in this rule and we do not expect implementing agencies to revisit past legitimacy determinations based on this final rule preamble language.

Also, it should be noted that the regulatory language does not preclude other considerations when looking at the codified factors for making legitimacy determinations. We recognize that additional information about the recycling activity could be helpful and could be used when assessing the four legitimacy factors and in making a determination about whether a specific recycling activity is legitimate. In fact, we encourage the regulated community and implementing agencies to use any and all information about the recycling process to come to an informed decision on the legitimacy of a hazardous secondary material recycling operation. However, given the public comment on the October 2003 proposed rule and the March 2007 supplemental proposal, no other factors have been identified and we believe that the four legitimacy factors codified in this rule include the relevant principles of legitimate recycling for the purposes of the exclusions and non-waste determinations being finalized today.

Source: 73 FR 64742(3)–64743(2), October 30, 2008.

Other FR citations for this topic
EPA briefly states its position on the legitimacy policy and previous determinations and refers to the longer discussion included in this document at 73 FR 64700 (2), October 30, 2008.

In several places in the 2003 proposal and the 2007 supplemental proposal EPA stated that it did "not anticipate the need for overseeing agencies to revisit previous legitimacy determinations if the proposed criteria are finalized" for all exclusions, discussed this analysis, and asked for comments. These discussions can be found at:

- 2003 Proposal, October 28, 2003: 68 FR 61582(1), 61582(3), 61583(2)–(3)
- 2007 Supplemental Proposal, March 26, 2007: 14198(1)–(2)

Codification of Legitimacy

EPA's decision on codification of the legitimacy in the final rule was as follows:

> [Add] legitimacy as a condition of the exclusions and the non-waste determinations in this rule, but [not to] finalize the language proposed in 261.2(g) for all recycling. The new legitimacy provision can be found at 260.43.
>
> **Source:** 73 FR 64675(3), October 30, 2008.

Other sections of the final rule more fully describe the Agency's decision on codification of legitimacy:

> In today's final rule, we are codifying the factors to be used in determining whether recycling under the provisions finalized in this rule is legitimate, applying the structure basically as proposed in March 2007 (proposed at 40 CFR 261.2(g)). The legitimacy provision is finalized in 40 CFR 260.43.
>
> **Source:** 73 FR 64670(2), October 30, 2008.
>
> As part of this final rulemaking, EPA has decided to codify in 40 CFR 260.43 the requirement that materials be legitimately recycled as a requirement for the exclusion for hazardous secondary materials that are legitimately reclaimed under the control of the generator (40 CFR 261.2(a)(2)(ii) and 40 CFR 261.4(a)(23)) and as a condition of the exclusion for hazardous secondary materials that are transferred for the purpose of legitimate reclamation (40 CFR 261.4(a)(24) and 40 CFR 261.4(a)(25)). EPA is also requiring that hazardous secondary materials must be legitimately recycled under the final non-waste determinations (40 CFR 260.34) for hazardous secondary materials that are (a) reclaimed in a continuous industrial process and (b) indistinguishable in all relevant aspects from a product or intermediate.
>
> **Source:** 73 FR 64700(1)–64700(2), October 30, 2008.

The 2003 proposal of the rule made several statements about the Agency's intent to codify the legitimacy:

> The proposed criteria for legitimate recycling codify existing principles, without increasing regulation. This proposal is not intended to bring new wastes into the RCRA Subtitle C regulatory system. This proposal is not intended to bring new wastes into the RCRA Subtitle C regulatory system.

By removing hazardous waste regulatory controls over certain recycling practices, and by providing more explicit criteria for determining the legitimacy of recycling practices in general, EPA expects that this proposed rule will encourage safe, beneficial recycling of hazardous secondary materials by industry.

Source: 68 FR 61560(2), October 28, 2003.

In recent years a wide range of RCRA stakeholders, including many state agency officials, have expressed concern that the statements in the preamble and current guidance on legitimate recycling do not provide sufficient clarity or predictability for making recycling legitimacy determinations. Because of these concerns, many stakeholders have encouraged EPA to revise and clarify the current legitimacy criteria, and to promulgate them in the regulations.

EPA believes that today's proposed rulemaking is a good opportunity to establish RCRA's recycling legitimacy criteria in regulations, and at the same time to make clarifying revisions to them. Accordingly, today's proposal includes specific regulatory provisions for distinguishing legitimate recycling from sham recycling practices, which reorganize and clarify the existing criteria that have been articulated in preamble statements and guidance. Today's proposal to codify recycling legitimacy criteria is not based on any direction from the D.C. Circuit Court.

Today's proposed legitimacy criteria are intended primarily to clarify and simplify the same basic legitimacy principles that have been in use since 1985. We believe that the new codified regulatory criteria will, when applied to actual recycling scenarios, result in determinations that are consistent with those based on current guidance. As such, we do not anticipate the need for overseeing agencies to revisit previous legitimacy determinations if the proposed criteria are finalized.

Source: 68 FR 61582(1), October 28, 2003.

Today's proposal is the Agency's first attempt to codify in regulatory form general, broadly applicable principles for making recycling legitimacy determinations.

Source: 68 FR 61582(3), October 28, 2003.

The final rule preamble also addresses some of the comments the Agency received on the question of whether to codify legitimacy:

EPA's October 2003 proposal to codify the legitimacy criteria was in response to the comments that have been made over the years by both industry and states that the existing legitimacy guidance is useful, but somewhat hard for members of the

regulated community to know about because it could only be found in preamble discussions and guidance. The March 2007 supplemental proposal made some adjustments to the October 2003 proposal, including a change from the term "criteria" to "factors," but left intact the general intention to codify those legitimacy factors for all recycling. As expected, the Agency received public comments from both state environmental agencies and from industry on our approach.

Comments: codification of legitimacy

State commenters were unanimously in favor of codifying the legitimacy factors in the regulations. In response to the October 2003 proposal, twenty-three states expressed their support for codification. In comments to the March 2007 supplemental proposal, two additional states supported codification of the proposed factors. All twelve states that commented on legitimacy in both proposals expressed their strong support for codification in both their 2003 and 2007 comments.

States have long advocated for establishing regulations that specifically address the legitimacy of recycling. In response to EPA's proposals, many states commented that they are currently relying on the concept of legitimacy as laid out in definition of solid waste preambles and in the 1989 "Lowrance Memo" guidance because they are the best sources of information that can be used in evaluating a recycling operation. Codification is a priority to the states because, as a regulation, the requirement for recycling to be legitimate would be better known and understood by the regulated community and it would be easier for states to monitor compliance. One commenter stated that it makes more sense to implement a regulation than a collection of statements found in guidance.

Industry commenters, on the other hand, were split on the issue of codification. Including comments from both the October 2003 proposal and the March 2007 supplemental proposal, just over half of the industry commenters opposed codification of the legitimacy factors, although they tended to express support in their comments for the purpose and goals of the legitimacy factors and agree with the goal of identifying which processes are true recycling and which are sham recycling. Several industry commenters stated that the guidance is working well already and many of those opposed to codification expressed concern that if the legitimacy factors were codified, they would lose the flexibility in the guidance that allows the factors to apply to many varied industrial sectors and processes, automatically becoming more stringent. Another concern expressed by the commenters regarding codification of the legitimacy factors was that, in their view, the terms used in the regulatory text are too ambiguous and should be clarified before they can be part of a regulation. These commenters argue that codification of the factors without addressing these concerns would automatically

be more stringent than having guidance, thereby inappropriately inhibiting legitimate recycling.

About one-third of the forty-two industry commenters on the issue of whether or not to codify backed the codification of the legitimacy factors. Many of these commenters represented segments of the waste management industry, but a number of representatives of generating industries also made this comment. The industry commenters that supported codification stated that they did so because it would provide clarity, consistency, and predictability by making it more apparent which hazardous secondary materials and processes are covered by the recycling exclusions. One commenter noted the value in the legitimacy factors going through the notice and comment process since they are being used by the states in implementation of the regulations and another expressed an expectation that the codified requirements would lead to more uniformity in interpretation between implementing agencies. Several of these commenters also stated that they also valued the flexibility of the structure of the Lowrance memo and stressed the importance of the codified legitimacy factors retaining that flexibility.

In addition, several more industry commenters stated that they saw the value in codifying the legitimacy factors and could support its codification under certain conditions. The suggested conditions included the codification of only the two proposed mandatory factors, codification of the factors in conjunction with finalizing what we called the "broader exclusion" option in the October 2003 proposal, and codification of legitimacy factors to be used only with the definition of solid waste exclusions that were included within the supplemental proposal in March 2007.

EPA's response: codification of legitimacy

In today's final rule, EPA is codifying the legitimacy factors as a requirement for today's exclusions and for the non-waste determinations, but not for all recycling.

To avoid confusion among the regulated community, as well as the state and other implementing regulatory agencies about the status of recycling under the existing exclusions, EPA is not codifying the legitimacy factors as specifically applicable to existing exemptions in today's final rule. In developing the codified legitimacy language, we did not intend to raise questions about the status of legitimacy determinations that underlie existing exclusions from the definition of solid waste, or about case-specific determinations that have been made by EPA or the states. Current exclusions and other prior solid waste determinations or variances, including determinations made in letters of interpretation and inspection reports, remain in effect.

In codifying the legitimacy provisions for the exclusions and non-waste determinations in today's final rule, EPA has taken into consideration all the

comments it received in response to the October 2003 proposal and March 2007 supplemental proposal on the structure of the legitimacy factors, as well as on the individual factors themselves and has made the appropriate changes to the factors to address those comments.

In response to a general comment, EPA is aware of the comments that each of the terms in the legitimacy regulations should be more clearly defined and the suggestions for specific tests for each of the factors. We are, however, seeking a balance between having a set of specific tests and having the flexibility needed for a requirement that applies to the range of recycling practices in various industries in different industrial or commercial settings.

Therefore, in response to comments, the discussion of legitimacy in today's preamble describes more clearly what EPA means by the terms we use in the regulatory text for this element of the final rule. The Agency also is providing more examples of both legitimate and sham recycling than were included in the discussions of the individual factors in the preambles for the October 2003 proposal and March 2007 supplemental proposal to illustrate the meaning of the legitimacy factors. The Agency also is stressing the importance of case-by-case determinations that are based on the facts of a specific situation.

Source: 73 FR 64741(3)–64742(3), October 30, 2008.

Other FR citations for this topic
EPA briefly states that it is still proposing to codify legitimacy and mentions the changes to its 2003 proposal at 72 FR 14174(2)–14174(3), March 26, 2007.

EPA describes its plan to codify legitimacy and provides a summary in the 2007 proposal of the comments received up to that point on the questions of whether to codify the legitimacy factors. This summary is similar to the response to comment included above and can be found at 72 FR 14198(1)–14198(3), March 26, 2007.

EPA's codification of the legitimacy factors is also mentioned in the final rule at 73 FR 64681(3) & 64685(1), October 30, 2008, but no details other than the basic requirements are included in the discussion.

Final Legitimacy Structure

In the final rule, EPA promulgated a structure for the legitimacy factors with two mandatory factors and two factors that must be considered:

In this action, EPA is finalizing requirements that reclamation being undertaken under the exclusions at §261.2(a)(2)(ii), §261.4(a)(23), (24), and (25) and the non-waste determinations at §260.30(d) and (e) be legitimate. These requirements can

be found in the final regulatory text at §260.34(b), §261.2(a)(2)(ii), §261.4(a)(23)(v), and §261.4(a)(24)(iv). Each of these provisions refers to §260.43, where the full requirements for determining the legitimacy of the reclamation operation can be found.

The design of legitimacy in the final rule has two parts. The first is a requirement that hazardous secondary materials being recycled provide a useful contribution to the recycling process or to the product of the recycling process and a requirement that the product of the recycling process is valuable. These two legitimacy factors make up the core of legitimacy and, therefore, a process that does not conform to them cannot be a legitimate recycling process, but would be considered sham recycling.

The second part of legitimacy is two factors that must be considered when a recycler is making a legitimacy determination. EPA believes that these two factors are important in determining legitimacy, but has not made them factors that must be met because the Agency knows that there will be some situations in which a legitimate recycling process does not conform to one or both of these two factors, yet the reclamation activity would still be considered legitimate. EPA does not believe that this will be a common occurrence, but in recognition that legitimate recycling may occur in these situations, EPA has made management of the hazardous secondary materials and the presence of hazardous constituents in the product of the recycling process to be factors that must be considered in the overall legitimacy determination, but not factors that must always be met.

Source: 73 FR 64701(1)–64701(2), October 30, 2008.

Other FR citations for this topic
Public comments on the revised structure and the option of making all factors mandatory as well as the Agency's responses can be found at 73 FR 64743(2)–64744(2), October 30, 2008.

The structure of the legitimacy requirements is also discussed in the final rule in the context of a recycler being able to demonstrate how it made a legitimacy determination at 73 FR 64701(2)–64701(3), October 30, 2008.

The structure of the legitimacy requirements is discussed in the 2007 proposal of the rule at 72 FR 14198(3)–14200(1), March 26, 2007.

Factor 1—Useful Contribution

The preamble to the final rule provides the regulatory text of Factor 1 as well as a description of the factor:

Legitimate recycling must involve a hazardous secondary material that provides a useful contribution to the recycling process or to a product 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" (40 CFR 260.43(b)(1)).

This factor, one of the two core legitimacy factors, expresses the principle that hazardous secondary materials should contribute value to the recycling process. This factor is an essential element to legitimate recycling because real recycling is not occurring if the hazardous secondary materials being added or recovered do not add anything to the process. This factor is intended to prevent the practice of adding to or recovering hazardous secondary materials from a manufacturing operation simply as a means of disposing of them, or recovering only small amounts of a constituent, which EPA would consider sham recycling.

In response to comments received on this factor asking for more clarification on what useful contribution means, the regulatory text includes an explanation of how useful contribution might be achieved in (i) through (v) of §260.43(b)(1). EPA stresses that the ways in which hazardous secondary materials can add value and be useful in a recycling process are (i) contributing valuable ingredients to a product or intermediate; (ii) replacing a catalyst or carrier in the recycling process; (iii) providing a valuable constituent to be recovered; (iv) being regenerated; or (v) being used as an effective substitute for a commercial product. The preamble to the October 2003 proposed rule gave full descriptions of these five situations (68 FR 61585), but the Agency has also included them in the regulatory text to clarify this factor for the regulated community.

The Agency also wants to restate for clarification that for hazardous secondary materials to meet the useful contribution factor, not every constituent or component of the hazardous secondary material has to make a contribution to the recycling activity. For example, a legitimate recycling operation involving precious metals might not recover all of the components of the hazardous secondary material, but would recover precious metals with sufficient value to consider the recycling process legitimate. In addition, the recycling activity does not have to involve the hazardous component of the hazardous secondary materials if the value of the contribution of the non-hazardous component justifies the recycling activity. One example of this factor from an existing exemption is where hazardous secondary materials containing large amounts of zinc, a non-hazardous component, are recycled into zinc micronutrient fertilizers. In cases where the hazardous component is not being used or recycled, the Agency stresses that the recycler is responsible for the management of any hazardous residuals of the recycling process.

In a situation where more than one hazardous secondary material is used in a single recycling process and the hazardous secondary materials are mixed or blended as a part of the process, each hazardous secondary material would need to satisfy the useful contribution factor. This requirement prevents situations where a worthless hazardous secondary material could be mixed with valuable and useful hazardous secondary materials in an attempt to disguise and dispose of it. In addition, a situation in which hazardous secondary materials that can be useful to a process are added to that process in much greater amounts than are needed to make the end-product or to otherwise provide its useful contribution would also be sham recycling.

Another way the usefulness of the hazardous secondary material's contribution could be demonstrated is by looking at the efficiency of the material's use in the recycling process—that is, how much of the constituent in a hazardous secondary material is actually being used. As an example, if there is a constituent in the hazardous secondary material that could add value to the recycling process, but, due to process design, most of it is not being recovered but is being disposed of in the residuals, this would be a possible indicator of sham recycling. However, there are certainly recycling scenarios where a low recovery rate could still be legitimate. For example, under an existing exclusion, if the concentration in a metal-bearing hazardous secondary material is low (2%–4%) and a recycling process was able to recover a large percentage of the target metal, this factor could be met and the recycling may be legitimate (depending on the outcome of the analysis of the other legitimacy factors).

One way to use the efficiency of the recycling process to evaluate legitimacy is to compare the process to typical industry recovery rates from raw materials to determine if the recycling process is reasonably efficient. This method should involve an examination of the overall process, not just a single step of the process. For example, if one step in the process recovers a small percentage of the constituent, but the overall process recovers a much larger percentage, the Agency would consider the overall efficiency of the recycling process in determining whether hazardous secondary materials are providing a useful contribution.

There are various ways in which hazardous secondary materials can be useful to a recycling process and various ways are laid out in this discussion of how a facility might demonstrate conformity with this factor. In addition, we provided a number of different ways a material could contribute to the process in the regulatory text describing this factor. Any one of these would be sufficient to demonstrate that the hazardous secondary material provides a useful contribution. Overall, the Agency considers this factor to be a critical element in determining legitimacy and any recycling process that does not meet this factor cannot be considered legitimate recycling.

Source: 73 FR 64701(3)–64702(3), October 30, 2008.

The final rule also provides a discussion of how the concepts in Factor 1 are related to the concepts in the Lowrance Memo:

Relevant Lowrance Memo Questions

(1) Is the secondary material similar to an analogous raw material or product?

> Is much more of the secondary material used as compared with the analogous raw material/product it replaces? Is only a nominal amount of it used?
>
> Is the secondary material as effective as the raw material or product is replaces?

(3) What is the value of the secondary material?

> Is it listed in industry news letters, trade journals, etc.?
>
> Does the secondary material have economic value comparable to the raw material that normally enters the process?

Discussion

The factor addressing "useful contribution" has been distilled from and clarifies concepts in the Agency's existing policy for legitimate recycling. For example, the preamble to the January 4, 1985, recycling regulations noted that if a hazardous secondary material is "ineffective or only marginally effective for the claimed use, the activity is not recycling but surrogate disposal." Similarly, the January 8, 1988, proposed rule discussed "how much energy or material value each waste contributes to the recycling purpose."

In the 1989 Lowrance Memo, the issue of effectiveness was addressed by the following questions: "Is much more of the secondary material used as compared with the analogous raw material/product it replaces?"; "Is only a nominal amount used?"; and "Is the secondary material as effective as the raw material or product it replaces?" The memo also addressed the value of the secondary material by asking, "Is [the secondary material] listed in industry news letters, trade journals, etc.?" and "Does the secondary material have economic value comparable to the raw material that normally enters the process?"

Factor 1 takes these broad concepts of effectiveness and value and turns them into the requirement that the hazardous secondary material in the process must provide

a "useful contribution" to the recycling process, that is, it must actually be adding something to the process into which they are being put. The factor provides more specifics than the Memo or preamble by providing a list of ways that a hazardous secondary material could provide that useful contribution to the process. EPA requested comment on other ways in which a hazardous secondary material might provide a useful contribution, but did not receive any from commenters.

Source: 73 FR 64708(3)–64708(1), October 30, 2008.

The final rule preamble also addresses some of the comments received by the Agency on Factor 1:

Comments: Factor 1—the hazardous secondary material provides a useful contribution

Factor 1 expresses the fundamental principle that hazardous secondary materials must actually be useful (i.e., contribute positively) to the recycling process and is intended to prevent the practice of incorporating hazardous secondary materials within manufacturing operations simply as a means of disposing of them. The Agency firmly believes that this concept is crucial to the definition of legitimacy and is finalizing it as part of the core definition. This factor, along with the second factor described below, must be met for any recycling activity to be considered legitimate recycling. The regulatory text for this factor is found in 40 CFR 260.43(b)(1).

In general, we received much support for and agreement with the underlying principle of this factor—that the hazardous secondary materials must provide some useful contribution to either the recycling process or the recycled product. Commenters asked for clarification on a number of issues related to this factor, specifically in regard to the October 2003 proposal and how the economics of recycling is connected to this factor and how the economics of recycling should be evaluated. In the March 2007 supplemental proposal, we described how the economics of recycling relates not only to the useful contribution factor but, in fact, to all of the factors of legitimacy and explained our thinking about how evaluating the economics of recycling transactions should be undertaken.

EPA's response: Factor 1—the hazardous secondary material provides a useful contribution

The Agency is today finalizing this factor as part of the core definition of legitimate recycling and as a factor that must be met for the recycling to be considered legitimate under §260.43. We also revised the October 2003 proposal discussion regarding the consideration of economics related to this criterion, and we expanded its consideration beyond just the useful contribution criterion. Today, we are offering further guidance, similar to the March 2007 supplemental

proposal, which explains how economics may be considered in making legitimacy determinations and how it may apply to the mandatory factors and the factors that must be taken into account.

Comments and EPA's response: Factor 1—contribution to the process

EPA also received comments on our statements in the October 2003 proposal that indicated that not every component of a hazardous secondary material does or must contribute to the recycling process or product of the recycling process in order for there to be an overall contribution. In particular, one state agency favored allowing the non-hazardous component of hazardous secondary materials to provide the useful contribution and one industry commenter agreed that not all of the hazardous secondary material would have to contribute for this factor to be met. Another state agency asked us to clarify that the statement "not every component of a hazardous secondary material would necessarily have to contribute to the product or the process to meet this criterion" was applicable only in the context of this factor.

It has been the Agency's longstanding policy that in a legitimacy determination not every constituent or component in a hazardous secondary material would have to contribute to a product of the recycling process or intermediate or to the recycling process in order for there to be an overall contribution and this applies to the provision in §260.43 as well. For example, the use of hazardous secondary materials in zinc fertilizer is considered legitimate recycling when the zinc, a non-hazardous constituent, is the main contribution to the fertilizer. Another example is the use of [cathode-ray tube (CRT)] glass used in copper smelters as a fluxing agent. In this case, the glass provides a useful contribution by facilitating the manufacturing process. Thus, we agree with those commenters who raised questions about this issue and are restating our position here.

Comments and EPA's response: Factor 1—efficiency of the process

Another issue that was discussed in the October 2003 proposal arising in the context of useful contribution was the efficiency of a recycling process in recovering or regenerating the useful component of the hazardous secondary material. One example we used was the recovery of copper from a hazardous secondary material. We stated that where the process was reasonably efficient and recovered all but a small percentage of the copper, it looked like legitimate recycling. However, where a small percentage of copper in the hazardous secondary material is recovered, sham recycling may be indicated. However, we did not discuss recovery rates in the middle range (e.g., 50% of copper recovered from a particular recycling process) and some commenters asked for clarification, including how the factor applies to hazardous secondary materials that are contributing to the recycling process either as a carrier or a catalyst.

The Agency is clarifying in today's preamble and regulatory text that the useful contribution of a hazardous secondary material to the recycling process or product can be demonstrated in a number of ways. We provided a number of different ways such a material could contribute to the process in the preamble to the October 2003 proposed rule (68 FR 61584–61585) and did not mean to imply that the hazardous secondary material would have to meet all of the examples to provide a useful contribution. For example, hazardous secondary materials could provide a useful contribution to a process by serving as a carrier or catalyst and the process efficiency would not factor into the demonstration of this factor in this example.

In general, the regulated community should look to typical industry recovery rates to determine if the recycling recovery rates are reasonably efficient in terms of making a useful contribution to the recycling process or product. In addition, it should be noted that EPA would generally look at the quantity or the rate of recovery of the overall process, not the recovery rate of a single step in the process, when analyzing this factor for legitimacy. For example, if one step in the process recovers a small percentage of the constituent, but the overall process recovers a much larger percentage, the Agency would consider the overall efficiency of the recycling process in determining whether hazardous secondary materials are providing a useful contribution. This assumes that there is enough of the target constituent present in the hazardous secondary materials to contribute meaningfully to the recycling activity.

Comments and EPA's response: Factor 1—residuals

In the discussion of useful contribution in the October 2003 proposal, in the context of process efficiency, we stated that a "pattern of mismanagement of the residues" may be an indicator of sham recycling (68 FR 61584). We received several comments asking us to explain the connection between useful contribution of the hazardous secondary materials and management of residues. Several commenters questioned this statement and disagreed that how a facility managed its residues had any bearing on whether the hazardous secondary materials going into a recycling process were being legitimately recycled.

We agree with the commenters who suggested that the management of residuals from the recycling process is not an indicator of whether the hazardous secondary materials provide a useful contribution and thus is not a factor in determining whether legitimate recycling is occurring. For these reasons, we are making it clear that the management of recycling residuals is not a consideration in making legitimacy determinations. Instead, as part of today's final rule, we are requiring that any residuals that are generated from the recycling process be managed in a manner that is protective of human health and the environment. Specifically, there is a requirement for hazardous secondary material generators to make reasonable efforts to ensure that the hazardous secondary materials are legitimately recycled

and, among other things, that the reclaimer manages the hazardous secondary materials in a manner that is protective of human health and the environment, including how any recycling residuals are managed. Finally, we note that the generation of residuals that are solid wastes are subject to the waste characterization and identification requirements in 40 CFR Part 261 as a newly generated waste.

Source: 73 FR 64745(1)–64746(2), October 30, 2008.

Other FR citations for this topic
The 2003 proposal has a discussion of this factor (called "Criterion 2") at 68 FR 61584(2)–61585(2), October 28, 2003.

A discussion of EPA's decision to separate the discussion of economics in legitimacy out of this factor as proposed in 2003 is in the 2007 supplemental proposal at 72 FR 14200(1), March 26, 2007.

The 2007 supplemental proposal discusses the role of this factor in the structure proposed in that notice at 72 FR 14199(1)–14200(1), March 26, 2007.

A discussion of the definition of terms throughout the final legitimacy factors is at 73 FR 64744(3)–64745(1), October 30, 2008.

Factor 2—Valuable Product or Intermediate

The preamble to the final rule provides the regulatory text of Factor 2 as well as a description of the factor:

> 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" (40 CFR 260.43(b)(2)).
>
> This factor, one of the two core legitimacy factors, expresses the principle that the product or intermediate of the recycling process should be a material of value, either to a third party who buys it from the recycler, or to the generator or recycler itself, who can use it as a substitute for another material that it would otherwise have to buy or obtain for its industrial process. This factor is also an essential element of the concept of legitimate recycling because recycling cannot be occurring if the product or intermediate of the recycling process is not of use to anyone and, therefore, is not a real product. This factor is intended to prevent the practice of running a hazardous secondary material through an industrial process to make something just for the purpose of avoiding the costs of hazardous waste management, rather than for the purpose of using the product or intermediate of the recycling activity. Such a practice would be sham recycling.

Most commenters on the proposed rule for this factor stated that this is a useful way of gauging whether recycling is actually taking place, but requested that the Agency clarify the meaning of the term valuable, as it is used in the regulatory text. EPA is repeating and clarifying today that for the purpose of this factor, a recyclable product may be considered "valuable" if it can be shown to have either economic value or a more intrinsic value to the end user. Evaluations of "valuable" for the purpose of this factor should be done on a case-by-case basis, but one way to demonstrate that the recycling process yields a valuable product would be the documented sale of a product of the recycling process to a third party. Such documentation could be in the form of receipts or contracts and agreements that establish the terms of the sale or transaction. This transaction could include money changing hands or, in other circumstances, may involve trade or barter. A recycler that has not yet arranged for the sale of its product to a third party could establish value by demonstrating that it can replace another product or intermediate that is available in the marketplace. A product of the recycling process may be sold at a loss in some circumstances, but the recycler would have to be prepared to show how the product is clearly valuable to the purchaser.

However, many recycling processes produce outputs that are not sold to another party, but are instead used by the generator or recycler. A product of the recycling process may be used as a feedstock in a manufacturing process, but have no established monetary value in the marketplace. Such recycled products or intermediates would be considered to have intrinsic value, though demonstrating intrinsic value may be less straightforward than demonstrating value for products that are sold in the marketplace. Demonstrations of intrinsic value could involve showing that the product of the recycling process or intermediate replaces an alternative product that would otherwise have to be purchased or could involve a showing that the product of the recycling process or intermediate meets specific product specifications or specific industry standards. Another approach could be to compare the products or intermediates physical and chemical properties or efficacy for certain uses with those of comparable products or intermediates made from raw materials.

Some recycling processes may consist of multiple steps that may occur at separate facilities. In some cases, each processing step will yield a valuable product or intermediate, such as when a metal-bearing hazardous secondary material is processed to reclaim a precious metal and is then put through another process to reclaim a different mineral. When each step in the process yields a valuable product or intermediate that is salable or usable in that form, the recycling activity would conform to this factor.

Like the other factors, this factor should be examined and evaluated on a case-by-case basis looking at the specific facts of a recycling activity. If, for instance, a recycling activity produces a product or intermediate that is used by the recycler

itself, but does not serve any purpose and is just being used so that the product or intermediate appears valuable, that would be an indicator of sham recycling. An example of this would be a recycler that reclaims a hazardous secondary material and then uses that material to make blocks or building materials for which it has no market and then "uses" those building materials to make a warehouse in which it stores the remainder of the building materials that it is unable to sell.

Source: 73 FR 64702(3)–64703(2), October 30, 2008.

The preamble to the final rule also provides a discussion of how the concepts in Factor 2 are related to the concepts in the Lowrance Memo:

Relevant Lowrance Memo Questions

(4) Is there a guaranteed market for the end product?

Is there a contract in place to purchase the "product" ostensibly produced from the hazardous secondary materials?

If the type of recycling is reclamation, is the product used by the reclaimer? The generator? Is there a batch tolling agreement? (Note that since reclaimers are normally TSDFs, assuming they store before reclaiming, reclamation facilities present fewer possibilities of systemic abuse).

Is the reclaimed product a recognized commodity?

Are there industry-recognized quality specifications for the product?

Discussion

Factor 2 distills several of the questions posed by the 1989 legitimacy memo. The memo addressed the value of recycled products sold to third parties by posing the questions, "Is there a guaranteed market for the end product?" and "Is there a contract in place to purchase the "product" ostensibly produced from the hazardous secondary materials?" The memo addressed the value of recycled products used by the recycler or the generator as process ingredients by posing the questions, "Is the product used by the (recycler)? The generator? Is there a batch tolling agreement?" The "usefulness" of a recycled material was addressed by posing the questions, "Is the (recycled) product a recognized commodity?" and "Are there industry-recognized quality specifications for the product?"

The language of the factors in the legitimacy provision in the final rule reflects these concepts in a concrete manner by, for example, making it clear that the indicator of legitimacy is that a recycling process results in a valuable product or

intermediate and that 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."
The Lowrance Memo posed additional questions aimed at distinguishing recycling operations that involve direct use or reuse of secondary materials from recycling operations that involve reclamation. These concepts, however, are not particularly relevant to distinguishing legitimate from sham recycling and are not generally used by implementing agencies in legitimacy analyses, so we therefore did not attempt to capture them in the codified regulatory text.

Source: 73 FR 64709(2)–(3), October 30, 2008.

The final rule preamble also addresses some of the comments received by the Agency on Factor 2:

Comments: Factor 2—the recycling process yields a valuable product/intermediate

This factor is intended to capture the fundamental concept that legitimate recycling must produce something of value. For the purposes of evaluating this factor, a product of the recycling process or intermediate would be considered valuable if it can be shown to have either economic value or value that is more intrinsic (i.e., it is useful to the end user, even though it may not be salable as a product or commodity in the open marketplace). The regulatory text for this factor can be found in 40 CFR 260.43(b)(2).

In general, most commenters agreed with the concept that the recycling process must produce something of value. Many commenters also stressed the importance of keeping the concept of "intrinsic" value—that is, a product does not have to be sold to have value. Instead, it can be used as an effective substitute for a commercial product or as a useful ingredient in an industrial process. However, other commenters disagreed, contending that intrinsic value is too subjective to use to determine compliance. One commenter also thought this factor was redundant with the factor that hazardous secondary materials must provide a useful contribution and should be deleted.

Another common concern in the comments was how to evaluate whether the product or intermediate is valuable. Some commenters stressed the importance of evaluating this factor over time, given that markets and prices fluctuate, and others argued that it must be done on a case-by-case basis.

EPA's response: Factor 2—the recycling process yields a valuable product

In general, the Agency agrees with the commenters who stated that a product's value can be either monetary or intrinsic. Clearly, not all valuable products are sold. For example, many legitimate recycling situations exist where the intermediate or product of the recycling process has value and is used on-site, sent off-site to another facility owned by the same company, or even traded between companies. There are a number of already established networks where hazardous secondary materials are exchanged among and across industries. This rule does not interfere with those ongoing exchanges where such materials are being legitimately recycled. One example of such a program is the U.S. Business Council for Sustainable Development's by-product synergy program which has conducted a number of regional pilots in which diverse industries are brought together to facilitate feedstock and by-product exchanges. No money is exchanged in these types of programs.

We are also clarifying in the regulatory text that the product of the recycling process can be either a commercial product or intermediate, as long as it has value to the end user. In addition, we are further clarifying that the regulated community does not need to evaluate each step in the recycling process to determine if the final products or intermediates are valuable. Rather, an individual recycler or generator would look at its final product or intermediate and must be able to demonstrate why it has value.

We understand the concerns of some commenters that intrinsic value is harder to demonstrate than the value of a product of the recycling process that is sold in the open marketplace. While this demonstration is not as straightforward, there are a number of ways the end user can demonstrate the intrinsic value of the recycled intermediate or product. Some examples include showing that the product of the recycling process replaces an alternative product or material that would otherwise have to be purchased or by demonstrating that a product of the recycling process or intermediate meets specific product specifications or established industry standards. Another approach to demonstrating the value of a product of the recycling process or intermediate would be to compare its characteristics (e.g., its physical/chemical properties or its usefulness for certain applications) with comparable products or intermediates made from raw materials.

Finally, we disagree with the commenter who stated that this factor is equivalent to the hazardous secondary material making a useful contribution to a product or intermediate. It is certainly possible for a recycling process to result in the production of a valuable product or intermediate without the hazardous secondary materials added to the process making any contribution whatsoever. For example, this would be the case when hazardous secondary materials are added to the process and all of the hazardous secondary materials, including the hazardous constituents, end up in the residuals, which are discarded, and the materials added to the process provide no benefit whatsoever. This is the essence of sham recycling. A vast majority of the commenters saw the need for both factors and

after exploring the concept of legitimate recycling further, we were unable to find any examples of legitimate recycling that did not meet both of the core factors (i.e., the hazardous secondary material provides a useful contribution and the recycling process produces a product of value), nor did any commenters provide us with such examples. Thus, we are retaining both concepts as factors that must be met in order for a process to be considered legitimate recycling.

Source: 73 FR 64746(2)–64747(1), October 30, 2008.

Other FR citations for this topic
The 2003 proposal has a discussion of this factor (called "Criterion 3") at 68 FR 61585(2)–61586(2, October 28, 2003 The main points of this discussion are repeated in the final rule discussion included above.

The 2007 supplemental proposal discusses the role of this factor in the structure proposed in that notice at 72 FR 14199(1)–14199(2), March 26, 2007.

A discussion of the definition of terms throughout the final legitimacy factors is at 73 FR 64744(3)–64745(1), October 30, 2008.

Factor 3—Managed as a Valuable Commodity

The preamble to the final rule provides the regulatory text of Factor 3 as well as a description of the factor:

The generator and the recycler should manage the hazardous secondary material as a valuable commodity. Where there is an analogous raw material, the hazardous secondary material should be managed, at a minimum, in a manner consistent with the management of the raw material. Where there is no analogous raw material, the hazardous secondary material should be contained. Hazardous secondary materials that are released to the environment and are not recovered immediately are discarded" (40 CFR 260.43(c)(1)).

The first of the additional factors that must be considered expresses the principle that hazardous secondary materials being recycled should be managed in the same manner as other valuable materials. This factor requires those making a legitimacy determination to look at how the hazardous secondary material is managed before it enters the recycling process. In EPA's view, a recycler will value hazardous secondary materials that provide an important contribution to its process or product and, therefore, will manage those hazardous secondary materials in a manner consistent with how it manages a valuable feedstock. If, on the other hand, the recycler does not manage the hazardous secondary materials as it would a valuable feedstock, that behavior may indicate that the hazardous secondary materials may not be recycled, but rather released into the environment and discarded.

This factor may be particularly appropriate in the case where a recycler has been paid by a generator to take its materials as a result of the economic incentives in the hazardous secondary materials market. By looking at the management of the hazardous secondary material before it enters the recycler's process, the entity making the legitimacy determination can tell that a material being managed like an analogous raw material is, in fact, valued by the recycler. If the hazardous secondary material is not being managed like a valuable raw material because it is uncontrolled or is being released, that indicates that the fee the recycler obtains for taking the hazardous secondary material may be its only value to that recycler. If the fee received were the only value to the recycler, it would mean that discard was taking place.

This factor addresses the management of hazardous secondary materials in two distinct situations. The first situation is when a hazardous secondary material is analogous to a raw material which it is replacing in the process. In this case, the hazardous secondary material should be managed prior to recycling similarly to the way the analogous raw materials are managed in the course of normal manufacturing. EPA expects that all parties handling hazardous secondary materials destined for recycling—generators, transporters, intermediate facilities and reclamation facilities—will handle them in generally the same manner in which they would handle the valuable raw materials they might otherwise be using in their process. "Analogous raw material," as defined elsewhere in this preamble, is a raw material for which the hazardous secondary material substitutes and which serves the same function and has similar physical and chemical properties as the hazardous secondary material.

The second situation the factor addresses is the case where there is no analogous raw material that the hazardous secondary material is replacing. This could be either because the process is designed around a particular hazardous secondary material—that is, the hazardous secondary material is not replacing anything—or it could be because of physical or chemical differences between the hazardous secondary material and the raw material that are too significant for them to be considered "analogous."

Hazardous secondary materials that have significantly different physical or chemical properties when compared to the raw material would not be considered analogous even if they serve the same function because it may not be appropriate to manage them in the same way. In this situation, the hazardous secondary material would have to be contained for this factor to be met. A hazardous secondary material is "contained" if it is placed in a unit that controls the movement of that material out of the unit. This requirement is consistent with the idea that normal manufacturing processes are designed to use valuable material inputs efficiently rather to than allow them to be released into the environment.

For example, if a manufacturer has an ingredient that is a dry raw material managed in supersacks, the Agency would expect that a hazardous secondary material that is a similar dry material also would be managed in supersacks or in a manner that would provide equivalent protection. If, on the other hand, the hazardous secondary material was instead managed in an outdoor pile without appropriate controls in place to address releases to the environment, it may indicate that it was not being handled as a valuable commodity. If, however, the manufacturer decided to replace the dry raw material in its process with a liquid having the same constituents, it would not be sufficient, nor would it make sense, for the liquid to be managed in supersacks. Instead, the liquid would have to be "contained" (for example in a tank or surface impoundment).

An important part of this factor is the statement in the regulatory text clarifying that hazardous secondary materials that are released to the environment and not recovered immediately are discarded. Valuable products should not be allowed to escape into the environment through poor management and this factor clarifies that those hazardous secondary materials that do escape (and are not immediately recovered) are clearly discarded. Either a large release or ongoing releases of smaller amounts could indicate that, in general, the hazardous secondary material is not being managed as a valuable product, which could potentially lead to the recycling process being found not to be legitimate. Hazardous secondary materials that are immediately recovered before they disperse into the environment—air, soil, or water—and are reintroduced in the recycling process are not discarded. This determination must be made on a case-by-case basis, however.

EPA has determined that it is appropriate that this factor is one of the two that must be considered rather than a factor that must be met because there are situations in which this factor is not met, but recycling appears to be legitimate. An example of this kind of situation is described in the March 2007 supplemental proposal (72 FR 14199). In the example, a hazardous secondary material that is a powder-like material is shipped in a woven super sack and stored in an indoor containment area, whereas the analogous raw material is shipped and stored in drums. A strict reading of this factor may determine that the hazardous secondary material is not being managed in a manner consistent with the raw material even if the differences in management are not actually impacting the likelihood of a release. By designing the legitimacy factors so that this one has to be considered, but not necessarily met, the individual facts of situations like the one described here can be evaluated on a case-by-case basis to determine if they affect the legitimacy of the recycling activity.

In summary, given the nature of the legitimacy factors and their need to apply to all the practices covered by the exclusions in this final rule, it is not appropriate or practicable for EPA to develop a specific management standard. In the absence of such a management standard, EPA is using this factor: materials must be managed

> as analogous raw materials or, if there are no analogous raw materials, the materials must be contained. EPA's intent with this factor is that hazardous secondary materials are managed in the same manner as materials that have been purchased or obtained at some cost, just as raw materials are. Just as it is good business practice to ensure that raw materials enter the manufacturing process rather than being spilled or released, we would expect hazardous secondary materials to be managed effectively and efficiently in order that their full value to the manufacturing process would be realized.
>
> **Source:** 73 FR 64703(2)–64704(2), October 30, 2008.

The 2003 proposal included another example of how this factor would be applied:

> To illustrate, hazardous metal-bearing secondary materials can often be used as substitutes for "raw" metal ore concentrates in making metal products. Assuming both types of materials have similar physical properties, the Agency would expect the secondary materials and the metal ore concentrates to be managed in the same or similar units. If, however, in this example the secondary materials were managed in outdoor piles, while the ore concentrate materials were managed in containers, an overseeing agency might well determine that the practice of storing the secondary materials in outdoor piles indicates sham recycling. (In addition, any releases of the hazardous secondary materials to the environment would also be considered discard under RCRA.)
>
> **Source:** 68 FR 61583(3), October 28, 2003.

The final rule preamble also provides a discussion of how the concepts in Factor 3 are related to the concepts in the Lowrance Memo:

> <u>Relevant Lowrance Memo Questions:</u>
>
> (5) Is the secondary material handled in a manner consistent with the raw material/product it replaces?
>
> > Is the secondary material stored in a similar manner as the analogous raw material (i.e., to prevent loss?)
> >
> > Are adequate records regarding the recycling transactions kept?
> >
> > Do the companies involved have a history of mismanagement of hazardous wastes?
>
> <u>Discussion</u>

Although worded somewhat differently, this factor is essentially the same as the fifth question in the Lowrance Memo. Similarly, the 1985 preamble asked whether recyclable hazardous secondary materials were "handled in a manner consistent with their use as raw materials or commercial product substitutes."

In one respect, however, Factor 3 is less restrictive than the Lowrance Memo—the memo posed an additional question, "Is the secondary material stored on the land?" This could be read as implying that storage on the land is an indication of sham recycling. Of course, this question is just one of the more than two dozen questions from the Lowrance memo, that, when taken as a whole, help draw the distinction between legitimate recycling and sham recycling. Also, the Agency is aware of situations where storage of raw materials on the land is a normal part of the manufacturing process. Thus, Factor 3 does not identify land storage as a specific indicator of sham recycling.

Source: 73 FR 64709(3), October 30, 2008.

The final rule preamble also addresses some of the comments received by the Agency on Factor 3:

Comments: Factor 3—how the hazardous secondary material to be recycled is managed

This factor on the management of hazardous secondary materials was designed to illustrate that hazardous secondary materials that are bound for recycling should be managed to prevent releases into the environment in the same way that valuable commodities would reasonably be expected to be managed. Hazardous secondary materials that are recycled are valuable production inputs. As such, we believe that such materials should be managed in a way that retains their value and prevents significant losses to the environment. Hazardous secondary materials that are mismanaged to the extent that they are released into the environment are not recycled.

This factor is one of the two legitimacy factors that EPA believes needs to be considered. However, in some cases, it may not be clear that the factor is met or it may not be met, yet the recycling activity can still be legitimate. The regulatory text for the factor can be found in 40 CFR 260.43(c)(1) and it states that the handler should manage the hazardous secondary material "as a valuable commodity." If an analogous raw material exists, the hazardous secondary material should be managed, "at a minimum, in a manner consistent with the management of the raw material." If there is no analogous raw material, the proposal states that the hazardous secondary material should be "contained."

The response from commenters on this factor was mixed in response to both the October 2003 proposal and the March 2007 supplemental proposal. Many states

and environmental organizations commented that the factor should be mandatory and some argued that it should include a strict test. Many commenters from the generating industry and the waste management industry stated that they support this factor and believe that it is a fair and reasonable indicator of legitimacy. Some industry commenters thought that this factor should be mandatory, whereas others commented that the factor should neither be codified nor mandatory. At least one commenter stated that the factor was not necessary because of other existing disincentives for mismanagement. Representatives from extractive industries were most strongly opposed to this factor, stating that EPA cannot include legitimacy requirements on secondary materials that are going to be recycled because they are not in EPA's jurisdiction.

EPA's response: Factor 3—how the hazardous secondary material to be recycled is managed

Today, we are finalizing this factor as one of the two factors that must be considered during a legitimacy determination, but not necessarily met. We modified the language of this factor since the October 2003 proposal and are finalizing it basically as proposed in the March 2007 supplemental proposal. EPA has decided that it is most appropriate to finalize this factor as one of the factors that must be considered rather than as a mandatory factor. Although we believe that this factor is an important part of a legitimacy determination because hazardous secondary materials that are not being managed carefully may be materials that the recycler does not value for its process, the factor is not part of what the Agency considers the core of legitimacy. In addition, as discussed in section IX of this preamble, EPA and commenters were able to identify situations in which this factor is not met, but the recycling appears to be legitimate because the hazardous secondary materials are still being managed in a responsible manner. EPA does not want to restrict legitimate recycling and, therefore, in these cases, the facility could make a determination of legitimacy without meeting this factor, but should be prepared to explain why its recycling is legitimate.

EPA also believes that this factor can be critical when considering whether hazardous secondary materials are legitimately recycled and EPA disagrees with commenters who argued that evaluating "materials management" is outside the scope of RCRA because hazardous secondary materials are not solid wastes due to being excluded. EPA believes that the commenters' argument is circular. The hazardous secondary materials are excluded only if the recycling is legitimate. How materials are managed is part of determining legitimate recycling. EPA has the authority to define legitimate recycling and, therefore, has the authority to require this evaluation.

Comments: definition of terms in Factor 3

Commenters stated that compliance with this factor is dependent on the regulated community and regulators understanding what EPA means by it. In the October 2003 proposal, we proposed that the factor read, "[w]here there is no analogous raw material, the secondary material should be managed to minimize the potential for releases to the environment." Many commenters stated that the term "minimize" in this context was particularly unclear. State commenters argued that the term "minimize" did not provide enough guidance or could be interpreted to allow unclear amounts of hazardous secondary materials to be released, leaving room for potential mismanagement of that material, whereas some industry commenters asked if this standard meant they would have to meet or exceed controls required for regulated hazardous wastes in their recycling operations. Several commenters also asked about the term "valuable commodity" and how "valuable" is defined.

EPA's response: definition of terms in Factor 3

EPA agrees that terms for this factor should be more clear to facilitate compliance. Although we have not developed a specific test or codified definitions to explain this factor, we have adjusted some of the language in the factor to address this concern and are providing further explanation of what we intend by this factor in today's preamble so that it is better understood and can be consistently applied.

In the March 2007 supplemental proposal, we modified the language for this factor to state instead that "[w]here there is no analogous raw material, the hazardous secondary material should be contained." This change addressed the ambiguity of the word "minimize," as well as state comments that the storage requirements in this factor needed to be better defined. The Agency believes that facilities that value hazardous secondary materials as part of their manufacturing process will contain those materials to prevent their release. The term "contained" is also being used elsewhere in the exclusions being finalized. EPA is defining this term in the same way throughout: a recyclable material is "contained" if it is placed in a unit that controls the movement of that material out of the unit into the environment. We also believe that the standard for contained is more clear for states and industry than the standard to minimize potential releases to the environment was in the October 2003 proposal.

We also want to clarify the use of several other terms on which we received comments. These terms are discussed briefly here and in more depth in section IX of this preamble, where the legitimacy factors are fully described. "Analogous raw material," also defined elsewhere in the exclusions, is a raw material for which a hazardous secondary material is a substitute and which serves the same function and has similar physical and chemical properties as the hazardous secondary material. Materials generally would not be considered analogous if their chemical makeup were very different from one another—particularly if the

hazardous secondary materials contain hazardous constituents that necessitate management processes that the raw material does not—or if their physical properties are different.

Regarding the term "valuable commodity," EPA believes that hazardous secondary materials should be managed in the same or similar manner as raw materials that have been purchased or obtained at some cost. The legitimacy criteria are designed to determine whether a process is like manufacturing rather than like waste management. We believe that the standard for management of the hazardous secondary materials is reasonable for helping assess whether disposal in the guise of normal manufacturing is occurring.

Source: 73 FR 64747(1)–64748(1), October 30, 2008.

Other FR citations for this topic
The 2003 proposal has a discussion of this factor (called "Criterion1") at 68 FR 61583(3)–61584(2), October 28, 2003. The main points of this discussion are repeated in the final rule discussion included above.

The 2007 supplemental proposal discusses the role of this factor in the structure proposed in that notice at 72 FR 14199(1)–14199(2), March 26, 2007.

A discussion of the definition of terms throughout the final legitimacy factors is at 73 FR 64744(3)–64745(1), October 30, 2008.

Factor 4—Comparison of Toxics in the Product

The preamble to the final rule provides the regulatory text of Factor 4 as well as a description of the factor:

> 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" (40 CFR 260.43(c)(2)).
>
> The second of the additional factors that must be considered requires those making a legitimacy determination to look at the concentrations of the hazardous constituents found in the product made from hazardous secondary materials and compare them to the concentrations of hazardous constituents in analogous products. Any of the following three situations could be an indicator of sham recycling: a product that contains significant levels of hazardous constituents that are not found in the analogous products; a product with hazardous constituents

that were in the analogous products, but contains them at significantly higher concentrations; or a product that exhibits a hazardous characteristic that analogous products do not exhibit. Any of these situations could indicate that sham recycling is occurring because in lieu of proper hazardous waste disposal, the recycler could have incorporated hazardous constituents into the final product when they are not needed to make that product effective in its purpose. This factor, therefore, is designed to determine when toxics that are "along for the ride" are discarded in a final product and, therefore, the hazardous secondary material is not being legitimately recycled.

To evaluate this factor, a recycler will ordinarily compare the product of the recycling process to an analogous product made of raw materials. For example, if a recycling process produced paint, the levels of hazardous constituents in the paint will be compared with the levels of the same constituents found in similar paint made from virgin raw materials.

A recycler is also allowed to perform this evaluation by comparing the hazardous constituents in the hazardous secondary material feedstock with those in an analogous raw material feedstock. If the hazardous secondary material feedstock does not contain significantly higher concentrations of hazardous constituents than the raw material feedstock, then the end product of the recycling process would not contain excess hazardous constituents "along for the ride" either. EPA is clarifying here that this method of showing that the product does not have "toxics along for the ride" is acceptable. There may be cases in which it is easier to compare feedstocks than it is to compare products because the recycler knows that the hazardous secondary material is very similar in profile to the raw material. A comparison of feedstocks may also be easier in cases where the recycler creates an intermediate which is later processed again and may end up in two or more products, when there is no analogous product, or when production of the product of the recycling process has not yet begun.

This factor identifies three ways to evaluate whether or not unacceptable amounts of hazardous constituents are passed through to the products of the recycling process. (As explained above, these methods also could be used to compare the hazardous secondary material feedstock to a raw material feedstock, if the recycler prefers.) The first method specifies that when analogous products made from raw materials do not contain hazardous constituents, the product of the recycling process should not contain significant amounts of hazardous constituents. For example, if paint made from reclaimed solvent contains significant amounts of cadmium, but the same type of paint made from virgin raw materials does not contain cadmium, it could indicate that the cadmium serves no useful purpose and is being passed though the recycling process and discarded in the product.

The second method addresses analogous products that do contain hazardous constituents and asks whether the concentrations of those hazardous constituents are significantly higher in the product of the recycling process than in the product made from raw materials. Concentrations of hazardous constituents in the product of the recycling process that are significantly higher than in the product made from virgin raw materials could again be an indicator of sham recycling. For example, if a lead-bearing hazardous secondary material was reclaimed and then that material was used as an ingredient in making ceramic tiles and the amount of lead in the tiles was significantly higher than the amount of lead found in similar tiles made from virgin raw materials, the recycler should look more closely at the factors to determine the overall legitimacy of the process.

The third method under this factor is whether the product of the recycling process exhibits a hazardous characteristic that analogous products do not exhibit. Requiring an evaluation of hazardous characteristics ensures that products of the recycling process do not exhibit the characteristics of toxicity, ignitability, corrosivity, or reactivity when the analogous products do not. The Agency believes that most issues associated with "toxics along for the ride" will involve the presence of toxic constituents, which are addressed under the first two parts of the factor. That is, we believe that it is likely that there are few instances where hazardous secondary materials are used in the process and hazardous constituents are not present at significantly higher levels, but the product made from the hazardous secondary material nevertheless exhibits the hazardous characteristic of toxicity when the analogous product does not. It is possible, though, that the use of hazardous secondary materials as an ingredient could cause a product to exhibit a hazardous characteristic, such as corrosivity, that is not exhibited by analogous products.

The Agency has determined that it is appropriate for this factor to be considered in legitimacy determinations under the final exclusions and in the non-waste determinations in this action, but thinks that there may be situations in which the factor is not met but the recycling would still be considered legitimate. An example of this kind of situation that has been addressed by the Agency under the current regulatory scheme would be in the use and reuse of foundry sands for mold making in a facility's sand loop. Because of repeated exposure to metals in a foundry's process, the sands used to make the molds may have significantly higher concentrations of hazardous constituents than virgin sand. However, because the sand is part of an industrial process where there is little chance of the hazardous constituents being released into the environment or causing damage to human health and the environment when it is kept inside, because there is lead throughout the foundry's process, and because there is a clear value to reusing the sand, this would be an example of a situation where this factor is not met, but it does not affect the legitimacy of the recycling process.

In fact, EPA has concluded as a general matter that foundries engaged in the reuse of lead-containing foundry sands are recycling those sands legitimately and these sands would not be regulated under RCRA Subtitle C (under the circumstances described in EPA's March 2001 memorandum on this subject).[1] Thus, while the used sands in the sand loop arguably have toxics-along-for-the ride, EPA did not raise questions about the legitimacy of the recycling, given the overall nature of the operations. If the used foundry sand were being recycled into a different product, such as a material used on the ground or in children's play sand, the legitimacy determination would be very different and significant levels of metals would likely render the recycling illegitimate. The same conclusions would be reached applying the factors codified in 260.43.

Another example of recycling that may be legitimate although this factor has not been met could be when the material has concentrations of toxics that could be considered "significantly higher" than the analogous product, but meets industry specifications for the product that include specific specifications for the hazardous constituent of concern. Meeting accepted industry standards would be a strong indication that this material is being legitimately recycled. A third example could be in the mining and mineral processing industry. In many mineral processing operations, the very nature of an operation results in hazardous constituents concentrating in the product as it proceeds through the various steps of the process. In many cases, there is not an analogous product to compare the products of these processes so this factor may not be relevant because of the nature of the operations. As with the above example, if a facility considers a factor and decides that it is not applicable to its process, the Agency suggests that the facility evaluate the presence of hazardous constituents in its product and be prepared to demonstrate both that it considered this factor and the reasons it believes the factor is not relevant.

As discussed in more detail in the comments section of this preamble (section XVIII) and in the response to comments document in the docket, commenters on this factor requested clarification concerning what EPA meant by the terms used in this factor. In response to some of these comments, EPA has made two clarifications in the regulatory text by (1) specifying that the hazardous constituents referred to in the regulation are those that are found in Appendix VIII to 40 CFR part 261 and (2) clarifying that the hazardous characteristics to which EPA is referring to are those in 40 CFR part 261 subpart C.

The Agency also received much comment on the term "significant" and what the Agency intended by this term. EPA has decided to keep the term in the final rule. The alternative to using "significant" or a similarly flexible term to determine when there may be hazardous constituents in the product made from recycled

1Letter. Elizabeth Cotsworth, Director Office of Solid Waste, to Amy Blankenbiller, American Foundry Society, March 28, 2001.
http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/4C9A2EEE6E5F859B85256AC5004FC1C2/$file/14534.pdf

hazardous secondary materials that are not in the analogous products made from raw materials would be to set an absolute standard. In its discussion of legitimacy in the October 2003 proposed rule, EPA discussed possible "bright line" or risk-based approaches as a way to set absolute lines to define "significant" based on either a numerical limit or a risk level (68 FR 61587–61588). EPA recognizes that the "bright line" or the risk-based approach may provide greater clarity and predictability to the regulated community, but that in both cases the Agency would have to establish a line for what is acceptable and the line may either be somewhat arbitrary or it may exclude recycling practices that, if carefully considered, should be considered legitimate. Based on the comments received on those approaches, we are convinced that they would not be workable.

On the other hand, a case-by-case analysis of a recycling process can take into consideration the relevant principles and facts for that activity, leading to a determination of significance based on the facts of the activity. Because this factor must apply to various different recycling activities, we believe the case-by-case approach is most appropriate.

EPA, therefore, is finalizing its proposed option of using the term "significant" in 40 CFR 260.43(c)(2)(i) and (ii). Evaluating the significance of levels of hazardous constituents in products of the recycling process may involve taking into consideration several variables, such as the type of product, how it is used and by whom, whether or not the elevated levels of hazardous constituents compromise the efficacy of the product, the availability of the hazardous constituents to the environment, and others. For example, if a hazardous secondary material has been reclaimed and made into a product that will be used by children, and that product contains hazardous constituents that are not in analogous products, that product will likely need to be closely scrutinized. On the other hand, low levels of a hazardous constituent in a product from that same reclamation operation that is used as an ingredient in an industrial process or for another industrial application may not be significant and must be evaluated in the context of the product's use.

EPA provided several additional examples in implementing this factor in the October 2003 proposed rule which will be repeated here. If zinc galvanizing metal made from hazardous secondary materials that were reclaimed contains 500 parts per million (ppm) of lead, while the same zinc product made from raw materials typically contains 475 ppm, this difference in concentration would likely not be considered "significant" in the evaluation of this factor. If, on the other hand, the lead levels in the zinc product made from reclaimed hazardous secondary materials were 1,000 ppm, it may indicate that the product was being used to illegally dispose of lead and that the activity is sham recycling, unless other factors would demonstrate otherwise.

In another example, if a "virgin" solvent contains no detectable amounts of barium, while spent solvent that has been reclaimed contains a minimal amount of

barium (e.g., 1 ppm), this difference might not be considered significant. If, however, the barium in the reclaimed solvent were at much higher levels (such as 50 ppm), it may indicate discard of the barium and sham recycling.

Unfortunately, because of the variety of possible recycling scenarios under the exclusions and in the non-waste determinations covered by this final rule, we cannot provide examples for how this factor might work for all possible recycling situations. The Agency stresses that the determination of legitimacy for this factor should consider both the use and the users of the product in addition to the concentration of the hazardous constituents or the presence of a hazardous characteristic, as well as other relevant information. In addition, in some cases, the implementing agency may accept a risk argument from a recycler to show that the recycling activity meets this factor. If the recycler can show that despite elevated concentrations of hazardous constituents, such constituents pose little or no risk to human health or the environment, the implementing agency may consider that as evidence that the elevated concentrations are not significant.

Source: 73 FR 64704(2)–64706(2), October 30, 2008.

The final rule preamble also provides a discussion of how the concepts in Factor 4 are related to the concepts in the Lowrance Memo:

Relevant Lowrance Memo Questions

(1) Is the secondary material similar to an analogous raw material or product?

Does it contain Appendix VIII constituents not found in the analogous raw material/product (or at higher levels)?

Does it exhibit hazardous characteristics that the analogous raw material/product would not?

Does it contain levels of recoverable material similar to the analogous raw material/product?

(6) Other relevant factors

Are the toxic constituents actually necessary (or of sufficient use) to the product or are they just “along for the ride”?

Discussion

The Lowrance Memo and the definition of solid waste preamble statements from which it was developed have addressed the question of “toxics along for the ride” in a slightly different way than the factor in the final rule. The Lowrance Memo,

for example, allows for examination of toxic constituents in the hazardous secondary material destined for recycling and/or in the recycled product. As noted above, Factor 4 is intended to primarily address the question of "toxics along for the ride" in the products of recycling. We believe that the presence of toxic constituents in recyclable hazardous secondary materials is less relevant to assessing the legitimacy of recycling, primarily because much if not most recycling (as well as manufacturing) involves removing or destroying such harmful materials. As reflected in the factor, the central question is whether or not (and in what amount) hazardous constituents pass through the recycling process and become incorporated into the products of recycling. While some may argue that the approach of focusing on toxic constituents in recycled products may be somewhat less restrictive than the policy it would replace, we believe it is a better indicator of legitimate recycling. In cases where a recycler would prefer to compare the virgin feedstock to the hazardous secondary material going into the process, the rule makes it clear that this would be an adequate stand-in for the comparison described in the regulatory text.

Source: 73 FR 64709(3)–64710(1), October 30, 2008.

The final rule preamble also addresses some of the comments received by the Agency on Factor 4:

Comments: Factor 4—comparisons of toxics in the product

This factor was designed to prevent hazardous constituents from being "discarded" by being incorporated into a product made from hazardous secondary materials. The factor identifies this situation as being hazardous constituents that are in a product made from hazardous secondary materials when they are not in analogous products, or when hazardous constituents are at significantly higher levels in products made from hazardous secondary materials than in analogous products that contain such hazardous constituents, or when the product exhibits one or more of the hazardous characteristics and the analogous product does not. An analogous product can either be the final product of manufacturing or, in some cases, an intermediate in a process. These hazardous constituents are often called "toxics along for the ride" (TARs) and, if present, could be an indicator of discard.

This factor is the second of the two legitimacy factors that EPA believes needs to be considered but, in some cases, does not need to be met for the recycling activity to be considered legitimate. We modified the language of this factor since the October 2003 proposal and are finalizing the factor basically as proposed in the March 2007 supplemental proposal. The regulatory text for the factor can be found in 40 CFR 260.43(c)(2) and it states that the person making the determination should look at the product of the recycling process and compare it to analogous products that are made without hazardous secondary materials. The

person making the determination should examine the concentrations of hazardous constituents to learn whether the product of the recycling process contains significant concentrations of hazardous constituents when the analogous product contains none, whether it contains significantly elevated levels of hazardous constituents when compared to the analogous product that contain such hazardous constituents, or whether it exhibits a hazardous characteristic when the analogous product does not.

The Agency received many comments on the fourth factor in response to both the October 2003 proposal and the March 2007 supplemental proposal. The comments the Agency received on Factor 4 were very mixed, ranging from commenters who argued that this factor should be one of the factors that must be met to those who stated that the factor is irrelevant and should not be considered as part of a legitimacy determination.

EPA's response: Factor 4—comparisons of toxics in the product

Today, we are finalizing this factor as one of the two factors that must be considered during a legitimacy determination, but not necessarily met. EPA maintains that this factor is an important way of determining whether a recycling process is, in fact, true recycling rather than a "sham."

If hazardous secondary materials with a toxic constituent or toxic constituents in amounts or concentrations greater than analogous raw materials are simply being run through a manufacturing process, it is an indication that those hazardous secondary materials may be being discarded in the guise of recycling. Toxics that are illegally disposed of in this manner can become exposure risks and could harm human health and the environment. EPA has jurisdiction over materials being discarded and, therefore, is requiring that this factor be considered in legitimacy determinations. The factor is not one of the mandatory factors because the Agency has identified situations where higher levels of toxic constituents may not be relevant or applicable and, thus, would not be an indicator of "sham" recycling if this factor is not met, as discussed in section IX of this preamble. In these cases, the facility could make a determination of legitimacy without meeting this factor, but should be prepared to explain why its recycling is legitimate.

Comments: Factor 4—the term "significant" and alternative approaches

Many of these comments sought further guidance on the meaning of the term "significant" in the proposed regulatory text, stating that the definition in the proposal was unclear or subjective, which may lead to a wide range of possible interpretations of the term. Commenters also expressed concern that a definition that is too vague may discourage recycling. In a related topic, commenters also responded to EPA's request for comments on two alternate approaches in the October 2003 proposal: (1) an approach that would establish a "bright line" for

complying with the factor by specifically defining the terms "significant amounts" and "significantly elevated" in the regulatory text and (2) an approach that would require the use of risk assessment tools to determine if a product with elevated levels of a hazardous constituent due to use of hazardous secondary materials in its manufacture process posed a greater risk to human health or the environment than the analogous product made from raw materials.

On the whole, commenters were not enthusiastic about the two alternative approaches that EPA suggested. Most commenters stated that a specific test of either nature would not be appropriate because of the wide variety of recycling situations to which it would have to apply.

EPA's response: Factor 4—the term "significant" and alternative approaches

The Agency believes that designing a specific test, such as those described in the preamble to the October 2003 proposal, that is applicable to the many different recycling scenarios possible in the exclusions and non-waste determinations would be difficult, if not impossible. Thus, we agree with those commenters who argued against adopting such a specific test. Therefore, the Agency has more clearly described in this preamble to the final rule what it means by "significant" so that members of the regulated community can be confident in their evaluations of whether their products made from hazardous secondary materials contain "toxics along for the ride." Therefore, members of the regulated community will neither be discouraged from recycling nor be forced to seek an opinion from a regulatory agency in every case. Details on implementation of this factor are in section IX of today's preamble.

Comments: Factor 4—comparing the products instead of hazardous secondary materials

Most commenters responded positively to a change the Agency made in its October 2003 proposal to compare the product of the recycling process to the analogous product made from raw materials rather than comparing the hazardous secondary materials to the analogous raw materials. EPA discussed this shift in its October 2003 proposal at 68 FR 61586–61587.

However, several commenters argued that the change is an attempt by the Agency to regulate products or stated that certain unique elements of their production processes made it so that this factor should not apply to their industry or their particular process. In addition, some commenters were concerned that under this factor, in some cases, the generator would have to know what was being done with its hazardous secondary material several steps downstream in the recycling process when it was incorporated into a final product.

EPA's response: Factor 4—comparing the products instead of hazardous secondary materials

The Agency believes that for an entity to ensure that hazardous secondary materials are being legitimately recycled and not discarded, it needs to know what happens to the hazardous secondary materials once they leave the generator's control. However, in response to these comments, we are clarifying in today's preamble that the final legitimacy factor allows the entity conducting the legitimacy determination to make the comparison on "toxics" either between the final products or between the hazardous secondary material and the analogous raw material it replaces. If the comparison of materials going into the process shows no significant difference in levels of toxics, the product of the recycling process will not significantly differ from analogous products in those levels either. In cases where the generator finds it too complex to compare the product from its recycling process to the analogous product made from the virgin raw material, it can, instead, compare the chemistry of the materials going into the process to evaluate this factor.

Comments and EPA's response: relevance of Factor 4 to a particular process

Regarding the implementation of this factor, several commenters raised the concern that many products that are made from hazardous secondary materials do not have analogous products made from raw materials because they are always or have always been made from a combination of primary and in-process materials and that these are cases where this factor is not relevant to that particular recycling process. The commenters stated that this is especially true in the mineral extraction industries, but also may be the case in other industries as well.

The Agency is aware that there are situations where there may not be analogous products made from raw materials. In that case, the facility can opt to compare the toxic constituents in the hazardous secondary material it is using against those in an analogous raw material instead. We also note that while this factor needs to be considered, it is not mandatory because EPA recognizes that in some situations, it will not be relevant to a particular industrial process. In the case where the facility considers this factor and decides that it is not applicable to its process, the Agency suggests that the facility evaluate the presence of hazardous constituents in its product and document both that it considered this factor and the reasons it believes the factor is not relevant.

Source: 73 FR 64748(1)–74749(3), October 30, 2008.

Other FR citations for this topic
The 2003 proposal has a discussion of this factor (called "Criterion 4") at 68 FR 61586(2)–61587(3), October 28, 2003. The main points of this discussion are repeated in the final rule discussion included above.

The 2007 supplemental proposal discusses the role of this factor in the structure proposed in that notice at 72 FR 14199(1)–14200(1), March 26, 2007.

A discussion of the definition of terms throughout the final legitimacy factors is at 73 FR 64744(3)–64745(1), October 30, 2008.

Economics

The final rule included a discussion of how economics relates to the concept of legitimacy and how it can inform legitimacy determinations. The 2003 proposal included language on economics in the second "criterion"—whether the hazardous secondary material provides a useful contribution—but EPA did not finalize this language, believing that guidance and clarification on this topic was more appropriate:

> Consideration of economics has long been a part of the Agency's concept of legitimacy, as is evident in the Lowrance Memo and earlier preamble text (50 FR 638, January 4, 1985 and 53 FR 522, January 8, 1988; *see also American Petroleum Institute v. EPA* (*"API II"*), 216 F.3d 50, 57–58 (DC Cir. 2000)). This final rule does not codify specific regulatory language on economics as part of the legitimacy provision, but EPA offers further guidance and clarification on how economics may be considered in making legitimacy determinations, which is similar to the preamble discussion in the March 2007 supplemental proposal.
>
> Specifically, EPA believes that consideration of the economics of a recycling activity can be used to inform and help determine whether the recycling operation is legitimate. Positive economic factors would be a strong indication of legitimate recycling, whereas negative economic factors would be an indication that further evaluation of the recycling operation may be warranted in assessing the legitimacy factors.
>
> Considering the economics of a recycling activity can also inform whether the hazardous secondary material inputs provide a useful contribution and whether the product of recycling is of value. Economic information that may be useful could include (1) the amount paid or revenue generated by the recycler for recycling hazardous secondary materials; (2) the revenue generated from the sale of recycled products; (3) the future cost of processing existing inventories of hazardous secondary materials; and (4) other costs and revenues associated with the recycling operation. The economics of the recycling transaction may be more of an issue when hazardous secondary materials are sent to a third-party recycler,

but even when the hazardous secondary materials are recycled under the control of the generator, the generator must still show that the hazardous secondary materials are, at a minimum, providing a useful contribution and producing a valuable product.

Useful economic information

(1) The amount paid or revenue generated by the recycler for recycling hazardous secondary materials is one example of how economic information can help support a legitimacy determination. We have three primary illustrations to exemplify this. First, the basic economic flows can suggest whether the recycling operation will process inputs, including hazardous secondary materials, and produce products over a reasonable period of time, recognizing that there will be lean and slow times. A general accounting of the major costs, revenues, and economic flows for a recycling operation over a reasonable period of time can provide information for considering whether recycling is likely to continue at a reasonable rate, compared to the rate at which inputs are received, or whether it is likely that significant amounts of hazardous secondary materials would be accumulated and then abandoned when the facility closes. Any bona fide sources of revenues would be included in this consideration, such as payments by generators to recyclers for accepting hazardous secondary materials and subsidies supporting recycling. However, in order to have some level of confidence that beneficial products are or will be produced over a reasonable time frame, we believe that at least some portion of the revenues should be from product sales (or savings due to avoided purchases of products if the hazardous secondary materials are used directly by the recycler). This is consistent with the factor requiring that the hazardous secondary material must be recycled to make a valuable product or intermediate.

Two scenarios illustrate this first example: a recycling operation that generates revenues from the sale of recycled products that greatly exceed the costs of the operation is an indication of a process that turns the hazardous secondary materials into useful products, and is unlikely to over accumulate them. A very different example is an operation that has, relative to its revenues, large inventories of unsold product and large future liabilities in terms of stocks of unprocessed hazardous secondary materials. This operation could potentially fail the “useful contribution” and “produces a valuable product or intermediate” legitimacy factors, and would draw closer attention to determine whether it is engaged in treatment and/or abandonment in the guise of recycling.

Second, when the economics of a recycling operation that uses hazardous secondary materials to produce and sell final products are similar to a manufacturing operation using raw materials to produce and sell final products, we believe that such an operation is likely to be legitimate. For instance, if the recycler pays for hazardous secondary materials as a manufacturer would pay for

raw materials, the recycler sells products from the recycling process as a manufacturer would sell products from manufacturing, and the revenues generated equal or exceed costs, then the hazardous secondary materials appear to be valuable (i.e., the recycler is willing to pay for them) and appear to make a useful contribution to a valuable recycled product.

However, we also recognize that the economics of many legitimate recycling operations that utilize hazardous secondary materials differ from the economics of more traditional manufacturing operations. For example, many recyclers are paid by generators to accept hazardous secondary materials. Generators may be willing to pay recyclers because generators can save money if the recycling is less expensive than disposing of the hazardous secondary materials in landfills or incinerators. Also, some recyclers receive subsidies that may be designed to develop recycling infrastructure and markets or to achieve other benefits of recycling. For instance, the recycling of electronic materials can be legitimate even when the recycler is subsidized for processing the material.

Third, any analysis of the economics of a recycling operation should recognize that a recycler may be able to charge generators and still be a legitimate recycling operation. Because these hazardous secondary materials are hazardous wastes if disposed of, typically the generators' other alternative management option already carries a cost that is based on the existing market for hazardous waste transportation, treatment, and disposal. Hence, unless there is strong competition in recycling markets or the hazardous secondary materials are extremely valuable, a recycler may be able to charge generators simply because alternative disposal options cost more.

Recognizing that such a dynamic exists can assist those making legitimacy determinations in evaluating recycling operations. For example, if a recycler is charging generators fees (or receiving subsidies from elsewhere) for taking hazardous secondary materials and receives a far greater proportion of its revenue from acceptance of the fees than from the sale of its products, both the useful contribution and the valuable product factors may warrant further review, unless other information would indicate that such recycling is legitimate. Fees and subsidies may indicate that the economic situation allows the recycler to charge high fees, regardless of the contribution provided by the inputs, including hazardous secondary materials. In this situation, recyclers may also have an increased economic incentive to over-accumulate or overuse hazardous secondary materials or to manage them less carefully than one might manage more valuable inputs. Additionally, if there is little competition in the recycling market, and/or if acceptance fees seem to be set largely to compete with the relative costs of alternative disposal options rather than to reflect the quality or usefulness of the input to the recycling operation, this may also suggest a closer look at the useful contribution factor.

(2) A comparison of revenue from sales of recycled products to payments by generators is another example of how economic information can help support an evaluation of "valuable product." It is possible that product sales revenues could be dwarfed by the acceptance of fees because markets for particular products are highly competitive or because high alternative disposal costs allow for high acceptance fees. However, relatively low sales revenues could also require a review of other factors, such as whether product sales prices are lower than other comparable products, products are being stockpiled rather than sold, or very little product is being produced relative to the amount of inputs to the recycling operation. These indicators may suggest that the product of the recycling process is not valuable and, thus, sham recycling may be occurring.

(3) A consideration of the future cost of processing or alternatively managing existing inventories of hazardous secondary material inputs is another example of how economic information can inform a legitimacy determination. When hazardous secondary materials make a significant useful contribution to the recycling process, a recycler will have an economic incentive to process the input materials relatively quickly and efficiently, rather than to maintain large inventories. While recyclers often need to acquire sufficient amounts of hazardous secondary materials to make it economically feasible to recycle them, there should be little economic incentive to over-accumulate such materials that make a useful contribution. Overly large accumulations of input materials may indicate that the hazardous secondary materials are not providing a useful contribution or that the recycler is increasing its future costs of either processing or disposing of the material, and may be faced with an unsound recycling operation in the future. However, it is important to keep in mind that possible explanations for this may exist. For example, the recycler may have acquired a large stock of hazardous secondary materials because the price was unusually low or perhaps the hazardous secondary materials are generated episodically and the recycler has few opportunities to acquire them.

(4) An analysis of costs and revenues specific to on-site recycling is an additional, albeit specific, example of economic information to consider. When recycling is conducted under the control of the generator, the recycler may not account formally for some of the costs and savings of the operation. Still, when deciding whether to undertake or continue the recycling operation or to utilize alternative outside recycling or disposal options, the on-site recycler (under the control of the generator) will evaluate the basic economic factors as a part of doing business. One such factor could be an accounting of the costs of virgin materials avoided by using hazardous secondary materials. Similarly, sales of recycled products under the control of the generator that are sold to an external market may support the valuable product criterion.

Source: 73 FR 64706(2)–64707(3), October 30, 2008.

The final rule includes additional detail about the decision to discuss economics as guidance and not incorporate it into one factor in its response to comments:

> EPA agrees with those commenters who argued that economic considerations are inherent within the legitimacy factors. We believe that one specific factor cannot encompass all economic scenarios for the entire universe of hazardous secondary materials recycling. Furthermore, we do not believe that a separate enforceable factor in the regulations strengthens the definition of legitimate recycling, but we do believe that articulating how economic considerations can influence the legitimacy factors adds real value to the legitimacy determinations made by state regulators and the regulated community.
>
> Based on the comments we received, the Agency is not codifying specific regulatory language on economic considerations. Instead, today's preamble offers guidance and clarification on how economics may be considered in making legitimacy determinations, similar to the preamble discussion in the March 2007 supplemental proposal.
>
> **Source:** 73 FR 64749(3)–64750(1), October 30, 2008.

EPA also responded in this section of the preamble to comments stating that there should be a specific test to use on the economics of a recycling transaction to determine legitimacy:

> Commenters that supported a specific test believed it could include an accounting of economic flows over a period of time to determine longevity; an annual regulatory review of markets and a facility's economics; a "rebuttable presumption that the recycling is legitimate where the recycler pays for the secondary materials," similar to manufacturing operations; and a requirement that payment for recycled products and intermediates be more than nominal if considered to be a sign of positive economics. One comment was also submitted which expressly opposed a specific test, citing that markets fluctuate too much to analyze the flows of revenues.
>
> EPA believes that none of the examples suggested by the commenters are applicable to a broad universe of recycling activities. We also acknowledge that fluctuations in markets for hazardous secondary materials and recycled products, and subsequent impacts in revenue flows, create another challenging aspect of developing a test for the consideration of economics. Therefore, we believe that it is not possible to craft an economic test for legitimacy that can accommodate all legitimate recycling activities.
>
> **Source:** 73 FR 64750(1), October 30, 2008.

Other FR citations for this topic
Economics and legitimacy were discussed in the 2007 supplemental proposal at 72 FR 14200(1)–14201(3), March 26, 2007.

The economics of a legitimacy transaction was discussed as part of "Criterion 2" in the 2003 proposal of this rulemaking at 68 FR 61584 (2)–61584(3), October 28, 2003.

Demonstration and Enforcement of Legitimacy

EPA's final rule states at section 260.43(a) that

> Persons regulated under §260.34 or claiming to be excluded from hazardous waste regulation under §261.2(a)(ii), §261.4(a)(23), (24), or (25) because they are engaged in reclamation must be able to demonstrate that the recycling is legitimate.
>
> **Source:** 73 FR 64759(2), October 30, 2008.

EPA describes the requirement to demonstrate legitimacy more thoroughly in the preamble to the rule:

> [40 CFR 260.43] states that anyone claiming an exclusion at §261.2(a)(2)(ii), §261.4(a)(23), §261.4(a)(24), or §261.4(a)(25) or using a non-waste determination at §260.30(d) or (e) must be able to demonstrate that its recycling activity is legitimate. The Agency has included the language "In determining if their recycling is legitimate, persons must address the requirements of §260.43(b) and must consider the requirements of §260.43(c)" to make it clear that the factors in paragraph (b) must be met, while the factors in paragraph (c) must be considered and evaluated in determining whether the recycling activity overall is legitimate.
>
> Although there is no specific recordkeeping requirement that goes with the ability to demonstrate legitimacy, EPA would expect that in the event of an inspection or an enforcement action by an implementing agency, the recycler would be able to show how it made the overall legitimacy determination per §261.2(f). In the event that the process does not conform to one of the two factors under §260.43(c), the facility should be able to show that it considered that factor and why the recycling activity overall remains legitimate. For example, under existing exclusions from the definition of solid waste, reuse of lead contaminated foundry sands may or may not be legitimate, depending on the use. The use and reuse of foundry sands for mold making in a facility's sand loop under normal industry practices has been found to be legitimate because the sand is part of an industrial process where there is little chance of the hazardous constituents being released into the environment or causing damage to human health and the environment when it is

kept inside, because there is lead throughout the foundry's process, and because there is a clear value to reusing the sand. However, in the case of lead contaminated foundry sand used as children's play sand, the same high levels of lead would disqualify this use from being considered legitimate recycling. The same result would be reached when applying Factor 4.

Source: 73 FR 64701(2)–64701(3), October 30, 2008.

EPA also discusses demonstration and documentation of legitimacy in the Response to Comments section of the preamble:

We note, however, that in the cases where a recycling practice does not meet one or both of these factors, the hazardous secondary material generator and/or recycler should be able to demonstrate why the recycling is in fact still legitimate.

Source: 73 FR 64743(2), October 30, 2008.

Comments and EPA's response: documentation of legitimacy

Several of the public comments stated that it is important that the hazardous secondary material generator or recycler of a recycled material maintain documentation that substantiates how the recycling activity complies with the legitimacy requirements. The comments stated that these records would show how the recycling activity meets the factors or, if a factor is not applicable, the records would document why it is not necessary for it to meet that factor. In this way, the hazardous secondary material generator or recycler could show that it considered all the factors. Other commenters objected to any recordkeeping requirements documenting that a recycling activity is legitimate.

After considering the comments, the Agency has determined that for the purpose of the legitimacy factors in the final rule, 40 CFR 261.2(f) applies. Section 261.2(f) states that, in the context of an enforcement action to implement Subtitle C of RCRA, a person claiming that a material is not a solid waste or is conditionally exempt from regulation is responsible for showing that they meet the terms of the exclusion and must provide appropriate documentation to show why they are eligible. For the legitimacy requirements finalized today, this provision would require that persons claiming that their recycling activity is legitimate would have the burden to provide documentation showing how the hazardous secondary materials provide a useful contribution to the recycling process and how the product of the recycling activity—whether it is a consumer product or a process intermediate—is valuable. In addition, the documentation would have to show that the hazardous secondary material generator or recycler considered the other two factors and determined for each of them that either the activity meets the factor or that the factor does not apply to this recycling activity and why it is not relevant or appropriate to consider.

In addition, as part of today's transfer-based exclusion, the hazardous secondary material generator has to undertake reasonable efforts to ensure its hazardous secondary materials will be legitimately recycled pursuant to §260.43. As part of the reasonable efforts requirements, generators must document their reasonable efforts per §261.4(a)(24)(v)(C).

Source: 73 FR 64750(2)–64750(3), October 30, 2008.

Demonstrating legitimacy is also discussed in the preamble in the context of three of the four individual factors:

Factor 1

There are various ways in which hazardous secondary materials can be useful to a recycling process and various ways are laid out in this discussion of how a facility might demonstrate conformity with this factor. In addition, we provided a number of different ways a material could contribute to the process in the regulatory text describing this factor [note: i.e., (i) contributing valuable ingredients to a product or intermediate, (ii) replacing a catalyst or carrier in the recycling process, (iii) providing a valuable constituent to be recovered, (iv) being regenerated, or (v) being used as an effective substitute for a commercial chemical product]. Any one of these would be sufficient to demonstrate that the hazardous secondary material provides a useful contribution.

Source: 73 FR 64702(2)–64702(3), October 30, 2008.

Factor 2

Evaluations of "valuable" for the purpose of this factor should be done on a case-by-case basis, but one way to demonstrate that the recycling process yields a valuable product would be the documented sale of a product of the recycling process to a third party. Such a documentation could be in the form of receipts or contracts and agreements that establish the terms of the sale or transaction. This transaction could include money changing hands or, in other circumstances, may involve trade or barter. A recycler that has not yet arranged for the sale of its product to a third party could establish value by demonstrating that it can replace another product or intermediate that is available in the marketplace. A product of the recycling process could be sold at a loss in some circumstances, but the recycler would have to be prepared to show how the product is clearly valuable to the purchaser [….]

Demonstrations of intrinsic value could involve showing that the product of the recycling process or intermediate replaces an alternative product that would otherwise have to be purchased or could involve a showing that the product of the

recycling process or intermediate meets specific product specifications or specific product standards. Another approach could be to compare the product's or intermediate's physical and chemical properties or efficacy for certain uses with those of comparable products or intermediates made from raw materials.

Source: 73 FR 64702(3)–64703(1), October 30, 2008.

Factor 4

[The discussion regarding demonstrating for Factor 4 revolves around the factor being a "factor to be considered":]

[T]he Agency suggests that the facility evaluate the presence of hazardous constituents in its product and be prepared to demonstrate both that it considered the factor and the reasons it believes the factor is not relevant.

Source: 73 FR 64705(3), October 30, 2008

Enforcement of legitimacy is discussed with the enforcement of the finalized exclusions:

In addition, the Agency affirms in this preamble that §261.2(f) applies to all claims that hazardous secondary materials are not solid waste because they are being legitimately recycled, including those that are not specifically addressed in this final rule. Respondents in enforcement cases should be prepared to demonstrate that they meet the terms of the exclusion or exemption, which includes demonstrating that the recycling is legitimate. Appropriate documentation must be provided to the enforcing agency to demonstrate that the material is not a solid waste or is exempt from regulation. In addition, the recycler of the hazardous secondary material should be prepared to show it has the necessary equipment to perform the recycling operation. Furthermore, any release of the hazardous secondary materials to the environment that is not immediately cleaned up would be considered discarded and, thus, the hazardous secondary material that was released would be a solid waste and potentially subject to the RCRA hazardous waste regulations.

Source: 73 FR 64700(1), October 30, 2008.

Other FR citations for this topic
The Agency repeats its point that a facility may be required to demonstrate how its recycling is legitimate in the final rule at 73 FR 64744 (1), October 30, 2008.

In the final rule, discussion of the demonstration of Factor 1 is found also at 73 FR 64746 (1), October 30, 2008 and discussion of the demonstration of Factor 2 is found also at 73 FR 74746(3), October 30, 2008.

In addition, the 2003 proposal discussed the demonstration of Factor 2 (Criterion 3) at 68 FR 61585(3)–61586(3), October 28, 2003. This discussion is very similar to the corresponding discussion in the final rule.

The demonstration of legitimacy is discussed in the context of Question (1) of the reasonable efforts condition at 73 FR 64687(1), 73 FR 64687(3), and 73 FR 64700(1), October 30, 2008.

A discussion of the enforcement of the legitimacy provision that is very similar to the one above is at 73 FR 64683(2), October 30, 2008.

Current Guidance and Crosswalk from Lowrance Memo

In the preamble to the 2003 proposal, EPA described the existing guidance on how to determine if recycling is legitimate:

> In the January 4, 1985 preamble to the final rule that established the current definition of solid waste regulations, EPA described several indications of sham recycling. A similar discussion that addressed legitimacy as it pertains to burning materials for energy recovery was presented in the preamble to the January 8, 1988 proposed amendments to the definition of solid waste (53 FR 522), portions of which were never finalized. On April 26, 1989, the Office of Solid Waste issued a memorandum that consolidated preamble statements concerning legitimate recycling into a single list of criteria to be considered in evaluating legitimacy (OSWER directive 9441.1989(19)). This memorandum has been, and still is, the primary source of guidance for the regulated community and for overseeing agencies in distinguishing between legitimate and sham recycling.
>
> As explained in the 1989 memorandum, a legitimacy determination involves evaluating case-specific information to determine whether or not a secondary material being recycled is in effect being used as a commodity, rather than as a waste. The 1989 memorandum identified six criteria to be considered in evaluating this fundamental question, explaining that each recycling scenario is likely to require a case-specific evaluation. The memorandum further explained that, depending on the case-specific facts and circumstances, certain criteria may weigh more heavily than others in making legitimacy determinations. The general criteria presented in the 1989 guidance memorandum are as follows:

- Is the secondary material similar to an analogous raw material or product?
- What degree of processing is required to produce a finished product?
- What is the value of the secondary material?
- Is there a guaranteed market for the end product?
- Is the secondary material handled in a manner consistent with the raw material/product it replaces?
- Other relevant factors (e.g., economics of the recycling process, toxic constituents "along for the ride")?

Source: 68 FR 61582(1)–(2), October 28, 2003.

EPA provided an analysis in the final rule that described how the promulgated legitimacy factors compare to the previous primary guidance on legitimacy, the Lowrance Memo.

EPA also maintains that the legitimacy provision being finalized as part of the exclusions and non-waste determinations is substantively the same as existing policy because we developed the legitimacy factors in 40 CFR 260.43 by closely examining the questions and sub-questions in the Lowrance Memo and in the Federal Register preambles and converting them into four more direct questions. The following explanations show how each of the four factors is derived from the Lowrance Memo and other existing policy statements.

Factor 1—The Hazardous Secondary Material Provides a Useful Contribution

Relevant Lowrance Memo Questions

(1) Is the secondary material similar to an analogous raw material or product?

Is much more of the secondary material used as compared with the analogous raw material/product it replaces? Is only a nominal amount of it used?

Is the secondary material as effective as the raw material or product is replaces?

(3) What is the value of the secondary material?

Is it listed in industry news letters, trade journals, etc.?

Does the secondary material have economic value comparable to the raw material that normally enters the process?

Discussion

The factor addressing "useful contribution" has been distilled from and clarifies concepts in the Agency's existing policy for legitimate recycling. For example, the preamble to the January 4, 1985, recycling regulations noted that if a hazardous secondary material is "ineffective or only marginally effective for the claimed use, the activity is not recycling but surrogate disposal." Similarly, the January 8, 1988, proposed rule discussed "how much energy or material value each waste contributes to the recycling purpose."

In the 1989 Lowrance Memo, the issue of effectiveness was addressed by the following questions: "Is much more of the secondary material used as compared with the analogous raw material/product it replaces?"; "Is only a nominal amount used?"; and "Is the secondary material as effective as the raw material or product it replaces?" The memo also addressed the value of the secondary material by asking, "Is [the secondary material] listed in industry news letters, trade journals, etc.?" and "Does the secondary material have economic value comparable to the raw material that normally enters the process?"

Factor 1 takes these broad concepts of effectiveness and value and turns them into the requirement that the hazardous secondary material in the process must provide a "useful contribution" to the recycling process, that is, it must actually be adding something to the process into which they are being put. The factor provides more specifics than the Memo or preamble by providing a list of ways that a hazardous secondary material could provide that useful contribution to the process. EPA requested comment on other ways in which a hazardous secondary material might provide a useful contribution, but did not receive any from commenters.

Factor 2—The Recycling Process Produces a Valuable Product or Intermediate

Relevant Lowrance Memo Questions

(4) Is there a guaranteed market for the end product?

> Is there a contract in place to purchase the "product" ostensibly produced from the hazardous secondary materials?
>
> If the type of recycling is reclamation, is the product used by the reclaimer? The generator? Is there a batch tolling agreement? (Note that since reclaimers are normally TSDFs, assuming they store before reclaiming, reclamation facilities present fewer possibilities of systemic abuse).

Is the reclaimed product a recognized commodity?

Are there industry-recognized quality specifications for the product?

Discussion

Factor 2 distills several of the questions posed by the 1989 legitimacy memo. The memo addressed the value of recycled products sold to third parties by posing the questions, "Is there a guaranteed market for the end product?" and "Is there a contract in place to purchase the "product" ostensibly produced from the hazardous secondary materials?" The memo addressed the value of recycled products used by the recycler or the generator as process ingredients by posing the questions, "Is the product used by the (recycler)? The generator? Is there a batch tolling agreement?" The "usefulness" of a recycled material was addressed by posing the questions, "Is the (recycled) product a recognized commodity?" and "Are there industry-recognized quality specifications for the product?"

The language of the factors in the legitimacy provision in the final rule reflects these concepts in a concrete manner by, for example, making it clear that the indicator of legitimacy is that a recycling process results in a valuable product or intermediate and that 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."

The Lowrance Memo posed additional questions aimed at distinguishing recycling operations that involve direct use or reuse of secondary materials from recycling operations that involve reclamation. These concepts, however, are not particularly relevant to distinguishing legitimate from sham recycling and are not generally used by implementing agencies in legitimacy analyses, so we therefore did not attempt to capture them in the codified regulatory text.

Factor 3—Managed as a Valuable Commodity

Relevant Lowrance Memo Questions

(5) Is the secondary material handled in a manner consistent with the raw material/product it replaces?

Is the secondary material stored in a similar manner as the analogous raw material (i.e., to prevent loss?)

Are adequate records regarding the recycling transactions kept?

Do the companies involved have a history of mismanagement of hazardous wastes?

Discussion

Although worded somewhat differently, this factor is essentially the same as the fifth question in the Lowrance Memo. Similarly, the 1985 preamble asked whether recyclable hazardous secondary materials were "handled in a manner consistent with their use as raw materials or commercial product substitutes."

In one respect, however, Factor 3 is less restrictive than the Lowrance Memo—the memo posed an additional question, "Is the secondary material stored on the land?" This could be read as implying that storage on the land is an indication of sham recycling. Of course, this question is just one of the more than two dozen questions from the Lowrance memo, that, when taken as a whole, help draw the distinction between legitimate recycling and sham recycling. Also, the Agency is aware of situations where storage of raw materials on the land is a normal part of the manufacturing process. Thus, Factor 3 does not identify land storage as a specific indicator of sham recycling.

Factor 4—The Product Does Not Contain Significant TARs

Relevant Lowrance Memo Questions

(1) Is the secondary material similar to an analogous raw material or product?

Does it contain Appendix VIII constituents not found in the analogous raw material/product (or at higher levels)?

Does it exhibit hazardous characteristics that the analogous raw material/product would not?

Does it contain levels of recoverable material similar to the analogous raw material/product?

(6) Other relevant factors

Are the toxic constituents actually necessary (or of sufficient use) to the product or are they just "along for the ride"?

Discussion

The Lowrance Memo and the definition of solid waste preamble statements from which it was developed have addressed the question of "toxics along for the ride" in a slightly different way than the factor in the final rule. The Lowrance Memo, for example, allows for examination of toxic constituents in the hazardous secondary material destined for recycling and/or in the recycled product. As noted above, Factor 4 is intended to primarily address the question of "toxics along for the ride" in the products of recycling. We believe that the presence of toxic constituents in recyclable hazardous secondary materials is less relevant to assessing the legitimacy of recycling, primarily because much if not most recycling (as well as manufacturing) involves removing or destroying such harmful materials. As reflected in the factor, the central question is whether or not (and in what amount) hazardous constituents pass through the recycling process and become incorporated into the products of recycling. While some may argue that the approach of focusing on toxic constituents in recycled products may be somewhat less restrictive than the policy it would replace, we believe it is a better indicator of legitimate recycling. In cases where a recycler would prefer to compare the virgin feedstock to the hazardous secondary material going into the process, the rule makes it clear that this would be an adequate stand-in for the comparison described in the regulatory text.

Lowrance Memo Questions Not Covered in Factors

A few of the questions from the Lowrance Memo are not covered by the factors in the regulatory text for the legitimacy provision in §260.43. The above discussions address why EPA believes this is appropriate. In the case of the role economics can play in a legitimacy determination, this preamble has discussed how it can inform an overall legitimacy determination, but there is no particular factor on economics.

Relevant Lowrance Memo Questions

(2) What degree of processing is required to produce a finished product?

> Can the secondary material be fed directly into the process (i.e., direct use) or is reclamation (or pretreatment) required?
>
> How much value does final reclamation add?
>
> Is the secondary material stored on the land? (a sub-question of (5) Is the secondary material handled in a manner consistent with the raw material/ product it replaces?)

(6) Other relevant factors

> What are the economics of the recycling process? Does most of the revenue come from charging generators for managing their wastes or from the sale of the product?

For the reasons outlined above, EPA believes that the legitimacy factors in 260.43 are equivalent to the existing legitimacy policy that applies to all recycling.

Source: 73 FR 64708(3)–64710(2), October 30, 2008.

Other FR citations for this topic
The existing legitimacy guidance is mentioned in several places in all three notices.

- October 28, 2003: 61581(3)–61582(1)
- March 26, 2007: 14197(2)
- October 30, 2008: 64670(2), 64677(2), 64700(2)

The 2003 proposal addressed the question of how the proposed criteria related to the Lowrance memo with discussions similar to the one in the final rule. These discussions can be found in the October 28, 2003 notice at 68 FR 61585(2) (Factor 1/ Criterion 2), 68 FR 61586(1)–(2) (Factor 2/ Criterion 3), 68 FR 61584(1)–(2) (Factor 3/ Criterion 1), and 68 FR 61587(1) (Factor 4/ Criterion 4)

CFR LANGUAGE

The final regulatory text for legitimacy is presented below. The proposed regulatory text for legitimacy can be found at 72 FR 14216 (1)–(2), March 26, 2007 for the supplemental proposal and 68 FR 61596(2)–(3), October 28, 2003 for the 2003 proposed rule.

260.34 Standards and criteria for non-waste determinations.

[*Preceding CFR text not included*]

§260.34(b): The Administrator may grant a non-waste determination for hazardous secondary material which is reclaimed in a continuous industrial process if the applicant demonstrates that the hazardous secondary material is a part of the production process and is not discarded. The determination will be based on whether the hazardous secondary material is legitimately recycled as specified in §260.43 and on the following criteria:

> (1) The extent that the management of the hazardous secondary material is part of the continuous primary production process and is not waste treatment;
>
> (2) Whether the capacity of the production process would use the hazardous secondary material in a reasonable time frame and ensure that the hazardous secondary material will not be abandoned (for example, based on past practices, market factors, the nature of the hazardous secondary material, or any contractual arrangements);
>
> (3) Whether the hazardous constituents in the hazardous secondary material are reclaimed rather than released to the air, water or land at significantly higher levels from either a statistical or from a health and environmental risk perspective than would otherwise be released by the production process; and
>
> (4) Other relevant factors that demonstrate the hazardous secondary material is not discarded.

[*Remaining CFR text not included*]

260.43 Legitimate Recycling of Hazardous Secondary Materials Regulated under §260.34, §261.2(a)(2)(ii), and §261.4(a)(23), (24), or (25).

§260.43(a) Persons regulated under §260.34 or claiming to be excluded from hazardous waste regulation under §261.2(a)(2)(ii), §261.4(a)(23), (24), or (25) because they are engaged in reclamation must be able to demonstrate that the recycling is 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 the requirements of §260.43(b) and must consider the requirements of §260.43(c) below.

(b) 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, and the recycling process must produce a valuable product or intermediate.

(1) 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.

(2) 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.

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

(1) The generator and the recycler should manage the hazardous secondary material as a valuable commodity. Where there is an analogous raw material, the hazardous secondary material should be managed, at a minimum, in a manner consistent with the management of the raw material. Where there is no analogous raw material, the hazardous secondary material should be contained. Hazardous secondary materials that are released to the environment and are not recovered immediately are discarded.

(2) 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.

(3) 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 other considerations, one or both of the factors are not met, then this fact may be an indication that the material is not legitimately recycled.

However, the factors in this paragraph do not have to be met for the recycling to be considered legitimate. In evaluating the extent to which these factors are met and in determining whether a process that does not meet one or both of these factors is still legitimate, persons can consider the protectiveness of the storage methods, exposure from toxics in the product, the bioavailability of the toxics in the product, and other relevant considerations.

261.2(a)(2)(ii) Exclusion for Hazardous Secondary Materials That Are Legitimately Reclaimed Under the Control of the Generator in Non-Land-Based Units.

§261.2(a)(2)(ii):A hazardous secondary material is not discarded if it is generated and reclaimed under the control of the generator as defined in §260.10, it is not speculatively accumulated as defined in §261.1(c)(8), it is handled only in non-land-based units and is contained in such units, it is generated and reclaimed within the United States and its territories, it is not otherwise subject to material-specific management conditions under §261.4(a) when reclaimed, it is not a spent lead acid battery (see §266.80 and §273.2), it does not meet the listing description for K171 or K172 in §261.32, and the reclamation of the material is legitimate, as specified under §260.43. (See also the notification requirements of §260.42). (For hazardous secondary materials managed in land-based units, see §261.4(a)(23)).

261.4(a)(23) Exclusion for Hazardous Secondary Materials That Are Legitimately Reclaimed Under the Control of the Generator in Land-Based Units.

§261.4(a)(23): Hazardous secondary material generated and reclaimed within the United States or its territories and managed in land-based units as defined in §260.10 of this chapter is not a solid waste provided that:

[*Preceding CFR text not included*]

(v) The reclamation of the material is legitimate, as specified under §260.43 of this chapter; and

[*Remaining CFR text not included*]

261.4(a)(24) Exclusion for Hazardous Secondary Materials That Are Transferred for the Purpose of Legitimate Reclamation.

§261.4(a)(24): Hazardous secondary material that is generated and then transferred to another person for the purpose of reclamation is not a solid waste, provided that:

> [*Preceding CFR text not included*]
>
> (iv) The reclamation of the material is legitimate, as specified under §260.43 of this chapter;
>
> [*Remaining CFR text not included*]

261.4(a)(25) Exclusion for Hazardous Secondary Materials Exported for Reclamation.

§261.4(a)(25): Hazardous secondary material that is exported from the United States and reclaimed at a reclamation facility located in a foreign country is not a solid waste, provided that the hazardous secondary material generator complies with the applicable requirements of paragraph (a)(24)(i)–(v) of this section (excepting paragraph (a)(v)(B)(2) of this section for foreign reclaimers and foreign intermediate facilities)[….]

[*Remaining CFR text not included*]

261.2 Definition of Solid Waste.

[*Preceding CFR text not included*]

§261.2(f): *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide 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. 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.

ACRONYMS

CFR	Code of Federal Regulations
CRT	cathode-ray tube
D.C.	District of Columbia
DSW	definition of solid waste
e-CFR	electronic Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
FR	Federal Register
OSWER	Office of Solid Waste and Emergency Response
RCRA	Resource Conservation and Recovery Act
TARs	Toxics Along for the Ride

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