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Comments of
IPC – Association Connecting Electronics Industries

On

The U.S. Environmental Protection Agency's Definition of Solid Waste
Proposed Rule
(Docket ID No. EPA-HQ-RCRA-2010-0742)

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EPA’s Definition of Solid Waste Proposed Rule**

Table of Contents

I.	Introduction	3
II.	The 2011 Proposed Rule is Outside EPA’s Authority under RCRA	4
III.	The 2011 Proposed Rule Discourages Sustainable Materials Management	5
IV.	EPA’s Environmental Justice Analysis is Flawed and Should Not Be Used to Justify the 2011 Proposed Rule.....	7
V.	The Transfer-Based Exclusion Should Not Be Replaced With an Alternative RCRA Subtitle C Regulation	8
	A. The Transfer-Based Exclusion Provides the Greatest Opportunity for Encouraging Recycling	9
	B. The Replacement of the Transfer-Based Exclusion is Based on Faulty Assumptions .	9
	C. EPA’s Justification for Replacing the Transfer-Based Exclusion Contradicts Their Finding in the 2008 DSW Rule.....	10
	D. The Alternative RCRA Subtitle C Regulation Would Result in a Useless DSW Rule	11
VI.	Metal-Bearing Hazardous Secondary Materials Should Qualify for the Remanufacturing Exclusion	12
VII.	Conclusion.....	14

I. Introduction

IPC – the Association Connecting Electronics Industries appreciates the opportunity to comment on the U.S. Environmental Protection Agency’s (EPA) proposed modifications to the Definition of Solid Waste (DSW) rule (hereafter referred to as the 2011 proposed rule). IPC is a global trade association representing over 2,000 member companies in the United States. IPC represents all facets of the electronics interconnect industry, including design, printed board manufacturing and electronics assembly. Printed boards and electronics assemblies are used in a variety of electronic devices including cell phones, computers, pacemakers, automobiles, and sophisticated missile defense systems.

IPC believes that EPA’s application of the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations to the reuse of secondary materials that have not been discarded is beyond the authority provided under RCRA. A series of court rulings¹ have concluded that EPA does not have the authority to regulate secondary materials that have not been discarded. The courts strongly believe that secondary materials sent for recycling have not been discarded and do not fall under EPA’s RCRA jurisdiction. Therefore, the DSW rule should not regulate secondary materials sent for recycling.

Despite our belief that the regulation of secondary materials destined for recycling is beyond EPA’s authority under RCRA, IPC believes the 2008 DSW rule struck a delicate and appropriate balance between removing regulatory barriers in order to encourage recycling and EPA’s mandate to maintain environmental protections. IPC is extremely disappointed that the Agency has proposed to reverse essential provisions of the 2008 DSW rule that would have encouraged resource conservation, recycling, and sustainable materials management.

The 2011 proposed rule contradicts EPA’s overall goals of encouraging recycling and sustainable materials management. The 2011 proposed rule imposes regulatory barriers that would prevent cost effective recycling of secondary materials. EPA’s plan for sustainable materials management² states that the regulatory regime must shift from waste management to materials management in order to ensure a sustainable future. Regulations should encourage the reuse and conservation of materials rather than imposing onerous permitting and recordkeeping requirements that stifle industry’s ability to recycle and reclaim secondary materials. Any revisions to the DSW rule must encourage recycling and reclamation of secondary materials in order to ensure the Agency moves towards its goal of achieving sustainable materials management.

The transfer-based exclusion, as finalized in the 2008 DSW rule, is integral to the EPA’s ability to promote a future of sustainable materials management. The 2011 proposed rule would replace the transfer-based exclusion with a burdensome alternative RCRA Subtitle C regulation that will

¹ *American Mining Congress v. EPA*. 824 F. 2d 1177 (DC Cir. 1987). *American Petroleum Institute v. EPA*. 216 F, 3rd 50, 58-59 (DC Cir. 2000). *American Mining Congress v. EPA*. 907 F.2d 1179, 1186 (DC Cir. 1990). *Association of Battery Recyclers v. EPA*. 208 F.3rd 1047 (2000). *Safe Food and Fertilizer v. EPA*. 350 F.3d at 12681263 (DC Cir. 2003).

² Sustainable Materials Management: The Road Ahead. U.S. Environmental Protection Agency. June 2009.

fail to encourage manufacturers to recycle their secondary materials. The removal of the transfer-based exclusion from the 2008 DSW rule is based on faulty assumptions and misrepresentative data. The transfer-based exclusion should remain a part of the DSW rule.

Finally, IPC believes the remanufacturing exclusion has the potential to provide some human health and environmental benefits provided the provisions of the exclusion are expanded to include high value secondary materials other than solvents and provided the exclusion take advantage of the principles of natural ecology by allowing remanufactured materials to be used in any appropriate product. IPC strongly encourages the Agency to include metal-bearing secondary materials for the remanufacturing exclusion. Metal-bearing secondary materials typically contain high levels of nonrenewable metals. Inclusion of metal-bearing secondary materials in the remanufacturing exclusion, or another conditional exclusion, would increase reclamation of metals from secondary materials thus reducing raw ore mining and associated environmental and human health concerns. These comments suggest certain conditions that should be met in order for metal-bearing secondary materials to qualify for the exemption.

II. The 2011 Proposed Rule is Outside EPA's Authority under RCRA

In the 2011 proposed rule, EPA cites a number of court cases as the basis for regulating hazardous secondary materials sent for recycling under RCRA. Unfortunately, EPA has misinterpreted the court's intentions and as a result has proposed regulations that are outside EPA's jurisdiction under RCRA. The courts have concluded that sending secondary materials for recycling does not necessarily involve discard, yet the 2011 proposed rule attempts to regulate all secondary materials sent for recycling. The 2011 proposed rule is outside EPA's authority under RCRA.

In a series of decisions beginning in 1987 with *American Mining Congress v. EPA*³, and followed by *American Petroleum Institute v. EPA*⁴, *American Mining Congress v. EPA*⁵, and *Association of Battery Recyclers v. EPA*⁶, the U.S. Court of Appeals for the District of Columbia Circuit has consistently held that RCRA authority over "solid wastes" does not extend to a material unless it is **discarded** by being disposed of, abandoned or thrown away. IPC believes that by attempting to parse the language of these decisions, EPA has too narrowly interpreted them to restrict recycling activities outside the scope of RCRA jurisdiction. It is clear that the predominant inquiry throughout the case law in regards to RCRA jurisdiction is whether or not the materials have been discarded – disposed of, abandoned, or thrown away.

In *Safe Food and Fertilizer v. EPA*⁷ the court upheld EPA's conclusion that materials treated like valuable products should not be regulated as "discarded" wastes. In this decision, the court clearly reiterates the inquiry as to regulation under RCRA as one of discard, regardless of the industry or industries involved. The Court stated:

³ *American Mining Congress v. EPA*. 824 F. 2d 1177 (DC Cir. 1987).

⁴ *American Petroleum Institute v. EPA*. 216 F. 3rd 50, 58-59 (DC Cir. 2000).

⁵ *American Mining Congress v. EPA*. 907 F.2d 1179, 1186 (DC Cir. 1990).

⁶ *Association of Battery Recyclers v. EPA*. 208 F.3rd 1047 (2000).

⁷ *Safe Food and Fertilizer v. EPA*. 350 F.3d at 12681263 (DC Cir. 2003).

“We have held that the term ‘discarded’ cannot encompass materials that ‘are destined for beneficial reuse or recycling in a continuous process by the generating industry itself’...We have also held that materials destined for future recycling by another industry *may* be considered ‘discarded’; that statutory definition does not preclude application of RCRA to such materials if they can reasonably be considered part of the waste disposal problem...But we have never said that RCRA compels the conclusion that material destined for recycling in another industry is necessarily ‘discarded’.”⁸

IPC believes that EPA, through its misreading of the Courts’ intentions, has proposed a regulation that exceeds their authority by regulating secondary materials that have not been discarded. Sending secondary materials for recycling does not involve discard and therefore should not be regulated under RCRA.

III. The 2011 Proposed Rule Discourages Sustainable Materials Management

According to EPA’s report, *Sustainable Materials Management: The Road Ahead*⁹, sustainable materials management strategies should be integrated into regulatory development and encompass life-cycle materials management, rather than solely focusing on waste management. The report explicitly states that “both federal and state governments should make more systematic efforts to enable, encourage, and collaborate with all parts of society to see that materials are used more effectively and efficiently with less overall environmental toll.” IPC believes that the 2008 DSW rule was an opportunity for EPA to move towards a more holistic materials management approach by encouraging the effective and efficient use of materials. On the contrary, the 2011 proposed rule returns the Agency to a regulatory regime that is prohibitive, discourages recycling and moves EPA away from their goal of sustainable materials management.

Over the years, a number of independently published studies, summarized in EPA’s Regulatory Impact Analysis of the 2008 DSW rule¹⁰, identified the RCRA regulatory structure as a barrier to recycling. In 1999, the Energy & Environmental Research Center found, “[r]egulatory barriers result from the EPA RCRA designation [coal combustion byproducts] as solid wastes even when they are utilized rather than disposed of. In the absence of special approval and permitting procedures that discourage the use of coal combustion byproducts because of cost and the time required to complete adjudicatory processes.”¹¹

In 1995, the Reason Foundation stated,

⁸ *Safe Food and Fertilizer v. EPA*. 350 F.3d at 12681263 (DC Cir. 2003).

⁹ *Sustainable Materials Management: The Road Ahead*. U.S. Environmental Protection Agency. June 2009.

¹⁰ Regulatory Impact Analysis, US EPA’s 2008 Final Rule Amendments to the Industrial Recycling Exclusions of the RCRA Definition of Solid Waste, September 25, 2008.

¹¹ EERC. Barriers to the Increased Utilization of Coal Combustion/Desulfurization By-Products by Government and Commercial Sectors – Update 1998, EERC Topical Report, July 1991.

“So whatever recycling is, RCRA applies to it and doesn’t apply to virgin materials used as commercial products – even though recycling operations are already subject to the same environmental regulations as comparable activities using virgin materials, like the Clean Air Act, the Clean Water Act, the Occupational Safety and Health Act, Superfund, and the Emergency Planning and Community Right to Know Act, and the Toxic Substances and Control Act. Many perfectly acceptable and reusable (and regulated) raw materials – salts of heavy metals, acids, toxic solvents, water-reactive material, and so on – become RCRA hazardous wastes the moment they are ‘discarded,’ whatever that means, which virtually guarantees that few people will recycle them...The EPA’s distinctions are important because they affect all recycling operations – and sometimes they destroy the incentive to recycle instead of throw away.”¹²

EPA’s own publication, *Beyond RCRA, Waste and Materials Management in the Year 2020*, recognized the need for reform stating,

“Creating a system truly oriented towards efficient use of resources could also require fundamental changes...so that materials now considered wastes would be seen, whenever possible, as commodities with potential uses. One approach to making such a system work would be to identify materials as ‘wastes’ only when they are clearly destined for disposal; ...that is ‘materials management’ rather than ‘waste management.’ Reducing distinctions between wastes and materials could dramatically improve recycling and reuse rates and, therefore, make great contributions towards conservation of resources.”¹³

The 2008 DSW rule, when adopted by states, would have promoted sustainable materials management. It is extremely unfortunate that EPA has chosen to reverse critical provisions of the 2008 DSW rule. The 2008 DSW rule allows for secondary materials to be recycled outside onerous RCRA hazardous waste regulations if those secondary materials are recycled according to certain specifications. These specifications would allow manufacturers and recyclers to efficiently recycle secondary materials while still protecting the environment and human health. Furthermore, the transfer-based exclusion would allow generators of secondary materials to benefit from the 2008 DSW rule. Most generating facilities, especially small ones, do not have the necessary infrastructure to recycle their secondary materials on-site and therefore must transfer their materials off-site for recycling. The 2008 DSW rule provided strong incentives to recycle secondary materials and encouraged sustainable materials management.

EPA’s regulatory initiatives should serve to advance EPA’s overarching goal of sustainable materials management. Unfortunately, the 2011 proposed rule does not encourage sustainable materials management. For example, the proposed alternative RCRA Subtitle C regulation would increase regulation on secondary materials sent for recycling, thereby causing fewer materials to be sent for recycling. Increased regulation would discourage manufacturers from sending their secondary materials for recycling, which would negatively impact the environment by increasing

¹² The Reason Foundation. “Recycling Hazardous Waste: How RCRA Has Recyclers Running Around in CERCLAS.” October 1995.

¹³ US EPA, Office of Solid Waste. “Beyond RCRA, Waste and Materials Management in the Year 2020.” EPA530-R-02-009. April 20023.

landfilling of secondary materials and the use of virgin materials. Although the longer accumulation time for secondary materials provided by the alternative RCRA Subtitle C regulation is a very small step in the right direction, it does not provide the regulatory relief necessary to effectively promote recycling and sustainable materials management. The 2011 proposed rule would discourage sustainable materials management by placing significant restrictions on the recycling and reclamation of secondary materials.

The 2011 proposed rule imposes regulatory burdens that would discourage companies from recycling valuable secondary materials. The burdens of complying with RCRA hazardous waste regulations provide a disincentive for companies to recycle valuable secondary materials. Under the 2011 proposed restrictions, only heavily regulated RCRA treatment, storage and disposal facilities (TSDF) would be allowed to recycle secondary materials. The regulatory compliance costs imposed on TSDFs are extremely high, which discourages many companies from recycling secondary materials. This serves to increase the price and severely limit recycling options for secondary materials producers. In early 2011 a recycling facility in Arizona stopped reclaiming electroplating sludge due to burdensome and costly regulations associated with being a TSDF. This facility was the last U.S.-based recycler that accepted electroplating sludge, a byproduct of electronics manufacturing, for reclamation. Currently, there is one facility in Canada, while the majority of facilities are located in China, Europe, and Mexico. Because there are a few facilities recycling electroplating sludge, manufacturers wishing to recycle these materials face increased shipping and processing costs. Further increased shipping of these bulky materials increases energy use and transportation related environmental impacts. Removing regulatory barriers to recycling will encourage facilities in the U.S. to recycle high value secondary materials leading to reduced recycling costs and an increase in materials recycled.

The 2011 proposed rule discourages recycling and reuse of secondary materials thereby encouraging the use of virgin, non-renewable materials. Under burdensome RCRA hazardous waste regulations, landfilling high value secondary materials is often more cost effective than recycling. Regulations should encourage greater recycling and reclamation of secondary materials, not make it more cost effective to dispose of secondary materials in landfills. The 2011 proposed rule should not add regulatory barriers that encourage the use of virgin materials and discourage sustainable materials management.

The 2011 proposed rule will not move the Agency towards a regulatory regime of encouraging sustainable materials management. Instead, the proposed rule, if finalized as currently written, would impose unruly regulatory burdens that would discourage the efficient, effective use of materials.

IV. EPA's Environmental Justice Analysis is Flawed and Should Not Be Used to Justify the 2011 Proposed Rule

EPA's draft Environmental Justice Analysis¹⁴ (draft EJA) is flawed and should not be used to justify the 2011 proposed rule. EPA's draft EJA does not provide a comprehensive review of the potential environmental justice effects of the 2011 proposed rule. In its current form, the draft EJA cannot properly separate possible impacts from the 2008 DSW rule from baseline conditions, cannot properly identify the risks and benefits of the 2008 DSW rule, and does not properly assess the risks and benefits of the 2011 proposed rule. The draft EJA is not an appropriate tool to evaluate how EPA's proposed changes to the DSW rule may affect the disproportionality of impacts.

A detailed review of the draft EJA conducted by ENVIRON International Corporation¹⁵ concluded that EPA's draft EJA does not provide a sound basis for decision-making and should not be used by the Agency to justify the 2011 proposed rule. To be credible, an environmental justice analysis of the DSW rule must be more comprehensive to ensure low-income and minority communities are not disproportionately negatively impacted. It should not be assumed that recycling of hazardous secondary materials poses greater risks to low-income or minority communities than does disposal of hazardous secondary materials. To conduct a thorough and transparent study of environmental justice considerations, EPA should include an evaluation of the risks of increased disposal (e.g. via incineration or land disposal) occasioned by the 2011 proposed rule.

EPA should consider whether the exclusions in the 2008 DSW rule, which stimulated recycling while encouraging a reduction of disposal, inured benefit to low-income and minority communities. EPA's draft EJA acknowledges that there are potential environmental justice benefits from the 2008 DSW rule, such as "reduced risk in communities surrounding existing off-site treatment/disposal facilities" and "reduced transportation risk." However, EPA does not quantify such benefits or explain whether or not they outweigh any increased risks. These benefits should be quantified in order to better understand the risks and benefits of the 2008 DSW rule when compared to the 2011 proposed rule. EPA should revise its draft EJA to better compare environmental justice concerns of the 2008 DSW rule and the 2011 proposed rule.

EPA has proposed major changes to the DSW rule – largely on the basis of environmental justice concerns – without having determined if the proposed rule will advance the cause of environmental justice or set it back. ENVIRON's analysis of EPA's draft environmental justice analysis is thorough and should be used by the Agency to inform a revision of the environmental justice analysis.

V. The Transfer-Based Exclusion Should Not Be Replaced With an Alternative RCRA Subtitle C Regulation

Replacing the transfer-based exclusion in the 2008 DSW rule with an alternative RCRA Subtitle C regulation would render the DSW rule effectively meaningless. The alternative RCRA Subtitle

¹⁴ EPA Environmental Justice Analysis of the Definition of Solid Waste Rule. June 30, 2011. EPA-HQ-RCRA-2010-0742-0004,

¹⁵ ENVIRON International Corporation. Review of EPA's Draft Environmental Justice Analysis of the Definition of Solid Waste Rule. October 2011.

C regulation does not provide the regulatory relief necessary to encourage recycling and sustainable materials management. We strongly urge EPA not to replace the transfer-based exclusion.

A. The Transfer-Based Exclusion Provides the Greatest Opportunity for Encouraging Recycling

The transfer-based exclusion provides the greatest opportunity for increasing the recycling of secondary materials. The transfer-based exclusion removes unnecessary regulatory burdens for recycling valuable secondary materials allowing generators to transfer secondary materials off-site for recycling. Allowing generators to transfer secondary materials off-site for recycling to facilities other than TSDFs will encourage recycling and therefore lead to more secondary materials recycled. This will create more opportunities for recycling facilities which will lead to more recycling facilities that accept secondary materials for recycling. More recycling facilities will give generators of secondary materials more options for recycling, causing more competition among recyclers and therefore a drop in recycling costs. The transfer-based exclusion would empower the marketplace to create new and cost-effective recycling options that would produce the win-win situation of benefiting the environment and saving money.

RCRA hazardous waste regulations severely discourage companies from willingly undertaking the recycling of secondary materials, such as electroplating sludge from electronics manufacturing. One company, Micronutrients, which was featured on the Discovery Channel's Green Magazine TV¹⁶, would have benefited from the 2008 DSW rule if the state it was located in adopted the 2008 DSW rule. Under the provisions of the 2008 DSW rule, Micronutrients could have cost effectively recovered the valuable copper contained in electroplating sludge because the material would have been exempted from RCRA hazardous waste regulations because it was recycled according to certain specifications. This company is only one example of the recycling that would be encouraged by the removal of regulatory barriers under the DSW rule. The 2011 proposed rule would effectively stop Micronutrients and other facilities from recycling high value secondary materials outside RCRA hazardous waste regulations. This would cause companies to lose a large source of their revenue and cause secondary materials to be landfilled as opposed to being recycled.

Due to onerous RCRA hazardous waste regulations that suppress resource conservation and reuse, electroplating sludge is often landfilled instead of being recycled. The transfer-based exclusion would encourage the recycling of electroplating sludge, and other valuable secondary materials.

B. The Replacement of the Transfer-Based Exclusion is Based on Faulty Assumptions

¹⁶ Aired June 25, 2009 on the Discovery Channel.

EPA's justification for replacing the transfer-based exclusion with an alternative RCRA Subtitle C regulation is based on faulty assumptions and misrepresentative data. In the 2011 proposed rule, EPA relies on a number of studies and assessments¹⁷ to justify the extensive changes to the 2008 DSW rule. These assessments, which examine environmental harm associated with pre-2008 exclusions over the past 28 years, should not be used to draw decisive conclusions about the potential for environmental harm due to the 2008 DSW exclusions. Additionally, a substantial percentage of the cited damage cases arise from a few select recycling exclusions, most notably scrap metal and battery recycling. Instead of wide ranging and complete evisceration of the 2008 DSW exclusions, the requirements in the 2011 proposed rule should be narrowly focused to address the problems with certain types of hazardous waste recycling.

In the 2011 proposed rule, EPA illogically assumes violations of regulations in order to justify imposing new regulations. EPA has not provided adequate quantitative evidence that signifies facilities are or can be expected to violate the 2008 DSW rule. The damage cases used to justify the 2011 proposed rule do not demonstrate that the 2008 DSW rule fails to regulate uncontrolled releases of hazardous substances. No other data that supporting EPA's assumption has been presented nor are we aware of any such data. Furthermore, no evidence was provided that the 2008 DSW rule would legalize the release of hazardous substances that may have a disproportionate impact on low income or minority populations. Therefore, EPA's justification for revising the 2008 DSW rule and putting forth the 2011 proposed rule is based on faulty logic and unjustified.

C. EPA's Justification for Replacing the Transfer-Based Exclusion Contradicts Their Finding in the 2008 DSW Rule

EPA's justification for replacing the transfer-based exclusion with an alternative RCRA Subtitle C regulation contradicts the Agency's rationale for finalizing the transfer-based exclusion in the 2008 DSW rule. EPA states that the 2008 DSW rule will encourage beneficial recycling without causing adverse impacts to human health and the environment. Conversely, in the 2011 proposed rule, EPA says that certain provisions of the 2008 DSW rule lack the necessary controls to ensure human health and environmental protection. The 2008 DSW final rule states that EPA believes the rule provided the necessary environmental and human health protections while simultaneously promoting recycling.

“EPA expects that [the 2008 DSW rule] will encourage and expand the safe, beneficial recycling of additional hazardous secondary materials. [The 2008 DSW rule] is consistent with EPA's longstanding policy of encouraging the recovery, recycling, and reuse of valuable resources as an alternative to disposal (i.e.,

¹⁷ Assessment of Environmental Problems Associated with Recycling of Hazardous Secondary Materials, 2007. Correlation of Recycling Damage Cases with Regulatory Exclusions, Exemptions or Alternative Standards, 2011.

landfilling and incineration), while at the same time maintaining protection of human health and the environment.”¹⁸

The 2011 proposed rule contradicts EPA’s assertions in the 2008 DSW rule by saying the 2008 DSW rule lacks important environmental and human health protections. The 2011 proposed rule states,

The conditions for the transfer-based exclusion in the 2008 DSW final rule lack several important implementation provisions that the Subtitle C requirements for treatment, storage, and disposal facilities provide...EPA has performed a detailed regulatory comparison of the 2008 DSW final rule with the hazardous waste regulations, identifying significant differences that could lead to the potential for an increased likelihood of environmental and public health hazards...”¹⁹

The language in the 2011 proposed rule contradicts EPA’s determination in the 2008 DSW rule that the 2008 DSW rule will encourage recycling while simultaneously maintaining protection of human health and the environment. It is unfortunate that the EPA has abandoned decades of hard work that supports their conclusions in the 2008 DSW rule. EPA should uphold the transfer-based exclusion as finalized in the 2008 DSW rule in order to promote sustainable materials management.

D. The Alternative RCRA Subtitle C Regulation Would Result in a Useless DSW Rule

The proposed alternative RCRA Subtitle C regulation does not provide the necessary regulatory relief to encourage recycling. EPA wrongly asserts that more facilities will recycle their secondary materials if they are allowed to accumulate those materials for a longer period of time without obtaining permits. A longer accumulation time for secondary materials would not provide enough regulatory relief to encourage increased recycling of secondary materials. As discussed in Section V.A. of these comments, the transfer-based exclusion would change the recycling markets to encourage the recycling of secondary materials by providing generators and recycling facilities the opportunity to recycle secondary materials outside burdensome and costly RCRA hazardous waste regulations. The proposed alternative RCRA Subtitle C regulation is unlikely to change recycling markets by simply allowing a longer accumulation time for secondary materials. The proposed alternative RCRA Subtitle C regulation will not provide the regulatory relief needed to encourage the recycling of secondary materials.

IPC encourages EPA to retain the transfer-based exclusion as finalized in the 2008 DSW rule. Should the Agency believe stronger protections for certain hazardous secondary materials are needed under the transfer-based exclusion, we suggest the Agency implement an enhanced notification system and a better tracking system.

¹⁸ Federal Register Vol. 73, No. 211, Thursday, October 30, 2008.

¹⁹ Federal Register Vol. 76, No. 141, Friday, July 22, 2011.

VI. Metal-Bearing Hazardous Secondary Materials Should Qualify for the Remanufacturing Exclusion

IPC believes the remanufacturing exclusion should be expanded to include metal-bearing hazardous secondary materials. Metal-bearing hazardous secondary materials are high value materials because of their metal content. Encouraging the recycling of metal-bearing hazardous secondary materials through the remanufacturing exclusion would significantly reduce the need to continue the mining of virgin metals, thus lowering the environmental and human health impacts associated with mining raw ore. Including metal-bearing hazardous secondary materials under the remanufacturing exclusion would encourage recycling and sustainable materials management.

Some of these metal-bearing hazardous secondary materials may not be hazardous but are still subject to RCRA hazardous waste regulations because they are a listed hazardous waste. For example, the original listing for F006 was made in 1980. The listing determination was based on the fact that wastewater treatment sludges from electroplating operations was known to contain a variety of metals, namely chromium, nickel, and complex cyanides. Many of the original conditions upon which this listing was based no longer exist in the industry. For example, although chromic-sulfuric acid etchant was widely used in the printed circuit board industry in the mid-1970s, its use waned in the late 1970s and early 80s. It now has been completely replaced with non-chrome etchants such as ammonia-based etchants. The use of cyanide plating in the industry has also been sharply reduced. It is no longer accurate to say that all or even most F006 waste contains hazardous constituents. Therefore, F006 should be excluded from RCRA hazardous waste regulations if legitimately recycled.

Metal-bearing hazardous secondary materials are managed as a valuable commodity because of their metal content. Therefore, transferring those materials to a third party for reclamation does not involve discard. For example, copper ore normally contains less than one percent copper, whereas copper sludge from the printed circuit board industry contains an average of 10-15 percent copper. Wastewater treatment sludge from electroplating operations, predominately from the metal finishing and printed board industries represent one of the largest sources in the United States of untapped metal-bearing secondary materials amenable to metals recovery. Recyclers realize the value of metal-bearing materials and therefore are not inclined to speculatively accumulate the material or discard it. Metals are extremely valuable and therefore encouraging their reclamation would be beneficial to industry and the environment.

IPC believes that the remanufacturing exclusion should not be limited to materials that, when remanufactured, are used only in the same original product. The principles of industrial ecology envision the industrial process following the natural order, where the waste from each natural system is the input to another natural system in an endless cycle of conservation and reuse. The key to success of this natural ecology is that one organism uses another organism's waste as food. Therefore, it is impractical to put in place regulations, such as the 2011 proposed rule, that prohibit or severely restrict one industry from sending their wastes (secondary materials) off-site for recycling that can then be reused. Below are just a few examples of secondary materials that are legitimately recycled off-site and ultimately reused.

- Spent cupric chloride etchant from electronics manufacturing can be reclaimed off-site to recover copper. The reclaimed copper can be used in the manufacture of copper hydroxide fungicides, copper sulfate and tribasic copper chloride for use as mineral supplements in the hog and chicken feedstock industries, and copper oxide for the pigment market as well as for the treated wood industry.
- Spent ammoniacal etchant is reclaimed off-site to recover the ammonium chloride portion, which is used new etch solution. The new etch solution is then returned to the electronics industry, but the metal constituent is incorporated into copper sulfate, copper oxide, and a variety of other specialty formulations.
- Other spent plating baths, such as electroless copper, electroless nickel, and gold are reclaimed by suppliers or other chemical processors.
- Cyanide bearing solutions that often contain reclaimable precious metals. Any precious metals are typically recovered by chemical suppliers/manufacturers and returned to the market.
- Solder dross, a byproduct of electronics manufacturing, is treated off-site and then sent back to electronics facilities and other solder users.

The 2011 proposed remanufacturing exclusion ignores the natural economy of an ecosystem by requiring an industry to use its own waste in order to qualify for this exclusion. EPA should expand the remanufacturing exclusion to include high-value secondary materials that are legitimately reclaimed for inputs into another industry.

Based upon the conditions for remanufactured solvents put forth in the proposed rule, we propose the following conditions for metal-bearing hazardous secondary materials to qualify for the remanufacturing exclusion.

1. The metal-bearing hazardous secondary material must contain a metal. Metals common to the electronics industry include, but are not limited to, copper, gold, nickel, and tin.
2. The metal-bearing hazardous secondary material must contain an acceptable concentration²⁰, as determined by the marketplace, of a metal or any combination of metals. If the metal-bearing hazardous secondary material has a positive market value and a buyer is willing to pay a fee to collect the material for recycling then the metal-bearing hazardous secondary material should qualify for the exclusion. It is important to note that due to the fluidity of metal markets, the price of metals cannot be predetermined. Therefore, in some instances buyers may charge to accept metal-bearing secondary materials but that is not indicative of the metals' inherent value.
3. Remanufactured metals can be used in virtually any application that requires metals. Therefore, in lieu of a full list of applications²¹, IPC and its members suggest EPA require remanufactured metals to meet the same necessary quality and performance specifications as virgin metals used in a specific application.

²⁰ It is not practical to specify a level of concentration for metals. Due to the inherent nature of metals, their price is in constant flux, giving recycling facilities discretion over whether to accept metal-bearing materials for reclamation. Setting a finite concentration level will further discourage recycling of high value, non-renewable metals.

²¹ The 2011 proposed rule lists relevant applications for remanufactured solvents as a condition for qualifying for the remanufacturing exclusion.

IPC and its members are unable to list all relevant applications for remanufactured metals because it would be impossible. Due to the vast number of applications of metals in manufacturing, remanufactured metals can be used in a variety of ways in a variety of industries, making it nearly impossible to list all applications for recycled metals. It is impractical to require recycling facilities to first determine and then disclose the applications for all the recycled metals they process. Furthermore, unnecessarily limiting the applications of recycled metals that would qualify for the remanufacturing exclusion would discourage recycling of metal-bearing hazardous secondary materials.

We strongly encourage EPA to broaden the scope of the remanufacturing exclusion to include metal-bearing hazardous secondary materials. Broadening the remanufacturing exclusion will encourage the recycling of high value secondary materials that otherwise would be disposed of via incineration or in a landfill. Including high value metal-bearing hazardous secondary materials in the remanufacturing exclusion will encourage recycling and sustainable materials management.

VII. Conclusion

IPC is extremely concerned by the 2011 proposed DSW rule. EPA and interested stakeholders have devoted countless resources for over a decade towards developing a workable, justifiable and beneficial DSW rule. The resulting 2008 DSW rule encompasses necessary requirements that will protect human health and the environment while simultaneously promoting recycling and sustainable materials management. Conversely, the 2011 proposed rule will put in place a regulatory regime that will hinder recycling without a definite positive impact on human health and the environment. The 2011 proposed rule moves the Agency away from accomplishing their goals.

As the courts have repeatedly made clear, EPA does not have the authority to regulate secondary materials that are not discarded. Sending secondary materials off-site for recycling does not involve discard. We strongly believe that the provisions of the 2011 proposed rule are outside EPA's authority under RCRA.

The 2011 proposed rule imposes regulatory barriers that will discourage recycling of valuable secondary materials. This is incongruous with EPA's goal of sustainable materials management.

IPC is particularly concerned with the proposed substitution of the alternative RCRA Subtitle C regulation for the transfer-based exclusion. The alternative RCRA Subtitle C regulation does not provide the necessary regulatory relief to encourage recycling. By not allowing generators to transfer secondary materials off-site for recycling at non-RCRA TSDFs EPA will effectively fail to encourage recycling. The transfer-based exclusion was a key provision of the 2008 DSW rule that removed burdensome regulatory barriers in order to encourage recycling of valuable secondary materials. The final DSW rule should not replace the transfer-based exclusion with the alternative RCRA Subtitle C regulation.

The proposed remanufacturing exclusion must be expanded to include high-value secondary materials other than solvents in order to effectively promote the recycling of secondary materials. According to the principles of natural ecology, remanufactured materials must also be available for use in any suitable product. IPC encourages EPA to include metal-bearing hazardous secondary materials under the remanufacturing exclusion in order to promote the recycling and reuse of high-value metals.

IPC appreciates the opportunity to comment. Please do not hesitate to contact us directly if you have any questions or need additional information.