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United States Environmental Protection Agency  
Washington, D.C. 20460  
Office of Solid Waste and Emergency Response

October 5, 1994

Mr. Thomas Dufficy  
The Silver Coalition  
c/o National Association  
of Photographic Manufacturers, Inc.  
550 Mamaroneck Avenue  
Harrison, New York 10528

Dear Mr. Dufficy:

This responds to a letter dated September 2, 1994, from Mr. Kenneth Kastner on your behalf requesting an interpretation regarding the regulatory status of silver recovery units (SRUs) under the Resource Conservation and Recovery Act (RCRA) regulations. The purpose of Mr. Kastner's letter is to follow-up on a July 13, 1994, meeting with Environmental Protection Agency (EPA) staff on this issue and to obtain written verification of the regulatory interpretations provided at that meeting.

Mr. Kastner first references past EPA correspondence which correctly states that, to the extent that recovery units used to treat wastewater would be defined as a characteristic sludge, they would not be subject to RCRA regulations when sent for reclamation, since they would not be considered solid waste. 40 CFR §261.2(c)(3). He then asks for confirmation that the exclusions provided would apply to characteristic sludges being reclaimed regardless of whether the sludges are produced as a result of required waste-water treatment, i.e., whether the treatment is necessary to achieve compliance with a specific discharge limitation or pretreatment requirement.

As we indicated in our recent meeting with Mr. Kastner, the definition of sludge is not limited to materials generated from wastewater treatment undertaken specifically to meet Federal, state or local discharge or pretreatment requirements. Instead, the term applies to materials generated from wastewater treatment regardless of whether such treatment is required by law or regulation.

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Mr. Kastner also requests confirmation from EPA that 98% pure silver flake material that is recovered from photoprocessing operations and further refined to produce 99.99% pure silver product is not considered to be a RCRA regulated waste. According to Mr. Kastner's letter, the silver flake is essentially "commodity-like" at the point of recovery, i.e., prior to further refining. EPA has stated that metals that are suitable for direct use, or that only have to be refined to be useable, are products, not wastes. 50 FR at 634 (January 4, 1985). Therefore, based on the information provided, the high purity silver flake would be considered a product at the point at which it is recovered from the photoprocessing operation and as such would not be subject to regulation under RCRA.

It is important to note that EPA Regional offices and States authorized to implement the RCRA program make determinations regarding the requirements that apply in specific situations. Also, some States have programs that are more stringent than the Federal hazardous waste program. If you have any further questions on this issue please contact Mitch Kidwell at (202) 260-8551 or Becky Daiss at (202) 260-8718.

Sincerely,

Mike Petruska  
Chief  
Regulatory Development Branch

cc: Kenneth M. Kastner

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Attachment  
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Bryan Cave  
700 Thirteenth Street, N.W.  
Washington, D.C. 20005-3960

September 2, 1994

VIA FAX AND REGULAR MAIL

Mr. David Bussard  
U.S. Environmental Protection Agency  
Office of Solid Waste (5304) (SE240)  
401 M Street, S.W.  
Washington, D.C. 20460

Re: Regulatory Status of Silver Recovery Units in the  
Photoprocessing Industry

Dear Mr. Bussard:

On July 13, 1994 we met with Mike Petruska, Mitch Kidwell, Marilyn Goode and Tim O'Leary to discuss the RCRA regulatory status of residues in units used to recover silver from aqueous streams produced in photoprocessing operations. As a follow-up to that meeting, we would appreciate EPA providing us with an interpretation regarding the regulatory status of silver recovery units ("SRUs").

Silver recovery has long been a common practice in the photoprocessing industry, both for economic purposes and to achieve compliance with applicable wastewater discharge limitations. The use of SRUs is extremely widespread, involving many thousands of individual photoprocessing facilities.

SRUs at photoprocessing facilities may include one or more of the following: chemical recovery cartridges ("CRCs"), chemical precipitation units, ion exchange units and electrolytic recovery units. With regard to CRCs, many photoprocessors will direct (via hard-pipe or otherwise) one or more aqueous streams that contain silver through on-site CRCs. The CRCs are generally piped together in an in-line series of two or more units. The CRCs, which are essentially enclosed containers packed with iron wool, recover the

silver by metallic replacement, typically at recovery efficiencies substantially in excess of 99 percent. The effluent from the CRCs is discharged to a POTW via a sewer connection. When a CRC is periodically replaced, it is disconnected, sealed, and sent off-site as an intact, enclosed container for silver reclamation and refining. Chemical precipitation and ion exchange SRUs are similarly used to remove and recover silver from aqueous streams prior to POTW discharge. These SRUs are also shipped off-site for further silver reclamation and refining in intact, enclosed containers.

Unless SRUs are essentially free of the photoprocessing solutions from which they recover silver, they would be expected to contain material that exhibits the toxicity characteristic for silver. This fact has raised questions as to the RCRA regulatory status of SRUs that are shipped off-site for silver reclamation. We would like EPA to confirm our understanding that, under the federal RCRA program, whether or not SRUs exhibit the toxicity characteristics for silver, they are not solid or hazardous wastes if they (1) contain silver that has been removed and recovered from aqueous streams prior to POTW discharge, and (2) are shipped off-site for further silver reclamation and refining. We would also like EPA to confirm that, because such SRUs are not subject to regulation as solid or hazardous waste, photoprocessors are not required to conduct a waste analysis, to manifest the materials when sending them off-site, or to meet the special requirements applicable to precious metals reclamation.

EPA has already stated that CRCs sent off-site for silver reclamation are not solid wastes if they are "used to treat wastewater" (see footnote 1). The rationale for this result is that CRCs used to treat wastewater include material defined as "sludges," and sludges, unless they are listed wastes, are not regulated as solid wastes if they are reclaimed (see footnote 2). During our meeting, you indicated, and we would also like you to confirm in writing, that this exclusion from the solid waste definition would apply whether or not such treatment is necessary to achieve compliance with a specific discharge limitation or pretreatment requirement (see footnote 3). Based on these views, it is our understanding that SRUs that contain silver that has been removed and recovered from aqueous streams prior to discharge of the wastewater to a POTW are not solid wastes if they are shipped off-site for further silver reclamation and refining, and accordingly, they are not subject to any hazardous waste

requirements including waste analysis, manifesting, or the requirements applicable to precious metals reclamation. We would appreciate your written confirmation of this understanding.

In addition, we would appreciate your confirmation of our understanding that silver flake from electrolytic silver recovery units is not considered to be solid or hazardous waste under the federal RCRA program. This silver flake material consists of essentially pure (over 98%) silver that is recovered from aqueous photoprocessing streams by plating on a negatively-charged electrode. Although this material is directed to silver refiners where it is further refined to produce 99.99 pure silver, silver reclamation is substantially complete when the flake material is produced, with the material being essentially commodity-like from that point. EPA has repeatedly stated that such substantially reclaimed materials are not solid wastes (see footnote 4). Accordingly, it is our understanding that, under the federal RCRA program, silver flake material is not subject to any waste analysis or manifesting requirements, including the requirements applicable to precious metals reclamation. We would appreciate your written confirmation of this understanding, as well.

Thank you for your assistance in this matter, and please call me if you have any questions or desire additional information.

Sincerely,

Kenneth M. Kastner

cc: Mitch Kidwell  
Orlean Thompson

1. See attached letter from Matthew Straus, Chief, EPA Waste Characterization Branch to Thomas Dufficy (January 6, 1987).
2. Id., see 40 C.F. §§40 C.F.R. §§261.1(c)(2), 260.10, and 261.2 Table 1. See generally, Fed. Reg. 50 614 at 618 col. 3 (January 4, 1985), see attached letter from Matthew Straus, Chief EPA Characterization Branch to Shirlee Schiffman (July 18, 1987) (ion exchange canister used to receive metals from wastewater contains

"sludge").

3. See attached letter from E. Abrams to W. Duncan (May 5, 1987) (ion exchange resins containing metals recovered from electroplating rinse water meets RCRA definition of sludge even if rinse water is recycled rather than discharged).
4. See Guidance Manual on the RCRA Regulation of Recycled Hazardous Wastes (March 1986) at 2-223 (attached); attached letter from Matthew Straus, Chief, EPA Waste Identification Branch to D.F. Goldsmith (January 21, 1986), and attached letter from Matthew Straus to Carlene Bassell (October 23, 1985).