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

February 28, 1994

Mr. Scott Donovan, Chemist  
Disposal Control Service, Inc.  
1200 Marietta Way  
Sparks, Nevada 89431

Dear Mr. Donovan:

In your letter of November 18, 1993, you requested an interpretation on the applicability of the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations to silver reclamation operations of spent photographic fixer solutions. I apologize for the delay in our response.

In your letter, you state that a company operating in Northern Nevada called Itronics is receiving silver-bearing spent photographic fixer solutions from a variety of generators. You also state that the State of Nevada acknowledges these solutions to be RCRA hazardous waste when silver is present in concentrations of 5 mg/L or greater. Your letter does not indicate whether in fact the solutions Itronics receives are solutions with silver at or above 5 mg/L. Your letter states that Itronics stores the solutions in tanks prior to chemically precipitating silver salts in the form of a sludge which is then thermally refined on-site.

You also indicate that the supernatant liquid resulting from the chemical precipitation is applied to the land as a fertilizer at a turf farm. In your telephone conversation with Paul Borst of the Office of Solid Waste, you indicated that your understanding was that the supernatant liquid was nonhazardous and that sodium thiosulfate in the liquid was the constituent of value in the fertilizer.

Please understand that EPA cannot comment on the regulatory status of the Itronics facility in Northern Nevada. The regulatory status of this facility is properly determined by the State of

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Nevada through its Department of Environmental Protection. The State of Nevada is authorized to administer and enforce its own RCRA program. This letter will answer in general terms how Federal RCRA regulations apply to the type of operation you describe in your letter.

In order to determine the applicability of RCRA Subtitle C hazardous waste regulations to these activities, it is first necessary to determine if the materials being handled meet the definition of solid waste (and also hazardous waste). There are three secondary materials that require consideration: the spent photographic fixer solution, the precipitated silver sludge and the supernatant liquid resulting from precipitating the sludge. As discussed below, only the spent photographic fixer solution meets the definition of solid waste and is subject to certain Subtitle C regulations.

Regarding the spent photographic fixer solution, RCRA Subtitle C regulation states that materials are solid wastes (that are also hazardous waste) when reclaimed (reclamation is a type of recycling) and when the material being reclaimed most clearly meets the definition of one of four types of materials: spent materials, listed sludges, listed by-products and scrap metal. 40 CFR §261.2(c)(3). Since EPA has previously interpreted spent photographic fixer solution as meeting the definition of spent material (see attached July 16, 1990 letter from Sylvia Lowrance to Ralph Eschborn), it appears that these solutions, assuming they are also hazardous, meet the definition of a solid waste and are subject to certain Subtitle C regulations (specified below).

On the basis of information you have provided in your incoming letter, EPA would consider a silver-bearing sludge precipitated from the spent photographic fixer solution in the manner you describe to be a newly generated sludge exhibiting a characteristic of hazardous waste. Under RCRA Subtitle C regulation, characteristic sludges being reclaimed are not within the definition of solid waste. 40 CFR §261.2(c)(3). Therefore, the silver-bearing sludges would not be subject to Subtitle C regulation. Finally, as mentioned above, you have indicated that the supernatant liquid is nonhazardous and therefore would not be regulated under RCRA Subtitle C.

The remaining issue is what RCRA Subtitle C regulations are

applicable to the management of the spent fixer solution. Provided that economically significant quantities of silver are reclaimed from the solution, the generation, transport and storage prior to reclamation of the solutions is not subject to the general RCRA Subtitle C requirements for recyclable materials at 40 CFR §261.6, but rather a different set of regulatory requirements specified at 40 CFR Part 266 Subpart F. 40 CFR 261.6(a)(2)(iv). Subpart F requirements apply to persons who generate, transport, or store precious metal-bearing hazardous waste being reclaimed. The requirements specify notification requirements under Section 3010 of RCRA, and manifesting requirements. Subpart F also requires persons who store precious metal-bearing hazardous waste being reclaimed to demonstrate through records that these wastes are not being accumulated speculatively.

With regard to the regulatory status of the recycling process, the general RCRA Subtitle C regulatory requirements for recyclable materials (40 CFR §261.6) and the Subpart F requirements for precious metal-bearing wastes being reclaimed specify regulatory requirements for recycling operations. The general recycling provisions do state that, in general, the recycling process is exempt from regulation. Because recycling operations are generally not regulated, the process of precipitating the sludge from the solution is not presently subject to regulation under RCRA Subtitle.

I hope this letter has answered your questions on the Federal program. If you have any additional questions, please contact Mike Petruska of my staff at (202) 260-8551.

Sincerely yours,  
Michael Shapiro, Director  
Office of Solid Waste