



Navy Environmental Quality Fact Sheet



Are you a high volume user of “wet” photographic and X-ray processing?

Would you like to improve this process in the following areas?

- **Meet environmental compliance regulations.** Eliminate the high volume of hazardous waste associated with silver recovery and effluent wastewater processing from “wet” photographic and X-ray developing.
- **Improve workers’ safety and health.** Eliminate hazardous liquid waste handling and exposure to hazardous chemicals.
- **Increase productivity.** Eliminate labor associated with handling and disposing of hazardous waste.
- **Save money.** Reduce waste handling and disposal costs, energy costs, and labor cost associated with the effluent wastewater from “wet” photographic processing.



Dry Silver Recovery System

Large photographic centers at Naval installations must produce sharp, accurate, and high-resolution photographs for reconnaissance missions, accident scenes etc. Digital photographic technology does not yield the high-resolution results that can be obtained from the “wet” processing method. However, “wet” processing using electrolytic recovery and chemical recovery cores for silver recovery result in higher waste generation in the form of liquid sludge and the disposal of the chemical cores. The cold vaporization technology generates a liquid waste stream distillate that can be discharged directly into a sanitary sewer and a dry solid “cake” that is more conducive to silver recovery due to less weight, volume and high silver concentrations. The dry silver recovery process has been successfully demonstrated at NAS Oceana. This system is available through the Navy Pollution Prevention Equipment Program (PPEP).

How can you achieve these improvements?

Use cold vaporization distillation silver recovery technology.

How does this system work?

Cold vaporization and distillation technology exploits the effect of vacuum to obtain low temperature distillation/evaporation of the effluent wastewater in “wet” photographic processing. The result is a distillate that can be discharged directly into a sanitary sewer and a concentrated dry solid “cake” containing high silver concentrations for better recovery.

How will this system save you money?

Reduces waste handling and disposal costs, energy costs, and labor cost associated with “wet” photographic processing.



Typical Process Flow Diagram



How can this technology eliminate or reduce pollution?

This P2 technology replaces current methods of electrolytic plating and chemical recovery cores for silver recovery. Implementation will result in the following pollution reductions:

- Reduces the amount of hazardous wastewater and liquid sludge generated from “wet” photographic and X-ray development processes.

Which processes can benefit most from this technology?

All “wet” photographic processes at Naval installations that have requirements to produce sharp, accurate, and high-resolution photographs, such as: reconnaissance missions, accident scenes, etc.

How can this technology reduce regulatory compliance concerns?

Use of the cold vaporization distillation units will reduce waste handling and disposal costs, and labor cost associated with “wet” photographic wastewater processing. Implementation will result in the following regulatory compliance benefits:

- Reduction in hazardous waste helps facility meet the waste minimization requirement under RCRA, 40 CFR 262.41 (a) (6).
- May help facilities eliminate satellite storage areas and record keeping associated with hazardous photographic wastes.



Achieving Environmental Compliance Through Pollution Prevention

Every day the Navy faces the challenge of operating and maintaining the fleet while complying with environmental regulations. This burden can be reduced by using pollution prevention technologies and methods to reduce compliance requirements. This fact sheet is one in a series designed to encourage activities to use pollution prevention technologies and methods. The overall goal of this series is to promote sustained environmental compliance at the lowest life-cycle cost.

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