

Completed Pollution Prevention Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Coolant Recovery System Upgrade and Addition Los Alamos National Laboratory

Original Problem

The two original machines at the Sigma machine shop were generating fifteen 55-gallon drums of waste coolant every year, costing approximately \$17,000 for disposal. The coolant had to be changed frequently due to bacterial contamination, and one 55-gallon drum of concentrated coolant was purchased every year at a cost of \$1000.

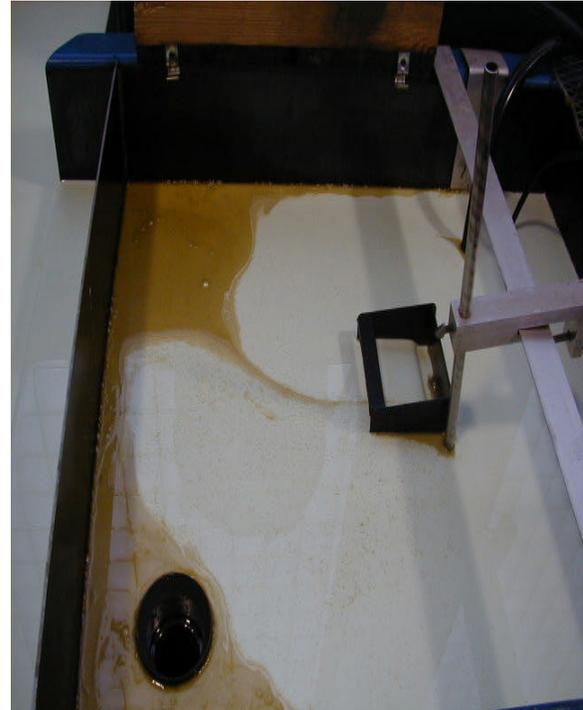
The Project Solution

The machine shop switched to a non-toxic brand of coolant to reduce potential health risks to the employees. A passive decanter system was installed that allowed used coolant to separate and the oil to be skimmed off the surface and recycled. Aerators were installed at each machine so that the anaerobic bacteria would not have a chance to grow and contaminate the coolant. Each machine is generally drained about once a month so the used coolant can be separated and refreshed with some new coolant. Most recently a duplicate coolant separator system was set up for the grinding machines in a different area of the laboratory.

Value of Improvement

The combined value of the reduced waste disposal and concentrated coolant purchases totals approximately \$18,000 per year. The new control system greatly reduces the chance for coolant to spill, and the employees are free to pursue other tasks instead of manually draining coolant out of the machines. There are now six machines at the machine shop, and the machine shop has only purchased one 55-gallon drum of concentrated coolant in the past four years.

Lifecycle Waste Reduction	
Lifecycle Waste Reduction	15x55gal / year
Commencement Date	2001
Project Useful Life (Years)	15+



DOE Monetary Benefits	
Total Project Cost	\$34,500
Lifecycle Savings	~\$18,000 / year
Return on Investment	NA

Benefits At-A-Glance

- The new control system will reduce the chance of coolant overflowing from the machines, decreasing concerns about slipping and exposure to employees. The system can control up to 25 machines.
- The amount of waste coolant was reduced from about fifteen 55-gallon drums per year to zero.
- Savings from reduced waste disposal and purchases of concentrated coolant total approximately \$18,000 per year.

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	Summary Data
Priority Area:	Waste Minimization Projects
Project Type:	Recycling
Total Project Cost:	\$34,500
Lifecycle Savings:	~\$18,000 / year
Implementing Group:	MST-6
Benefiting Group:	MST-6
Useful Life Years:	15+
Return on Investment:	NA
Lifecycle Waste Reduction:	~15 x 55-gallon drums of coolant / year
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