

WATER TREATMENT SUCCESS UTILIZING THE MART EQ-1

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The Mart EQ-1 was used to treat the wastewater generated by aqueous parts washers. The goal was to reduce, minimize or eliminate the hazardous waste generated by the aqueous parts washers. However, the application of this equipment could also be extended to treatment of non-hazardous wastewater. The machine takes the wastewater and, through the addition of an encapsulating powder, removes or reduces the contaminants. Wastewater from the parts washer, or from any process, is pumped into the EQ-1's upper tank and mixed with the encapsulating powder for approximately five to eight minutes. The treated water is then gravity fed through a 30 micron filter paper which captures the encapsulated sludge and allows the clarified water to fall into the lower storage tank. The clarified water is returned to the parts washer to be used over and over. The encapsulated sludge is rolled up in the filter paper and allowed to drain awaiting characterization and disposal. The equipment has proven to be very durable and performed extremely well. The non-technical operation of the equipment made it very easy for the technicians to operate and maintain.

Two disadvantages were noted. (a) The unit is only capable of holding 125 gallons of untreated water in the upper tank and 125 gallons of clarified water in the lower tank. If the volume of water to be treated exceeds 250 gallons then additional storage for the excess is necessary. (b) The operator must insure that the upper tank is thoroughly rinsed to remove all the encapsulated sludge or it has a tendency to harden and block the valves. It is highly recommended that State regulators be consulted to determine if a treatment permit is required to process hazardous waste water.

Numerous advantages were realized. This unit effectively reduced waste generation by recycling the water. The clarified water also retained approximately 80% of its soap, resulting in direct savings to the shop. The oil and grease was effectively encapsulated eliminating the need for skimmers on the parts washers.

In comparison to the current system, the Mart EQ-1 proved to be superior. There was a huge time savings over manual cleanout of the parts washers. Shop personnel were afforded more time to do other jobs rather than the dirty job of cleaning out a parts washer. In the past, technicians spent approximately 8 hours cleaning out their aqueous parts washer and turning in the waste for disposal. The EQ-1 can treat 125 gallons in approximately 30 minutes to an hour. The elimination of the hazardous waste has meant the reduction of the Base's long term liability for that waste, as well as eliminating the paperwork, storage, labeling and disposal costs associated with hazardous waste.

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Cost savings were calculated using a 125-gallon aqueous washer treated on a frequency of once a month. The yearly cost of cleanout and disposal under the past practices would have been approximately \$6,000.00. The cost to treat the same volume of wastewater utilizing the Mart EQ-1 unit was approximately \$600.00. The return on an investment of \$7,000.00 to purchase the EQ-1, would be approximately 14 months.

The users at first were skeptical, but after the demonstration were very impressed. The ease of operation of the unit, the elimination of their personal exposure to hazardous waste and the time they gained to perform other duties all added to their immediate acceptance of the unit.