



Elimination of Paint Sludge Landfill Disposal at Ford Manufacturing Plants.

DESCRIPTION OF THE FACILITY

Nine Ford Motor Company assembly plants world wide and one engine and fuel tank plant have incorporated new technology in their paint departments. The facilities range in age, with the oldest being opened in 1925 (Norfolk Assembly Plant, Norfolk, Virginia) and the newest being opened in 1975 (Ohio Assembly Plant, Avon Lake, Ohio). Each facility employs anywhere from 1,000 to 4,000 individuals depending on the size and production output at the plant. The cars and trucks assembled at these plants include the Ford Focus, Lincoln LS, Econoline van, and European Transit van. Total production for 1998 at the ten facilities is approximately 1.9 million vehicles and 3 million fuel tanks and engines.

DESCRIPTION OF THE OPPORTUNITY BEING ADDRESSED

Typically, the paint spraybooth waterwash systems in automotive assembly plants are chemically-treated to produce a conditioned (detackified) paint sludge, which settles in the sludge basin. Periodically, the sludge basin is drained and the deposited sludge removed for solidification and landfill disposal. A full-scale assembly plant generates about 1000 cubic yards of paint sludge each year.

DESCRIPTION OF THE IMPROVEMENT

Since 1995, a number of Ford assembly plants have used a patented solvent-in-water emulsion to replace conventional chemically-treated water as the scrubbing medium in the paint spraybooth system. This unique chemistry enhances many aspects of spraybooth system operation and serves as the basis for a recycling process that eliminates the need to landfill paint sludge. The recycling program, called EPOC IITM (**E**mulsion **P**rogram for **O**verspray **C**apture), is a service provided by Philip Services Corp.'s Automotive Paint Services Group. The emulsion solubilizes the resin (organic) portion of the paint overspray and disperses the pigment and other inorganic ingredients. Paint sludge in the conventional sense is no longer generated; rather, the emulsion accumulates paint components that are removed periodically by replacing all or part of the recirculating emulsion with fresh emulsion. The saturated emulsion is transported for processing to Philip's dedicated processing facility in Detroit, MI, at which the paint solids are recovered for incorporation into useful products and the active chemical ingredient is recycled for use back into fresh emulsion.

SUBSTANCE ADDRESSED

Landfill disposal of paint sludge

REDUCTION OBTAINED

> 90%

CAPITAL / OPERATIONS INVESTMENT:

~ \$1 Million per Facility

ENVIRONMENTAL HIERARCHY LEVELS:

Source reduction and waste stream elimination