

Trimac Transportation

Company Overview

Trimac Transportation is a 32-person facility located in the Regional Municipality of Halton, which cleans semi-bulk containers (totes) and portable blending tanks (portables) of residual paints for the automotive industry. The vessels are cleaned with water, chemicals and solvents and returned to the paint vendor.

The solvents used in the facility (stripper and wash solvent) contributed subject pollutants (methylene chloride, toluene, ethyl benzene and xylenes) to the sanitary sewer and are listed as toxics under the *Canadian Environmental Protection Act* and exceeded the Regional Municipality of Halton's new sanitary sewer discharge limits.

Trimac Transportation's management committed to improving their environmental performance through commissioning a Pollution Prevention Assessment to be conducted under the Toronto Region Sustainability Program.



Employee using soluble media blasting

P2 Assessment Process

To meet the objectives of the Toronto Region Sustainability Program, Trimac underwent a pollution prevention assessment by a consulting firm, Enviro-Stewards Inc. This review mapped all processes in the Trimac facility and identified processes that could be targeted for pollution prevention. These included: tote and portable cleaning, valve cleaning, and hazardous waste storage in roll-off bins.

Summary of Findings

As identified by the in-plant study, solvents are the primary ingredients of concern at Trimac. Adhesive from labels left behind on totes and portables is presently removed with a mixture of stripper and wash solvent. Methylene chloride based stripper and wash solvent mixture are also used to remove paint on the exterior of totes and portables.

Solvent was also a concern in valve cleaning. Valves (from the base of the totes) are disassembled and cleaned in the valve cleaning room in three sinks using caustic and wash solvent. The valves are then reassembled and reattached to the totes. The rinse water (from a constantly running tap) is discharged to the sanitary sewer. The caustic solution is returned to the caustic reuse tank and the wash solvent is discharged to a heated roll-off bin located outside the facility.

Paint retained in the totes is presently drained to a trench drain and then flushed to the roll-off bin located outside the facility. The contents of the roll-off bin are intermittently treated with sulphuric acid and the decant phase is discharged to the sanitary sewer.

"The OCETA program played an integral role in assisting Trimac with meeting and exceeding our environmental challenges. The smooth delivery of the program was exactly as we had anticipated which made our goals that much easier to attain."

Paul Craig, Manager, Washrack and Environmental Services

P2 Solutions, Environmental Results and Related Cost Savings

The solvents used for adhesive and paint removal can be eliminated by changing the cleaning process to one using soluble media blasting of labels and portables with baking soda. A dry compressed air based system was found to be very successful in removing label residue and residual paint. The soda ash dissolves in the water and hence can be flushed to the sanitary sewer. This recommendation eliminates over 24 tonnes per year of methylene chloride (60 tonnes per year of subject pollutants). The estimated cost to (end-of-pipe) treat these pollutants would have added \$162,000/yr more than the annual cost of the in-plant measures. The decision to implement the soluble media system has produced a return on investment of only two and a half months.

By refitting the valve cleaning station with covered tanks/sinks in series, the wash solvent solution can be reused over a period of several days. The contents of the first (dirtiest) sink/tank can be intermittently transferred to storage drums (for off-site recycling). The contents of the second (cleaner) tank can be transferred to the first tank and fresh wash solvent could be added to the second tank. This will reduce both solvent and hazardous waste by 6 tonnes a year each, annually saving almost \$40,000. This shorter term solution has a payback of less than a month. An innovative solution to eliminate the solvent wash step altogether using ultrasonics is also being investigated by Trimac.

The continuous flow of rinse water can be reduced with a foot-operated valve, thus reducing over 600 tonnes per year of water consumption. The cost savings are just over \$700 a year, but the payback of two and a half months makes the option worthwhile. Another alternative to reduce hazardous wastes is being tested.

A vacuum system can be used to remove retained paint from totes. The recovered paint can be segregated by type to facilitate paint reuse alternatives. Implementing a vacuum system will eliminate the need for the roll off bin and immediately reduce the quantity of hazardous waste requiring disposal by almost 50 tonnes per year. This system would also reduce over 30 tonnes of water per year, and almost 2 tonnes of Greenhouse Gases (GHGs). This project will have a return on investment of 23 months and will generate annual savings of \$23,000.

In all, the six pollution prevention recommendations made in the assessment reduced **24 tonnes/yr of toxics, 68 tonnes of subject wastes, 55 tonnes/yr of hazardous wastes, 810 tonnes/yr of water and 2 tonnes/yr of GHGs, with an overall payback of 5 months.** This P2 assessment virtually eliminated the use of a CEPA toxic, reduced worker exposure, provided water savings and improved spill prevention.

Program delivered by:



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