

# ChemTRAC Pollution Prevention Case Study

## ➤ *Automotive Repair and Maintenance*

---

### **Company Overview**

This facility performs auto body and mechanical repairs to cars, vans and light trucks. Operations relevant to this study include: clean-up and repair of engine and mechanical components, and auto body repair with repainting. The facility's P2 Plan focuses on opportunities for reducing the releases of volatile organic compounds (VOCs). Currently, 10 people are employed at the facility.

### **Pollution Prevention Assessment Process**

The principle motivators for the company in considering a P2 Plan for their facility were the desire to be environmentally responsible and the recognition of P2 Planning as a marketing bonus. Additionally, the facility could expect to benefit from improvements to employee health and safety as a result of adopting a P2 Plan. The facility's P2 Plan focuses on opportunities for reducing the releases of VOCs.

Through the ChemTRAC Program they retained a pollution prevention consultant to complete a pollution prevention plan. This involved:

- assessment of priority substances
- tracking and quantification of priority substances
- assessment of P2 options
- development of an implementation plan

The detailed final report provided the findings and outlined opportunities for implementation.

### **Summary of Findings**

The VOCs that are in use and released by the facility are those typically found in cleaning products and paints including: acetone, heptane, isopropanol, propane, toluene and xylene.

There are two principle sources of VOC releases at the facility. In the machine shop, VOCs are released into

the atmosphere from solvent dampened rags that are dried before the soiled cloths are disposed to landfill. The estimated amount of solvent lost through this mechanism is up to 30 kg per year.

An estimated 80 kg is also lost from products used in the machine shop and body shop, including body fill etch primers, rocker coatings and other cleaning products.

The second principle source of VOCs is the paint booth exhaust, where the VOCs from the paint products (primers, sealers, base coats and top coats) are released during curing of the coating on the auto body. An estimated 270 kg VOCs are lost from the paint booth each year.

The P2 Plan made three recommendations:

- Switch to a new paint system. A new, state-of-the-art paint system could result in the use of 10% less paint products, resulting in an annual savings estimated at \$7,000 while also maintaining the same product quality for which the facility is noted. The switch would also reduce VOC releases from this process by 27 kg per year. During the course of this P2 Pilot Project, the facility implemented a new paint application system which, by early indications, significantly reduced paint usage and VOCs emissions.
- Monitor the use of the new paint system for reduced paint usage, and equivalent VOCs reduction, to evaluate the effectiveness and continue to refine the efficiency of the new paint system.
- Controlled disposal, or laundering and recycling, of solvent soaked rags in the machine shop. This option would cost an estimated \$1,290 per year and could reduce VOCs releases by up to 30 kg per year.

# ChemTRAC Pollution Prevention Case Study

## ➤ Automotive Repair and Maintenance

### Pollution Prevention Solutions, Environmental Results and Related Cost Savings

The Table below summarizes select pollution prevention recommendations outlined in the facility's report. When implementation is complete, the pollution prevention measures are

- ✓ Projected to reduce 57 kg of VOCs annually.
- ✓ Offer a total annual savings of \$7,000

Opportunity	P2 Solution	Environmental Benefits	Cost Savings and Payback
Switch to a new paint system	Provide new paint system that delivers less paint, resulting in reduced VOC emissions	Reduces releases of VOCs by 27 kg/yr	Implementation costs = \$0. Annual savings = \$7,000.  <b>Payback = 0 months.</b> <b>Effort = Minimal</b>
Monitor the use of the new paint system	Confirm reduced paint usage and equivalent VOCs reduction	N/A	Implementation costs = \$0. Annual savings = \$0.  <b>Payback = Not Applicable.</b> <b>Effort = Minimal</b>
Controlled disposal, or laundering and recycling, of solvent soaked rags	Discontinue practice of allowing damp rags to evaporate and release VOCs	Reduces releases of VOCs by 30 kg/yr	Implementation costs = \$1,290. Annual savings = \$0.  <b>Payback time = None (additional cost).</b> <b>Effort = Minimal</b>