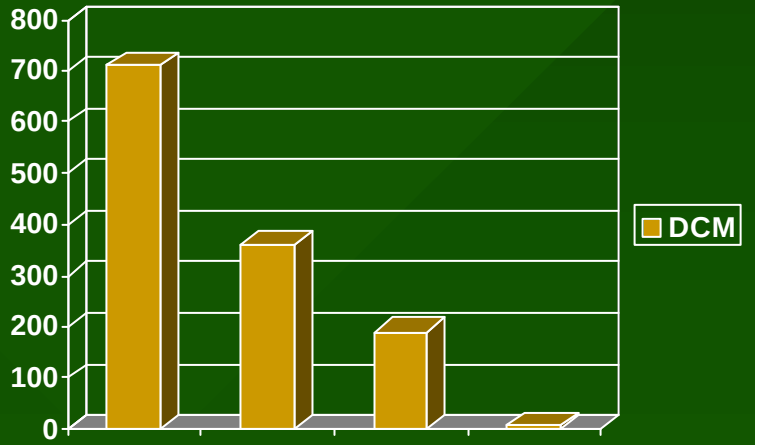
Assessment & Implementation of P2 Measures for a CEPA Toxic Compound

Bruce Taylor, Enviro-Stewards

Paul Craig, Trimac

Enviro-Stewards Inc.
Engineers & Scientists



Agenda

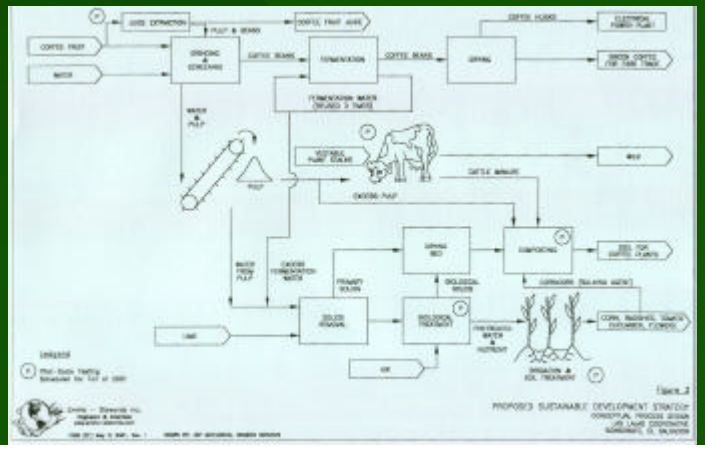
1. Introductions
   - Enviro-Stewards
   - Trimac
2. Drivers for Pollution Prevention at Trimac
3. Pollution Prevention Assessment
   - General Approach
   - Recommendations
4. Implementation Results, Benefits and Challenges
5. Contributions to Sustainable Development

Introductions

Enviro-Stewards Inc.

Dedicated to helping our clients:

- conserve their resources, and
- effectively address their environmental liabilities



Enviro-Stewards
Engineers & Scientists

Introductions

Trimac Transportation Inc.

North America's premier bulk carrier.

In Oakville, Trimac cleans semi-bulk paint tanks (totes) and portable mixing tanks for reuse in the automotive sector

Drivers for P2 at Trimac

- Addition of Volatile Organic Compound (VOC) Limits to Halton's Sewer Use Bylaw
- Preparation for Forthcoming P2 Planning Requirements for DCM Under CEPA
- Expansion of TORSUS program to Oakville

Pollution Prevention Assessment

1. In-Plant Study

- Investigating water using processes and waste generating operations
- Quantifying Process Inputs and Outputs
- Preparing Process Flow Diagrams (PFDs), Plant Layouts and Water & Material Balances

2. Engineering Evaluation

- Identifying Reduction, Reuse and Recycling Opportunities
- Selecting Effective Alternatives for Conceptual Design
- Determining Payback Periods and Completing Cost/Benefit Analysis
- Preparing an Implementation Plan

Recommendations: Methylene Chloride

Paint and Label Adhesive was Removed with Methylene Chloride (DCM)

Compressed Air and Soluble Media (baking soda) blasting was pilot tested then implemented

Recommendations: Wash Solvent

Wash Solvent is Used in Sinks to Clean Valve Components:

- Both on-site and off-site recycling had similar net present values;
- Off-site recycling will be used in the short term, solvent free ultrasonic alternatives are being investigated

Recommendations: Retained Paint

Residual paint in the totes received in the facility is flushed to a waste container.

- A vacuum recovery system is being tested to reduce the quantity of waste and facilitate segregation for byproduct recovery

Challenges

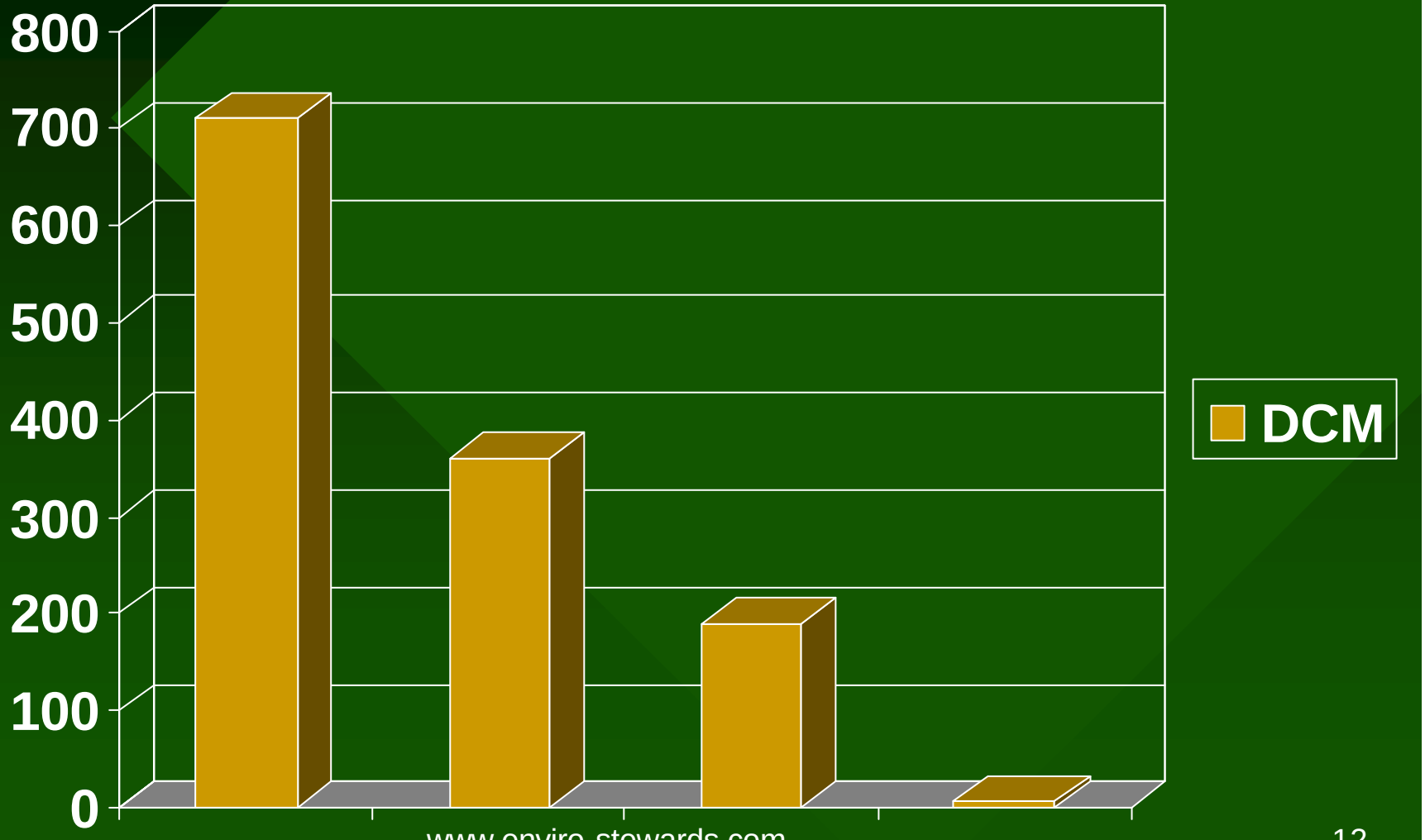
Soda ash blasting is dusty and consumes large volume of compressed air:

- existing compressor capacity can be freed up with a 5-psi blower for pressure testing of trailers,
- spray and fog nozzles are being tested to reduce dust generation at source

Effluent treatment for trace VOCs is being tested

Results

Methylene Chloride Discharge Reduced >99% Through In-Plant Pollution Prevention Measures!



Benefits

- DCM discharge meets interim agreement with the Region of Halton;
- Treatment facilities to meet bylaw criteria will be smaller and less expensive
- Worker exposure to toxics is reduced;
- Meets P2 requirements in Environment Canada's forthcoming DCM legislation;
- NPRI and Reg 127 reporting for DCM is no longer necessary

Contributions to Sustainable Development

1. Environmental Sustainability
   - Reduced Toxics Discharges to Sewer and Atmosphere
2. Social Sustainability
   - Safer working conditions
3. Economic Sustainability
   - Substantially less expensive than end-of-pipe treatment

Contact Information

Bruce Taylor, P.Eng.
Enviro-Stewards Inc.
1 Union Street
Elmira, Ontario, Canada
N3B 3J9

www.enviro-stewards.com

btaylor@enviro-stewards.com

(519) 578-5100; fax (519) 669-5002