

Toxic Reduction Plan

for

OxyVinyls Canada Co.
Niagara PVC Plant
8800 Thorold Townline Rd.
Thorold, ON L2E 6V9

per

O.Reg. 455/09

1. PM_{TOTAL} , PM_{10} , $PM_{2.5}$

July 24, 2015

Statement of Intent

Oxy Vinyls Canada Co. is required under O.Reg. 455/09 to develop Toxic Reduction Plans.

Oxy Vinyls Canada Co. is committed to reducing the use, creation, or transfer of toxic substances in its processes where feasible and economically viable.

Objective

The objective of this Toxic Reduction Plan is to identify the toxic substances used, created, or transferred, how they are used, created, or transferred, where they are used, created, or transferred, and how their use, creation, or transfer can be reduced or eliminated.

Facility Information (per O.Reg.455/09, s.18. (2))

1. Substances:

The following Phase 1 substances are included in this Plan:

| <u>Name</u> | <u>CAS Registry No.</u> |
|-------------|-------------------------|
| PMtotal | NA-M8 |
| PM10 | NA-M9 |
| PM2.5 | NA-M10 |

2. NPRI Identification No: 5762
3. MOE Identification No per O.Reg. 127/01: 5294
4. Legal Name and Address: Street: OxyVinyls Canada Co.
8800 Thorold Townline Rd.
Thorold, ON L2E 6S5
- Mailing: OxyVinyls Canada Co.
P.O.Box 1027
Niagara Falls, ON L2E 6V9
5. Full Time Employees: 91
6. NAICS Code: 325210
7. Company Contact: Jim Segada - Plant Manager
Tel: 905-374-5601
8. Technical Contact: Jane Perz – Environmental Engineer
Tel: 905-374-5629
9. Plan Coordinator: Jane Perz
10. Plan Preparation: Jane Perz
11. Highest Ranking Employee: Jim Segada
12. Addresses of Contacts: Same as 4.
13. Plant Location (UTM): Zone: 17T
Easting: 648800
Northing: 4767600
Latitude: 42.98100
Longitude: -79.26660
14. Canadian Parent Company: Occidental Canada Holdings Ltd.
Charles S. Reagan
Suite 900
1959 Upper Water Street
Halifax, Nova Scotia B3J 2X2
15. Certifying Toxic Reduction Planner: TSRP0071
Name: Scott Manser, P.Eng.

Position: Senior Project Manager
ORTECH Environmental
Address: 1421 Grand Maris Road West
P.O. Box 35020
Windsor, Ontario N9E 4V0
Phone Number: (519) 966-8798
E-mail: smanser@ortech.ca

Identification of Reduction Options

Material or Feedstock Substitution - No option identified
PM_{total}, PM₁₀, and PM_{2.5} are not raw materials or feedstock.

Product Design or Reformulation - No option identified
PM_{total}, PM₁₀, and PM_{2.5} cannot be redesigned or reformulated.

Equipment or Process Modifications – One option identified

Minimization of use of No. 2 fuel oil in boilers in place of natural gas will reduce emission due to natural gas being a cleaner fuel source. An estimate of reductions is not able to be determined as the use of No. 2 fuel oil is used only during curtailment periods when natural gas is no longer available. Gas curtailment periods vary from year to year. Gas curtailments occur infrequently, typically less than 5 day per year and none in some years therefore the reduction in emissions if any would be variable from year to year dependent and the length of the curtailment. Based on the calculated emission data, between 2012-2014 there is:

- approximately a 0.5 tonne (30% reduction for PM_{2.5}).
- approximately a 0.6-1.3 tonne (5-11% reduction for PM₁₀).
- approximately a 0.6-1.4 tonne (4.5-10% reduction for PM_{Total}).

The estimate of future emissions is likely to be within this range however influenced by the frequency of gas curtailments.

There are no options identified for cooling towers or dust collectors. The cooling towers are equipment with drift eliminators and the dust collectors use ultra efficient filter bags rated well below the particle size of the PVC dust.

Spill and Leak Prevention - One option identified
PM_{total}, PM₁₀, and PM_{2.5} can be contained from the discharge of boilers and diesel engines with filters and scrubbers. Higher efficiency filter bags with lower micron ratings would reduce dust collector emissions.

On-site Reuse or Recycling - No option identified
PM_{total}, PM₁₀, and PM_{2.5} cannot be reused or recycled.

Improved Inventory Management or Purchasing Techniques - No option identified
PM_{total}, PM₁₀, and PM_{2.5} is not inventoried or purchased.

Training or Improved Operating Practices – One option identified
All operating personnel in the plant are fully trained to operate the boilers, heaters, and diesel engines and are required to maintain up to date training by periodic recertification on the procedures. As operating practices are improved, procedures are updated and the operating personnel are required to train and compete certification on the new procedures.

Boilers, heaters, diesel engines, cooling towers and dust collectors are maintained on a preset schedule to ensure maximum operating efficiency and minimum emissions. Reduced testing of emergency diesel engine driven generators and pumps will reduce emissions proportionally.

Feasibility of Reduction Options

Equipment or Process Modifications

No. 2 fuel oil is burned in the boiler only during curtailment periods when natural gas is no longer available. No. 2 fuel oil as a backup fuel could be all but eliminated by altering the plant natural gas supply from Enbridge to a non-interruptible contract. Gas curtailments occur infrequently, typically less than 5 day per year and none in some years.

Training or Improved Operating Practices

Testing frequency of the emergency diesel engines could be reduced from weekly to bi-weekly, thus reducing the hours of operation of this equipment. However, this would compromise the reliability of this critical emergency equipment, which could result in an environmental incident that would have a great emission impact. Therefore, this option is not desirable.

Spill and Leak Prevention

Particle filters and scrubbers for the discharge of boilers and diesel engines would reduce the amount of PM_{total} , PM_{10} , and $PM_{2.5}$ emitted from these sources.

Higher efficiency filter bags with lower micron ratings for the dust collector is not feasible as the current filter bags are the highest efficiency and lowest micron rating available for this application.

PLAN CERTIFICATION FOR PM_{TOTAL}, PM₁₀, AND PM_{2.5}

As of July 27, 2015, I, Jim Segada, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act. The regulatory deadline of December 31, 2013 was not met due to environmental expertise resource constraints.

J. Segada
Jim Segada, Plant Manager
Oxy Vinyls Canada Co.

7/27/15

As of July 24, 2015, I, Scott Manser certify that I am familiar with the processes at Oxy Vinyls that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated July 24, 2015 and that the plan, with the exception of the regulatory deadline, complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- PM_{TOTAL} cas#NA-M8
- PM₁₀ cas#NA-M9
- PM_{2.5} cas#NA-M10

Scott Manser
Scott Manser, Toxic Reduction Planner
TSRP0071

July 24, 2015

