April 2nd, 2017

2016 TOXIC SUBSTANCE REDUCTION - ANNUAL REPORT

Prepared for:

WEATHERSTRONG BUILDING PRODUCTS

37 Union Street, Smiths Falls, Ontario, K7A 4Z4

Attention: **Guy Boudreault, Plant Manager**
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Prepared by: **Doug Stowe P.Eng. CHMM TSRP**
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STATEMENT OF INTENT

Weatherstrong paints aluminum sheet metal used as siding for building materials. Order quantitates along with paint colour and specifications are provided by the parent company Kaycan. Weatherstrong uses the specified paints in an optimized automated paint line where large aluminum rolls are loaded at one end and fed through the paint line in a long strip. The strip passes through a roll-coater and a curing oven to dry the paint before the strip is coiled into a finished roll at the opposite end of the line. While the paints contain solvents (some are VOCs) to provide for paint application; Weatherstrong uses a high efficiency catalytic oxidizer to destroy any VOCs emanating from the paint drying exhaust. Weatherstrong strives to optimize the process while reducing operating costs.

The facility does not create solvents; therefore its plan will not address reducing solvent creation.

2016 SUMMARY

Year Over Year (tonnes)		Part 1	Part 5	Part 1	Part 5	Part 5
Components	**CAS**	**2015**	**to air**	**2016**	**to air**	**% Change**
Butyl alcohol	71-36-3	15.7	0.16	14	0.14	-11%
Xylene (all isomers)15	1330-20-7	24.2	0.24	21.3	0.21	-12%
Butoxyethanol	111-76-2	28.8	0.29	26.3	0.26	-9%
Trimethylbenzene	95-63-6	30.4	0.30	26.8	0.27	-12%

Notes

The use and emission quantity of solvents is based on demand for painted products. Demand was down for 2016 from 2015. Demand is controlled through purchases made through the parent company. Weatherstrong has no control over the paint used or the demand. There is no plan to reduce the quantity or change the type of material used.

There was no need to report on VOCs to air or the specific Part 5 VOC substances because the catalytic oxidizer effectively reduced emissions below the reporting threshold.

1.0 OBJECTIVE

Weatherstrong will strive to minimize waste and optimize the use of paints, efficiently preventing excessive emissions through the use of a catalytic oxidizer maintained to support a highly efficient destruction rate (98-99%). Further, this plan will determine the technical and economic feasibility of each option to determine which are viable for implementation.

1.1 TARGETS

(i) To improve spill containment strategies on site;

(ii) To optimize energy consumption relating to paint line operations.

2.0 DESCRIPTION OF THE TOXIC SUBSTANCE

All paints contain Volatile Organic Compounds (VOCs) to varying percentages depending on the formulation. There are approximately 200 different paint formulations. Based on the annual paint use, the four VOC chemicals tabled below met the NPRI reporting threshold. The high efficiency catalytic oxidizer reduced the overall VOC emissions to air (Part 5) below the

reporting threshold.

Reducing toxics is difficult because the organization has no control over the paint formulation. The paint-roll transfer application is efficient with minimal waste as no paint is atomized. Based on this, Weatherstrong has decided not to proceed with a Toxic Reduction Plan focused on these components - but is implementing other environmental strategies to reduce energy consumption.

FACILITY INFORMATION

Name:	Weatherstrong Building Products, 37 Union Street, Smiths Falls, Ontario, K7A 4Z4
NPRI #:	0000005703
NAICS Code:	332810
# of Full-time Employees:	32
UTM Coordinates (NAD83):	Latitude 44.9125, Longitude -76.0220

2.1 Owner/Contact of the Facility Information

Contact: Guy Boudreault, Plant Manager, Weatherstrong Building Products
Address: 37 Union Street, Smiths Falls Ontario, K7A 4Z4
Phone: (613) 283-0999
E-mail: Guy90@kaycan.ca

2.2 Operator of the Facility Information

Name: Guy Boudreault, Plant Manager, Weatherstrong Building Products
Address: 37 Union Street, Smiths Falls Ontario, K7A 4Z4
Phone Number: (613) 283-0999

2.3 Highest Ranking Employee at the Facility Information

Name: Guy Boudreault, Plant Manager, Weatherstrong Building Products
Address: 37 Union Street, Smiths Falls Ontario, K7A 4Z4
Phone: (613) 283-0999
E-mail: Guy90@kaycan.ca

This facility is a subsidiary of Kaycan Inc.

2.4 Parent Company Information

Name: Kaycan
Address: 3075 Trans Canada Hwy, Pointe Claire, Quebec, H9R 1B4
Phone: (613) 283-0999
Percentage of Facility Owned by Company: 100 per cent
Business Number: 102777612RC0001

2.5 Plan Contacts

Person Coordinating the Preparation of the Plan
Name: Guy Boudreault, Plant Manager, Weatherstrong Building Products
Address: 37 Union Street, Smiths Falls Ontario, K7A 4Z4

Phone: (613) 283-0999
E-mail: Guy90@kaycan.ca

2.6 Person Who Prepared the Plan

Name: Doug Stowe P.Eng. TSRP
Position: Toxic Substance Reduction Planner (#TSRP0157)
Address: 73 Mill St., PO Box 486, Almonte, Ontario K0A1A0
Phone: (613)256-9321
E-mail: Doug@stowe-engineering.ca

2.7 Public Contact

Name: Guy Boudreault, Plant Manager, Weatherstrong Building Products
Address: 37 Union Street, Smiths Falls Ontario, K7A 4Z4
Phone: (613) 283-0999
E-mail: Guy90@kaycan.ca

2.8 Technical Contact

Name: Doug Stowe P.Eng. TSRP
Position: Toxic Substance Reduction Planner (#TSRP0157)
Address: 73 Mill St., PO Box 486, Almonte, Ontario K0A1A0
Phone: (613)256-9321
E-mail: Doug@stowe-engineering.ca

3.0 STAGES AND PROCESSES THAT USE THE TOXIC SUBSTANCES

3.1 STAGES

The main stages for paint processing: Purchasing & Receiving, Storage, Production and Shipping. The substances are present in the first three stages.

PURCHASE & RECEIVING	STORAGE	PRODUCTION	SHIPPING
Paints	Paint barrels	Paint dispensing Paint application	Product Hazardous Waste Reclaim

3.2 Paint Line Description

Weatherstrong produces painted aluminum sheet for building applications.

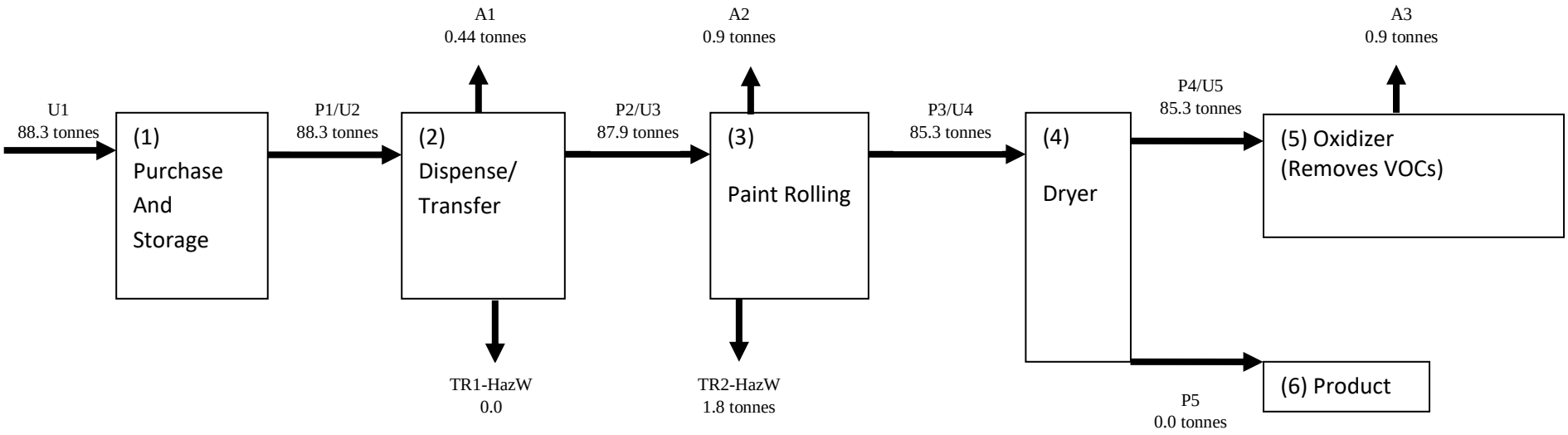
Paint Line: Bare aluminum sheet is received at the plant warehouse in large rolls. A roll is loaded onto the feed station cradle at the start of the paint line and gradually uncoiled to feed through a series of processing stages. Initially the aluminum is cleaned and dried before it passes across a paint roller. Paint may be applied to one or both sides of the roll. The painted surface passes through a long, enclosed gas-heated drying oven that cures the paint onto the aluminum and releases any carrier solvents. The finished dry painted sheet is coiled up again at the opposite end of the line, removed from the cradle and packaged for shipment.
All solvent vapours emitted from the drying oven during production are captured and treated in

a catalytic oxidizer with a design destruction efficiency rating of 98-99%.

Solvent Dispense: Solvent dispensing is done in an ancillary Solvent Dispense Room serviced with two wall mounted exhaust fans. Diacetone alcohol, Vansol and a recycled solvent made up of both these products are used to clean sections of the paint line. Solvents are dispensed into 20 litre containers and brought to the paint line for in-situ cleaning. Contaminated solvent solutions are brought back into the Solvent Dispense Room and decanted into a storage container for recycling or eventual shipment as hazardous waste.

4.0 FLOW CHARTS – MASS BALANCE

4.1 Paint line process



LEGEND

→	Paint Line Process Components
→	Solvent Cleaning Process Components
U	Used
P	Produced
TR	Toxic Waste Recycled or Hazardous Waste Disposal
A	Air Emission
Re	Reclaim
HazW	Hazardous Waste

DQL Data Quality Level = "Average"

4.2 NPRI Reportable Substances

Part 1A	CAS#	MPO (tonnes)	Reportable? (Y/N)
Butoxyethanol	111-76-2	26.3	YES
Butyl alcohol	71-36-3	14.0	YES
Trimethylbenzene	95-63-6	26.8	YES
Xylene (all isomers)15	1330-20-7	21.3	YES

VOCs are destroyed by the oxidizer reducing the total air emissions below the 5 tonnes threshold so no reporting for VOCs is required:

Part 5			Reportable? (Y/N)
TOTAL VOCs	From all paints	229.2	tonnes
Emission Factor	99% efficiency	0.01	
Total Emission of VOCs		2.2	No

5.0 ESTIMATED DIRCET AND INDIRECT COST

Direct costs were based on purchased costs for the paints and solvents. Direct labour costs were also included but no cost savings were directly determined based on reduced labour. Gas usage for heat was included in cost calculations.

6.0 COMMENT ON MASS BALANCE RESULTS

Mass balance results assumed conservation of material through purchasing and shipping. Since actual measurements were not available percentages were used to estimate quantities to air and hazardous waste. Oxidizer emission rates were based on the specified efficiency of the oxidizer. Quality of data should be considered 'Average' meaning more improvements could be made in assuring accuracy through measurements.

7.0 REDUCTION OPTIONS SELECTED

7.1 Use only Recycled Solvent to Clean the Paint Line (Ref: 7.1 (i))

Understanding that recycled solvent may not be entirely effective since it is over 50% less expensive it can reduce the overall operating costs. This process change would require further review before proceeding.

7.2 Review the Process Around Paint Line Cleaning to Determine if Reductions (Ref 7.4 (v))

Over 25 tonnes of solvent are used annually for cleaning. A small reduction in solvent use could result in immediate payback. Labour should be taken into consideration in the analysis.

7.3 Optimize the use of Gas Burners (Ref 7.4 (vi))

It was observed that the drying oven uses a similar quantity of gas as the oxidizer. There may be opportunity to reduce or conserve energy saving gas consumption for this stage of the process. Although NPRI substance use would not change it could improve operating costs.

7.4 Improve Cleaning Process through Operator Training (Ref 7.7 (xi))

This opportunity is tied closely to leveraging the use of recycled solvent (10.1). A modification to the Operator procedure may decrease the amount of solvent required. This should be assessed and reviewed with process experts to ensure the quality remains sound and the procedure is safe

8.0 PLANNER COMMENTS

8.1 Calculation Changes Statement - Ref 26.(2)

No changes to the calculations were made over last year.
No description of the change, the reason for the change and how the change will impact tracking and quantification of the substance was required.

8.2 Process Changes Statement – Ref 26(1) 5

There have been no significant process changes in operation over last year: No process changes over 15%.

8.3 Incident Impact Statement - Ref 26.(1) 6

There has been no incident out of the normal course of events at the facility during the previous calendar year whereby the incident could affect the results of tracking and quantification of the substance.

9.0 PLANNER RECOMMENDATIONS

The recommendations point towards reducing the amount of cleaning solvent used (25 tonnes). Although the solvent di-acetone is not currently an NPRI reportable substance, it does contribute to the total VOCs while reducing NPRI and can be assessed for reduction.

9.1 Evaluate Recycled Solvent

Identify the source and quality of recycled solvent. Verify if it can be used at a higher ratio than it currently is. Perform tests on the paint line.

9.2 Review the Solvent Cleaning Process

There may be alternative methods to conserve and/or reuse the cleaning solvent to conserve solvent and reduce waste. This may involve equipment and/or procedural changes. Eliminating the loss of material before it is used is an immediate savings;

9.3 Improved Record Keeping / Oxidizer Efficiency

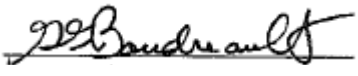
(i) Paints are provided from 2 suppliers: Kel Coatings and Valspar. The MSDSs from Kel have specific concentrations of VOC components while the Valspar data sheets have ranges. For calculations using ranges, the worst case concentration (high end of the range) was used. If a more accurate concentration was identified then it is likely the actual amounts of toxic substances would be lower and lower chemical use could be realized.

(ii) The oxidizer procedure should be reviewed and verified annually to ensure it is maintaining the 99% efficiency identified as it is a critical control parameter in ensuring VOCs are abated.

10.0 PLAN CERTIFICATIONS – (for Substances)

I, Guy Boudreault, certify that I have read the toxic substance reduction plan for **the substances listed below** and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Part 1A	CAS#
Butoxyethanol	111-76-2
Butyl alcohol	71-36-3
Trimethylbenzene	95-63-6
Xylene (all isomers)15	1330-20-7



April 4th, 2017
Date

Guy Boudreault
Plant Manager, Weatherstrong
(Highest Ranking Employee)