Report to:

SHERWIN-WILLIAMS CANADA INC.

Grimsby Plant
Toxic Substance Reduction Plan
2017 Update

Document No. 1296950301-REP-V0001-00

TETRA TECH

Third Party Disclaimer

Confidential

Report to:

SHERWIN-WILLIAMS CANADA INC.

GRIMSBY PLANT TOXIC SUBSTANCE REDUCTION PLAN 2017 UPDATE

DECEMBER 2017

Prepared by	Douglas McLaren, P.Eng.	Date	December 18, 2017
Reviewed by		Date	December 19, 2017
Authorized by		Date	

TETRA TECH

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TETRA TECH

REVISION HISTORY

REV. NO	ISSUE DATE	PREPARED BY AND DATE	REVIEWED BY AND DATE	APPROVED BY AND DATE	DESCRIPTION OF REVISION
1	Dec.-24-12	DM Dec.-19-12	AR Dec.-20-12	DL Dec.-21-12	Original
2	Dec.20.17	DM Dec.18.17			2017 Update to include new substances (Cobalt, Bisphenol A)

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1.0 BASIC FACILITY INFORMATION

The Basic Facility information required under the Toxic Reduction Act is presented in the following section.

This Toxic Substance Reduction Plan covers the following group of substances:

Table 1-1: Substances Covered in Plan

Substance Name	Chemical Abstracts Service (CAS) Number
4,4'-Isopropylidenediphenol (Bisphenol A)	80-05-7
Cobalt	N/A
Zinc (Dust- Ultra Pure)	740-66-6

National Pollutant Release Inventory (NPRI) ID: 10079

MOE ID under Regulation 127/01 (Airborne Contaminant Discharge Monitoring and Reporting): N/A

The legal and trade names of the owner and the operator of the Facility (the "Facility"):

Owner: The Sherwin Williams Company
Operator: The Sherwin Williams Company

The street and mailing address of the Facility:

The Sherwin Williams Company
13 Iroquois Trail
Grimsby, Ontario, L3M 5E6

The number of full-time employee equivalents at the Facility:

64 full-time employee equivalents

The two- and four-digit North American Industry Classification System (NAICS) codes:

32, 3255

The six-digit NAICS Canada code:

325510 - Paint and Coating Manufacturing

The name, position and telephone number and mailing addresses for the following individuals:

- Public Contact:
  Robyn Brohman
  13 Iroquois Trail
  Grimsby, Ontario, L3M 5E6
  Tel: 905-945-3802

- Technical Contact:
  Michael Pankiw
  101 Prospect Avenue
  Cleveland, Ohio, 44115
  Tel: 216-566-2234

- The person responsible for coordinating the plan preparation:
  John Vervaeke
  13 Iroquois Trail
  Grimsby, Ontario, L3M 5E6
  Tel: 905-945-3802
  John.E.Vervaeke@sherwin.com

- The person who prepared the plan, if different from coordinator:
  Douglas McLaren, P.Eng.;
  Senior Air Quality Engineer; Tetra Tech Canada Inc.
  6835A Century Avenue, Mississauga, Ontario, L5N 2L2, Canada
  Phone: 416.219.2793 Fax: 905.369.3200
  Doug.mclaren@ttemi.com

- Highest Ranking Employee at the Facility who has management responsibilities relating to the Facility and who is responsible for making the certification:
  Robyn Brohman
  13 Iroquois Trail
  Grimsby, Ontario, L3M 5E6
  Tel: 905-945-3802

The license number of the Toxic Reduction Planner who made recommendations:
TSRP0191

The license number of the planner who certified the plan:
TSRP0191

The spatial coordinates of the Facility in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum:

Zone 17; UTM Easting 620,693; UTM Northing 4,782,542

Latitude: 43.1859 N
Longitude: 73.515 E

Canadian parent Company (the "Company"):

- The legal name of the parent Company: Sherwin Williams Canada

- Street and mailing address of the Company:
  170 Brunel Road, Unit A
  Mississauga, Ontario, L4Z 1T5

- What percentage of the Facility is owned by the parent Company:
  100%

- The business number assigned by Canada Customs and Revenue Agency:
  104835277

2.0 STATEMENT OF INTENT

It is the intention of the Company to quantify and assess the creation, use, release and disposal of all toxic substances from the Facility, thereby gaining a more detailed understanding of the environmental footprint of its operations. Monitoring environmental performance through vigorous testing and identifying areas for improvement

The Company intends to systematically initiate programs/actions outlined in the plan to reduce the use of toxic substances where possible, systematically working from the recommendations of the hired Toxic Substance Reduction Planner and other specialists.

2.1 OBJECTIVES

The following Objectives have been developed to support specific items in the Statement of Intent.

1. Continue to pursue opportunities to convert waste materials into useful products for sale.
2. Continue to pursue process improvements that will result in reductions in the quantity of toxic materials used, released, transferred or disposed of from the facility.

3.0 PROCESS DESCRIPTION

The Facility manufactures powder coatings for industrial and commercial use. Raw materials are mixed to formula, batch, and customer specifications, extruded, and mechanically ground, with emissions collected using cyclones and/or dust collectors.

The main processes involved in Sherwin Williams's production are:

1. Receiving
   a. Receive 100lb pails of R-597046 (Zinc 510) and R-597141 (Zinc #6)
   b. Zinc pails stored in racking in Raw Material warehouse
2. Pre-batching
   a. Pails of Zinc removed from racking as called for by a batch card
   b. Weigh-up according to batch card. Anything <100lb is weighed into boxes
3. Manufacturing
   a. Gather pails of Zinc and transport to mixer mezzanine
   b. Load mixer and mix product
   c. Dump into hopper and transport to line
   d. Extrude product
   e. Grind product
   f. Sift and box product
   g. Changeover between products
4. Storage
   a. Finished goods transported from Production Line to Shipping Warehouse for storage.
5. Shipping
   a. Material is shipped direct to the customer using outside Transport Company.

The toxic substances identified in and covered under this Toxic Substances Reduction Plan are present as packaged dust/granular materials shipped and stored in crimped metal pails, bulk bags or other packaging. These substances move through the batching/mixing process and its subsequent derivatives including process wastes, fugitive dust, baghouse fines and the final products.

These substances are present in the following releases to the environment and transfers off-site as a product:

- **Use of Substance:** Raw Materials
  - Zinc dust is used in the manufacture of Zinc rich epoxy primers. The Zinc acts as a sacrificial metal when exposed to corrosive environments.

What this means is that the Zinc corrodes rather than the steel substrate. These primers are used in applications where a high level of corrosion protection is required (e.g. fencing, structural steel, pad and pole mounted transformers, etc…).
    - Cobalt dust is used in the manufacture of powder coating systems as a functional catalyst required for the proper setting / curing of the final product.
    - 4,4'-Isopropylidenediphenol (Bisphenol A) is included as a monomeric component of in the manufacture of epoxy primers.
- **Release Source:** Baghouse Emissions.
    - Toxic substances are released to the air as a fraction of the fugitive airborne emissions of suspended particulate matter from manufacturing and cleanup operations.
- **Transfer of Product:** Off-Spec Product.
    - Toxic substances are transferred off-site as waste materials from losses at the pin breaker assembly, baghouse fines and vacuum system fines.
- **Transfer of Product:** Powder Coating Products
    - Toxic Substances are transferred off-site as a fraction of the final powder coating product manufactured.
- **Disposal Off-Site:** Waste Materials:
    - Approximately 0.06% to 0.08% of the toxic materials used are lost during the pin breaker stage of the manufacturing process in the form of flaked material falling to the floor,
    - Approximately 3% of the materials processed at the facility are captured in the baghouse/vacuum system fines.
    - Waste materials from these operations are sent to landfill as scrap materials.

4.0 TOXIC SUBSTANCE ACCOUNTING

The following sections describe the stages of the operations that use, transfer, or release toxic substances from the site.

4.1 RECEIVING

The facility receives R-597046(Zinc 510) and R-597141(Zinc #6) in sealed 100lb pails. Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A) are received on site as fractional components of a number of raw ingredients in various containers. There are no reported incidents involving loss of toxic substances during this stage.

4.2 PRE-BATCHING

The containers of Zinc, Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A), containing material are removed from storage racking as called for by a batch card. The containers are sealed while stored in the racking.

The materials are weighed-up according to the batch card. Quantities less than 100lb are weighed into boxes. The Production Planner cuts batch tickets so that the entire content of the containers are used, where possible. Very rarely a partial container is used. The balances of partial containers are used in future production.

4.3 MANUFACTURING OPERATIONS

4.3.1 *RAW MATERIAL MIXING*

Zinc, Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A) are placed on a skid with other materials and are transported to the mixer. The mixer is loaded, and mixing operations commence. There is some product loss during this operation as dust generated will be taken away by the dust collection system.

The mixed product is dumped from the mixer into a hopper for the extrusion process. Some product loss occurs as dust, which is collected by the dust collection system.

4.3.2 *EXTRUDING*

The mixed materials are heated, melted and then extruded where it cools as it travels down a conveyor in a sheet. Approximately 0.06% - 0.08% of the product is lost during the manufacturing stage at the pinbreaker assembly. Annually, this results in

approximately 78.80kg of flaked material falling onto the floor and being swept up and sent to landfill as scrap material.

4.3.3 Grinding

During the grinding phase, the material is milled which results in very fine particles that are removed from the process into a baghouse. The fines are collected and then sold as a finished good to a customer. The cyclone manufacturer specifications indicate that 3% of the process powder will be collected by the baghouse with the installed cartridges.

The product is sifted and boxed for transport. The material is screened in a manner where larger particles are captured and removed from the process. Course material is then added to fines that are sold to a customer.

4.3.4 Process Dust Collector Emissions

Dust collected from the various process operations in the manufacturing area which is expected to contain Zinc, Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A) in proportion to the quantity that is processed. Emission estimates of Zinc, Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A) from the process dust collectors are based on a manufacturers guaranteed maximum emission rate of 10mg/m^3.

4.3.5 Off-Spec Material for Sale

Approximately 3% of the total Zinc, Cobalt and 4,4'-Isopropylidenediphenol (Bisphenol A) used in the manufacturing process ends up as Off-Spec material from baghouse collectors which is sold as a product to GDB International Inc.

4.3.6 Waste Product to Landfill

When production runs changeover, material that is left over is either water washed, which goes through filter press and then to landfill, or vacuumed up and emptied into garbage which also goes to landfill.

4.4 Storage

Finished goods are transported from the Production Line to Shipping and Warehousing for storage. The material is stored on skids in boxes or drums. Anything stored on or above the third level of shelving is shrink wrapped to prevent product from falling off the skid.

4.5 Shipping

Finished material is shipped direct to customers using a contracted transport company.

4.6 Process Flow Diagrams

See **Attachment 1** for the complete Facility wide Process Flow Diagrams with the associated Toxic Substance Accounting.

5.0 QUANTIFICATION METHODS

Figure 1 is provided below for reference and includes the common acronyms used to simplify the descriptions of the quantification methodologies employed on-site. These acronyms are used throughout this document where necessary.

Figure 1: Quantification Methodology Reference

Reference	Description
EPAEFA	US EPA AP-42 Emission Factors with a Quality Rating of "A"
EPAEFB	US EPA AP-42 Emission Factors with a Quality Rating of "B"
EPAEFC	US EPA AP-42 Emission Factors with a Quality Rating of "C"
EPAEFD	US EPA AP-42 Emission Factors with a Quality Rating of "D"
EPAEFE	US EPA AP-42 Emission Factors with a Quality Rating of "E"
SECEF	Manufacturer Supplier Maximum Emission Rate Guarantee
ENGCAL/SECEF	Combined Engineering Calculation and Manufacturer Supplier Maximum Emission Rate Guarantee
MASS	Mass Balance based on materials input and output to and from the system in question
MV	Measured Value or combination of measured value and measured activity (e.g. measured concentration and flow data)

5.1 PROCESS SPECIFIC QUANTIFICATIONS

The following sections describe the quantification methodology, or combination of methodologies employed by the Company in estimating the quantities of toxic substances from the use, creation or destruction of them on the Facility site and from releases, transfers and disposals of them off-site.

In general the toxic substance quantifications are calculated based on mass balance data for the operations in question. Material mass and concentration data vary depending on the specific operation in question, but this basic format has been used to describe the methodologies employed in developing this plan.

5.1.1 Powder Coating Manufacturing

The Use of toxic substances is estimated based on a mass balance around the quantity of raw materials containing toxic substances used in the manufacturing process. The mass of raw materials is multiplied by the concentration of each toxic substance in the raw material.

Use of Toxic Substance: $\sum_x$ [Mass of Raw Material$_x$ x Mass Fraction (%) of Toxic Substance in Raw Material$_x$]
Methodology: MASS

5.1.2 Process Baghouse Dust Emissions

The Release of toxic substances from the facility six (6) process baghouses is estimated based on the quantity of toxic substances used, the total quantity of products manufactured, the manufacturer's emission rate guarantee (10mg/m^3), the operating hours for the units and the flow rate of the units. The quantity of particulate matter released is calculated by multiplying the maximum emission rate guarantee by the flow rate and operating hours for the unit. The quantity of toxic substances in the particulate matter released is estimated by multiplying the ratio of each toxic substance used over the total quantity of products manufactured by the particulate matter releases.

Release of Toxic Substance: Emission Rate (mg/m^3) x Flow Rate$_{Total}$ (m^3/s) x Operating Time (h/yr) x [Total Toxic Substance Used (kg/yr) ÷ Total Product Manufactured] ÷ 3600 (s/h) ÷ 1,000,000 (mg/kg)
Methodology: SECEF and MASS

5.1.3 Off-Spec Materials for Sale

The Transfer of the toxic substances from the facility in the form of Off-Spec materials for sale is estimated based on a mass balance around the quantity of toxic substances used and an engineering calculation that approximately 3% of the total usage will end up as off-spec material in baghouse collectors.

Transfer of Toxic Substance: $\sum_x$ [Mass of Raw Material$_x$ x Mass Fraction (%) of Toxic Substance in Raw Material$_x$] x 3 (%) to Baghouse Collectors
Methodology: EC and MASS

5.1.4 Waste Materials to Landfill

The Disposal of toxic substances to landfill is estimated based on the concentration of toxic substances in the raw materials and the yield loss recorded from the manufacturing process lines. As a significant portion of the waste materials generated are recycled, this quantity is subtracted from the total to landfill.

Disposal of Toxic Substance: $\sum_x$ [Mass of Raw Material$_x$ x Mass Fraction (%) of Toxic Substance in Raw Material$_x$] – $\sum_y$ [Mass of Product Material$_y$ x Mass Fraction (%) of Toxic Substance in Product$_y$] – Quantity to Recycling

Methodology: MASS

5.1.5 Final Product

The Transfer of the toxic substances as ingredients in in the final powder coating product shipped from the facility is estimated based on a mass balance around the quantity of product containing toxic substances. The mass of each product is multiplied by the concentration of each toxic substance in each product.

Transfer of Toxic Substance: Mass of Product$_x$ x Mass Fraction (%) of Toxic Substance in Product$_x$

Methodology: MASS

5.2 Record of Methods

The ***NPRI & Toxic Reduction Act (TRA) Quantifications Spreadsheet*** is used to track and calculate the quantifications used in this plan. The methodologies employed in estimating the creation, destruction, release and transfers of toxic substances from the Facility are laid out in the NPRI & Toxic Reduction Act (TRA) Quantifications Spreadsheet.

This spreadsheet is to be updated and archived each year as required by the NPRI and TRA. Upon completion of each year’s update, a copy of the final spreadsheet is to be stored on a solid state electronic storage or other electronic media in an archived form to prevent further changes.

See **Attachment 2** for a copy of the most recent ***NPRI & TRA Quantifications Spreadsheet***.

5.3 No Approximate Balance

Instances of No Approximate Balance of inputs and outputs of toxic substances quantified in this plan are caused by uncertainty in the quantity of wastes disposed of and recycled materials transferred off-site as product. The uncertainty in the quantity of materials released to the air in the form of baghouse dust also adds to the imbalances noted below.

A detailed accounting of this imbalance is included in the process flow diagram for within the Process Flow Diagrams tab in the most recent ***NPRI & TRA Quantifications Spreadsheet***. See **Attachment 2** for a copy of the most recent NPRI & TRA Quantifications Spreadsheet.

6.0 DIRECT AND INDIRECT ANNUAL COST

The following direct and indirect annual costs associated with the use, release and transfer of toxic substances from the Facility have been identified. Based on the available accounting data, the typical annual costs associated with the Toxic Substances covered under this plan are approximately **$542,000.00**

Creation and Destruction of Toxic Substances:
The Facility neither creates nor destroys the toxic substances in question and therefore does not have any related costs under this category.

Use of Toxic Substances:
The annual cost associated with the Use of toxic substances on site include the purchases of powders, additional labour required as a result of the toxic nature of the substance, additional electrical usage required due to the ventilation requirements for storage of raw materials. The total cost associated with the use of the toxic substances in the manufacturing process is approximately **$530,000.00**.

- Purchasing of raw materials is estimated based on the total quantity of materials containing the toxic substance, the raw material unit cost and the concentration of the toxic substance found in each raw material.
  - 2016 estimated cost: ~$454,000.00
- Labour costs have been estimated based on the additional time required for handling, cleaning and the production of products containing the toxic substance.
  - 2016 estimated cost: ~ $75,000.00

Releases of Toxic Substances:
The annual cost associated with the releases of toxic substances is estimated to be approximately **$12,000**.

- Electrical costs have been estimated based on a unit rate of power consumption of 0.9 kwhr/kg toxic substance and the power usage for the HVAC and emission control equipment in place.
  - 2016 estimated cost: ~ $12,000.00

Transfers of Toxic Substances:
There are currently no costs associated with additional downstream processing required due to the toxic substance content in the products shipped off-site. The toxic substance is included in the products as a functional ingredient.

Materials containing the toxic substance that are recycled are sold to customers and do not have a cost associated with them.

7.0 TOXIC REDUCTION OPTIONS

The Toxic Reduction Act requires facilities to consider at least seven (7) toxic reduction categories or provide an explanation of why no option could be identified. Options identified under each of these seven (7) toxic reduction categories are examined below.

7.1 Materials or Feedstock Substitutions

- **Not Applicable**.
  - Zinc dust is used in the manufacture of Zinc rich epoxy primers. The Zinc acts as a sacrificial metal when exposed to corrosive environments. What this means is that the Zinc corrodes rather than the steel substrate. These primers are used in applications where a high level of corrosion protection is required (fencing, structural steel, pad and pole mount transformers, etc.). There is currently no replacement for this material.
  - Cobalt dust is used in the manufacture of powder coating systems as a functional catalyst required for the proper setting / curing of the final product. There is currently no replacement for this material.
  - 4,4'-Isopropylidenediphenol (Bisphenol A) is included as a monomeric component of in the manufacture of epoxy primers. There is currently no replacement for this material, as recent work into the commonly used replacement (Bisphenol S) has demonstrated that it has the same health and environmental issues associated with it.

7.2 Product Design or Reformulation

- **Not Applicable:** The formulations containing the toxic substances (e.g. for primers used in applications where a high level of corrosion protection is required) have been engineered to function in specific conditions where other materials will not meet the specifications.

7.3 Equipment or Process Modification

- **Pinbreaker Assembly Upgrade:** Improvements to the pinbreaker assembly on the first two lines to match the design of a third line where the loss of product at the pinbreaker was minimal. Approximately 0.06% - 0.08% of the product is lost during the manufacturing stage at the pinbreaker assembly. This results in approximately 100 kg/year of flaked material falling onto the floor and being swept up and sent to landfill as scrap material.

- **Baghouse Filter Upgrade:** Switching baghouse filters with High efficiency filters to minimize the chance of toxic substances passing through the filter and out into the environment. The baghouse filters would be switched to a GE Energy High Efficiency pleated filter. These filters are 99.9%+ effective.

7.4 Spill and Leak Prevention

- **Central Vacuum System Installation:** Installation of a new central vacuum system for plant cleaning instead of the current practice of using compressed air to clean fugitive materials from process equipment.

7.5 On-Site Reuse and Recycling

- **Off-spec product recycling:** Although there are no onsite re-use opportunities available, if product is made that does not meet customer requirements, the product is sold to an overseas company at a reduced price. This keeps the product out of landfill. Sherwin Williams has an agreement with a company overseas to buy off spec finished goods and baghouse fines.

7.6 Inventory Management

- **Adjust Batch Sizes:** Batch sizes can be adjusted to use a full container of Zinc, thereby minimizing the number of open containers of toxic substances being kept on site.

7.7 Training

- **Vacuum System:** Operators should be retrained after the installation of the central vacuum system on how to use the central vacuum system to minimize the dust generated by compressed air.

8.0 IDENTIFICATION OF TECHNICALLY FEASIBLE OPTIONS

Below are the Toxic Substance Reduction Options that have been identified as being Technically Feasible.

8.1 Equipment or Process Modification

Pinbreaker Assembly Upgrade: No technical obstacles to implementation have been identified.

Baghouse Filter Upgrade: No technical obstacles to implementation have been identified.

8.2 Spill and Leak Prevention

Central Vacuum System Installation: No technical obstacles to implementation have been identified.

8.3 On-Site Reuse and Recycling

Off-spec product recycling: No technical obstacles to implementation have been identified.

8.4 Inventory Management

Adjust Batch Sizes: No technical obstacles to implementation have been identified.

8.5 Training

Vacuum System Training: No technical obstacles to implementation have been identified.

9.0 IDENTIFICATION OF ECONOMICALLY FEASIBLE OPTIONS

Below are the Toxic Substance Reduction Options that have been identified which have been determined to be Economically Feasible.

9.1 Equipment or Process Modification

Pinbreaker Assembly Upgrade: This reduction option was determined to be economically feasible. The total cost to retrofit the 2 lines is approximately $66,000.

Baghouse Filter Upgrade: This reduction option was determined to be economically feasible.

9.2 Spill and Leak Prevention

Central Vacuum System Installation: This reduction option was determined to be economically feasible.

9.3 On-Site Reuse and Recycling

Off-spec product recycling: This reduction option was determined to be economically feasible. This option results in a net profit on the materials sold.

9.4 Inventory Management

Adjust Batch Sizes: This reduction option was determined to be economically feasible as there is minimal cost impact.

9.5 Training

Vacuum System Training: This reduction option was determined to be economically feasible.

10.0 OPTION(S) TO BE IMPLEMENTED

The following Toxic Substance Reduction options have been determined to be both technically and economically feasible. These options have been identified for implementation as they are expected to result in reductions in the use, release and disposal of the Toxic Substances from the facility.

10.1 Equipment or Process Modification

Pinbreaker Assembly Upgrade: Improvements to the Pinbreaker Assembly were implemented in November of 2012.

- ***Potential Toxics Reduction:*** This option virtually eliminates the loss of product during the manufacturing stage at the pinbreaker assembly.
  - *Reduction of ~90 kg/year Zinc Disposed of to landfill and subsequently in the total Usage of Zinc.*
  - *Reduction of ~7 kg/year 4,4'-Isopropylidenediphenol (Bisphenol A) Disposed of to landfill and subsequently in the total Usage of 4,4'-Isopropylidenediphenol (Bisphenol A).*
  - *Reduction of ~5 g/year Cobalt Disposed of to landfill and subsequently in the total Usage of Cobalt.*

Baghouse Filter Upgrade: Improvements of the baghouse filter upgrades were implemented in June of 2017.

- **Potential Toxics Reduction:** This option would improve the collection efficiency of the baghouse, reducing releases of the toxic substance and result in reductions of air emissions by up to 100kg/year.

10.2 Spill and Leak Prevention

Central Vacuum System Installation: Installation of the Central Vacuum System were implemented in December of 2011.

- ***Potential Toxics Reduction:*** Using a vacuum system will prevent blowing settled dust and minimize the amount of airborne dust that can escape the plant. As these emissions have not been quantified, no reduction in the use and or releases of the toxic substance are possible at this time.

10.3 On-Site Reuse and Recycling

Off-spec product recycling: Implementation of Off- spec product recycling has been implemented, whenever possible, as of the end of October 2012.

- ***Potential Toxics Reduction:*** Sherwin Williams has an agreement with a company overseas to buy off spec finished goods and baghouse fines. Based on 3% yield loss to the baghouses, it is expected that approximately 4,400kg of Zinc, 3kg of Cobalt and 350kg of 4,4'-Isopropylidenediphenol (Bisphenol A) were sent to out as a finished good instead of going to landfill in 2016.

10.4 Inventory Management

Adjust Batch Sizes: Implementation of regular Batch Size Adjustments were completed in June, 2013. Batch planning of new products will be calculated so that complete containers of toxic materials will be used to minimize the potential for spills of this material.

- ***Potential Toxics Reduction:*** This option would result in minimizing the number of open containers of toxic substances being kept on site that could be spilled or misplaced. No specific toxic reductions have been estimated for this option.

10.5 Training

Vacuum System Training: Implementation of training for proper use of the new Vacuum System were completed prior to December 31st, 2011. New employees will receive this training as part of their initial indoctrination training.

- **Potential Toxics Reduction:** Proper use of the proposed new vacuum system will minimize the amount of airborne dust that can escape the plant. As these emissions have not been quantified, no reduction in the use and or releases of the toxic substance are possible at this time.

11.0 RECOMMENDATIONS

The following recommendations have been developed to help improve the quality of data and the accuracy of the emission estimates used in preparing the plan.

1. If possible the methodology for estimating the transfers of toxic substances for recycling and disposal should be updated to use more accurate mass balance data. Data on the quantity of toxic substances in recycled materials transferred off-site as a product is currently estimated based on an assumed 3% loss of material being captured by the baghouse and sold as a product. If possible, the actual mass of recycled materials transferred off-site as a product should be collected and used to calculate this estimate.
2. If possible the methodology for estimating the disposals of toxic substances from the facility should be updated to use more accurate mass balance data. The current methodology relies on the assumptions used to estimate the quantity of recycled materials transferred off-site as a product.
3. Improve the transparency of the yield loss data used in calculating waste volumes.
4. Correct the calculation methodology used to estimate the quantity of toxic substances disposed of to account for the % of toxic substances in the individual products. The current methodology uses the total quantity of toxic substances containing materials used (kg) multiplied by the yield loss (%) for each, but does not account for the concentration of toxic substances in the materials.
5. Additional data on the costs associated with the disposal of toxic substances including landfilling and transportation costs should be collected to further refine the cost estimate for toxics disposals.

12.0 CERTIFICATION

This Toxic Substance Reduction Plan Summary accurately reflects the current version of the Toxic Substance Reduction Plan.

As of __________________________ (Date), I, Anthony Susi certify that I have read the Toxic Substance Reduction Plan for the toxic substance(s) referred to 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.

____ ________________________

Anthony Susi, Plant Manager Date

As of December 31st, 2017, I Douglas McLaren, certify that I am familiar with the processes at the Sherwin Williams Grimsby Facility 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 November 5, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under the Act.

____ December 18th, 2017

Douglas McLaren, P.Eng. Toxic Substance Reduction Planner Date

Substance Name	Chemical Abstracts Service (CAS) Number
4,4'-Isopropylidenediphenol (Bisphenol A)	80-05-7
Cobalt	N/A
Zinc (Dust- Ultra Pure)	740-66-6

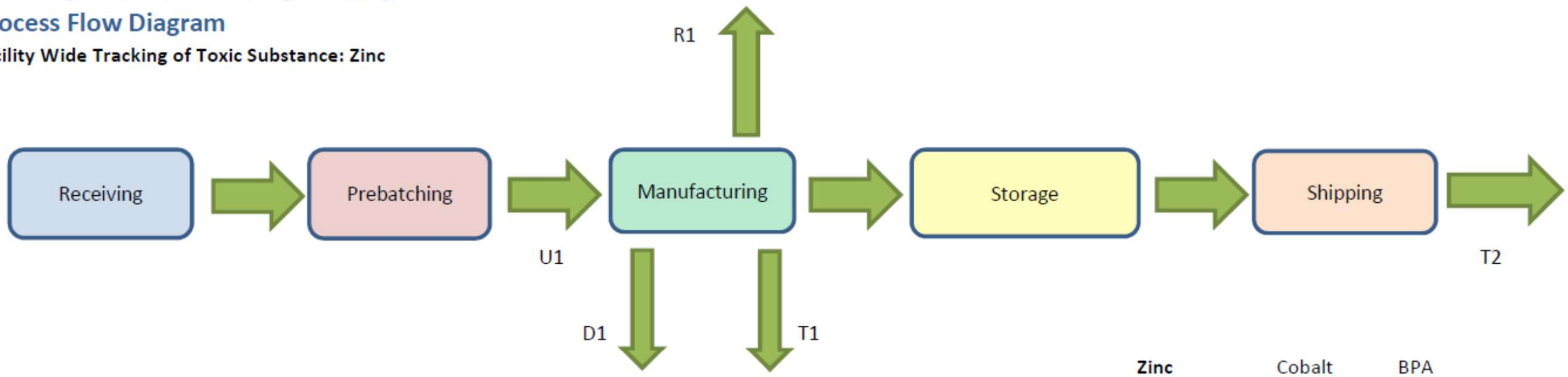
Attachment 1

Sherwin Williams Canada Inc.

Grimsby Powder Coating Facility

Process Flow Diagram

Facility Wide Tracking of Toxic Substance: Zinc



U1	Uses of Toxic Substance
R1	Releases of Toxic Substance
D1	Disposal of Toxic Substance
T1	Transfers of Toxic Substance
➡	Denotes the movement of Toxic Substance trhough the facility

	Zinc	Cobalt	BPA
2016 Reporting Year	**kg**	**kg**	**kg**
U1 - Total Usage	147,917	110	11541
R1 - Air Emissions	22	0.02	2
D1 - Disposal of Waste	2590	2	202
T1 - Transfer of recycled fines	0		
T2 - Transfer of Product	145,305	108	11338

Mass Balance			
Kg IN	147,917	110	11,541
kg Out to air	-22	0	-2
kg Out to landfill	-2590	-2	-202
kg Out to Recycling	0	0	0
kg Out as Product	-145,305	-108	-11,338
kg not accounted for in this Mass Balance	0	0	0

Attachment 2

NPRI & TRA Quantifications Spreadsheet

Attach CD Here

12.0 CERTIFICATION

This Toxic Substance Reduction Plan Summary accurately reflects the current version of the Toxic Substance Reduction Plan.

As of December 22, 2017 (Date), I, Anthony Susi certify that I have read the Toxic Substance Reduction Plan for the toxic substance(s) referred to 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.

Anthony Susi, Plant Manager

December 22/17
Date

As of December 31st, 2017, I Douglas McLaren, certify that I am familiar with the processes at the Sherwin Williams Grimsby Facility 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 November 5, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under the Act.

Douglas McLaren, P.Eng. Toxic Substance Reduction Planner

December 18th, 2017
Date

Substance Name	Chemical Abstracts Service (CAS) Number
4,4'-Isopropylidenediphenol (Bisphenol A)	80-05-7
Cobalt	N/A
Zinc (Dust- Ultra Pure)	740-66-6