PANOLAM INDUSTRIES®

Panolam Industries International, Inc.
20 Progress Drive
Shelton, Connecticut 06484
203 925 1556

Toxic Substance Reduction Plan

Sulfur Dioxide

Plan Date: November 17, 2015

BASIC FACILITY INFORMATION:

Name and CAS # of Substance	Sulfur Dioxide (SO_2)	CAS: 7446-09-5
Substances for which other plans have been prepared:	Formaldehyde, Methanol, PM, PM10, PM2.5, Acetone, Ammonia, Propane, a-pinene, b-pinene, d-limonene, Carbon Monoxide, Nitrogen Oxides	
Facility Identification and Site Address		
Company Name	Panolam Industries Ltd.	
Facility Name	Huntsville Facility	
Facility Address	**Physical Address**	**Mailing Address: (if different)**
	61 Domtar Road Huntsville, ON P1H 2J7	Muskoka Road 3 Box 7500 Huntsville, ON P1H, 2 J7
Spatial Coordinates	**Zone 17T Easting: 632470 Northing: 5016877**	
Number of Employees:	**107**	
NPRI ID	**001199**	
Ontario MOE ID Number	**5971**	
Parent Company Information		
Name and Address	**Panolam Industries International Inc.**	
Percent Ownership	**100**	
Business Number	**893780742**	
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	**32**	
4 Digit NAICS Code	**3212**	
6 Digit NAICS Code	**321216**	
Company Contact Information		
Facility Public Contact	Al Stobbart	Same Address as facility
	Al_stobbart @panolam.com	
	Phone: (705) 789-9683	
	FAX: (705)789-6270	
Parent Company Contact Information		
Parent Company Contact	Jeffrey O'Hearn	Same Address as Parent Company
	Jeffrey_ohearn@panolam.com	
	Phone: (203) 925-1556	
	FAC: (203) 225-0050	

PLAN SUMMARY STATEMENT:
This plan accurately reflects the content of the toxic substance reduction plan for Sulfur Dioxide, prepared by Panolam Industries, Ltd.

STATEMENT OF INTENT:
Panolam prides itself on being an environmentally proactive company. The facility will strive to reduce the creation and emission of Sulfur Dioxide from the facility. A technical and economic feasibility analysis has been conducted to determine the options available for implementation.

REDUCTION OBJECTIVES:

As Sulfur compounds are required for the current resin system and their use is optimized to ensure proper product quality there are currently no options for reduction however Panolam will continue to monitor its process and current advances in technology in the event that options are available in the future.

DESCRIPTION OF SUBSTANCE:

Sulfur Dioxide	Generated during the combustion of wood dust in the particleboard dryers

Over the past several years the facility has made a significant effort to reduce the scrap levels at the facility which reduces the amount of wood fiber required and therefore reduces the amount of SO_2 generated in the process.

TOXIC SUBSTANCE REDUCTION OPTION(S) TO BE IMPLEMENTED:

No current options have been selected for implementation.

PLANNER RECOMMENDATIONS

Based on **Trinity Consultants Ontario Inc**. (Trinity's) review of the Panolam Industries Ltd.'s Huntsville facility *Toxic Substance Reduction* (TSR) Plan for Sulphur dioxide (SO_2), the following recommendations are submitted for consideration:

Expertise Relied on in Preparing the Plan

The TSR Plan was prepared by Jeffrey O'Hearn, Corporate Environmental Manager for Panolam Industries International Inc. Mr. O'Hearn also relied on input from representatives at the facility. The technical process and accounting expertise used in preparing the plan appears to be appropriate to the requirements of *O. Reg 455/09* and no additional recommendations are noted in this regard.

Identification and Description of Stages and Processes

The Panolam Huntsville TSR Plan for SO_2 provided a detailed summary of the processes of the operations at the subject facility, including the process flow of the target substance. Based on Trinity's review of the TSR Plan document, the processes at the subject facility appear to have been identified and described with a level of detail that is sufficient for the reviewers of the TSR plan to understand the following:

- The purpose and particulars of the toxic substance that is used
- The reason the toxic substance is required
- The nature of inputs that contain the toxic substance
- The locations in which the toxic substance is used
- The times at which the toxic substance is used
- The end points/fates of the toxic substance

It is noted that, while the processes are well defined and described, the initial breakdown to stages is defined as a single one. It is understood that, based on the flow of materials, this is considered to be the best available approach. Based on Trinity's review of this component of the TSR Report, no other recommendations are noted in this regard.

Process Flow Diagrams

The Panolam Huntsville TSR Plan provided process flow diagrams for the target substance throughout the facility operations. Based on Trinity's review of the TSR Plan document, the process flow diagrams provided in the TSR report have a sufficient level of detail to illustrate the individual steps of the process as well as their relationship to each other. Therefore, no additional recommendations are noted in this regard.

Data and Methods Used in Toxic Substance Accounting

The Panolam Huntsville TSR Plan used data sources for the target substance that appeared to be in accordance with industry standard practices, including direct measurement and/or laboratory analysis, as well as process engineering estimates. The methodology produced results that were representative of the input/output quantities of the toxic substance used at a sufficient balance of cost-effectiveness and accuracy for the TSR reporting, and it did not appear that significant gains in the accuracy of the results could be obtained by replacing any of the estimates with additional measurements and/or laboratory analysis. Therefore, no additional recommendations are submitted in this regard.

Analysis of Input/Output Balances

The Panolam Huntsville TSR Plan quantified the input/output balances using methodology that was consistent with the level of accuracy needed for assessing toxics reduction options, and no significant data gaps were encountered. Based on Trinity's review of the TSR Plan document, the process flow diagrams provided in the TSR report have a sufficient level of detail to illustrate the individual stages of the process as well as their relationship to each other. It is noted that the Input/Output Balances are shown simply as 'In + Created' = 'Out + Destruction'. It would be ideal to show each specific input and output, such as 'C1 + C2 + C3 = A2 + A3 + A4'. This is not a necessity, but would facilitate future review. Otherwise, no additional recommendations are noted in this regard.

Direct and Indirect Cost Analysis

The Panolam Huntsville TSR Plan provided an analysis of direct and indirect costs for the reduction of the target toxic substances. Based on Trinity's review of the TSR Plan document, the cost analysis and allocations provided in the TSR report have a sufficient level of detail for the purposes of the TSR Plan. Therefore, no additional recommendations are submitted in this regard.

Identified Options

The Panolam Huntsville TSR Plan provided a summary of the toxics reduction options, along with a description of the effects of implementing the options on production resources, facility configuration and equipment, and final product quality. Based on Trinity's review of the TSR Plan document, the identified toxics reduction options in the report have a sufficient level of analysis to determine economic feasibility. Therefore, no additional recommendations are noted in this regard.

Reduction Estimates for Each Option

The Panolam Huntsville TSR Plan provided reduction estimates for the target toxic substance, which were based on calculations from process inputs after the implementation of the toxics reduction options. Based on Trinity's review of the TSR Plan document, the reduction estimates appear to be conservatively based on the best available information, and no additional recommendations are noted in this regard.

Technical and Economic Feasibility Analysis

The Panolam Huntsville TSR Plan provided a feasibility analysis that summarized which toxics reductions options are first technically feasible, and once identified as such, which are also economically viable. The level of effort and the approach taken to estimate reductions and determine the economic (and technical) feasibility is at the discretion of the facility. No additional recommendations are noted in this regard.

Additional Feasible Reduction Options

Based on our review of the Panolam Huntsville TSR Plan, Trinity does not presently have any knowledge of any additional technically and economically feasible options that would that would result in reductions that are equal to or greater than those already identified in the plan. Therefore, no additional recommendations are noted in this regard.

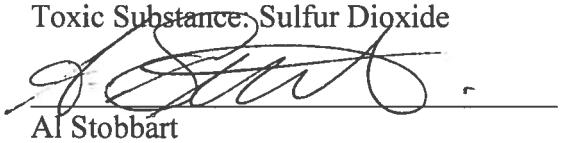
Implementation Steps, Timelines, and Achievability

As no reduction options were identified as being both technically and economically feasible, no implementation steps have been included. Therefore, no additional recommendations are noted in this regard.

CERTIFICATION BY HIGHEST RANKING EMPLOYEE:

As of November 17, 2015 I, Al Stobbart, certify that I have read the toxic substance reduction plan for the toxic substance referenced 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.

Toxic Substance: Sulfur Dioxide

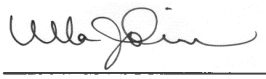


Al Stobbart
Plant Manager
Panolam Industries Ltd.

CERTIFICATION BY LICENSED PLANNER:

As of November 17, 2015, I, Ulla Jokinen of Trinity Consultants Ontario Inc., certify that I am familiar with the processes at the Panolam Industries Ltd Huntsville facility, that uses or creates 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 17, 2015 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under the Act.

Toxic Substance: Sulfur Dioxide



Ulla Jokinen, B.Sc., C.E.T. of Trinity Consultants Ontario Inc.,
Toxic Substance Reduction Planner
Planner License No: TSRP0090