



**2013 TOXICS REDUCTION ACT**

**Report on Toxic Substance  
Accounting Requirements**

Suncor Energy Products Inc.  
Sarnia Refinery  
1900 River Road  
Sarnia, Ontario  
N7T 7J3

June 2014



## Version Control

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## **1.0 INTRODUCTION**

Suncor Energy Products Inc. Sarnia Refinery is a crude oil refinery that produces a number of fuel products including gasoline, kerosene, home heating oils, jet and diesel fuels, residual oils for industrial use, as well as chemical feedstocks.

Protection of the environment is a fundamental Suncor value. It is our responsibility to determine and manage the impacts of our business through programs like the Toxics Reduction Act.

This annual toxics substance accounting report has been prepared to meet the regulatory obligations specified in Section 10 of the Act and has been prepared in accordance with the requirements of Section 27(1) of Ontario Regulation 455/09, as amended from time to time. It summarizes the relevant reporting requirements and will be updated, as required by the Act and O. Reg. 455/09.

For more information on the Toxics Reduction Act and O. Reg. 455/09 visit: <http://www.ontario.ca/environment-and-energy/toxic-substance-reduction-planner-licence>



## **2.0 REPORTING CRITERIA**

Section 3(1) of the Act specifies the criteria requiring the preparation of a toxic substance plan. These criteria are as follows:

*3. (1) The owner and the operator of a facility shall ensure that a toxic substance reduction plan is prepared for a toxic substance in accordance with this Act and the regulations if all of the following criteria are met:*

*1. The facility belongs to a class of facilities prescribed by the regulations.*

*2. The number of persons employed at the facility exceeds the number of persons prescribed by the regulations.*

*3. The toxic substance is used or created at the facility and the amounts of the substance that are used or created meet the criteria prescribed by the regulations.*

*4. Such other criteria as are prescribed by the regulations. 2009, c. 19, s. 3 (1).*

Specific criteria are outlined in O. Reg. 455/09. The following sections detail the criteria and applicability to the Suncor facility.

### **2.1 Class of Facility**

Section 4(1) of O. Reg. 455/09 specifies the types of facilities subject to toxic substance reduction planning and includes facilities that begin in North American Industry Classification System code "31", "32" or "33" and "212".

The Suncor Sarnia Refinery carries out processes and activities related to "Petroleum and Coal Product Manufacturing", which begins in NAICS code "32", which is a code identified in O. Reg. 455/09.

### **2.2 Number of Persons**

Section 5 of O. Reg. 455/09 specifies the numbers of persons at a facility must be greater than zero. In 2013, the Sarnia Refinery employed 810 full-time equivalent employees.

### **2.3 Amounts of Toxic Substance Used or Created**

Section 6 of O. Reg. 455/09 specifies that amounts of a toxic substance used or created must exceed zero. In 2013, the use or creation of toxic substances for which accounting is required is greater than zero (refer to Section 4).



## 2.4 Other Criteria

Section 7(1) of O. Reg. 455/09 requires the owner and operator of a facility provide information on National Pollutant Release Inventory (TRA) substances if reporting to the TRA is required; or if the substance is acetone and reporting under Ontario Regulation 127/01 (Airborne Contaminant Discharge Monitoring and Reporting) made under the Environmental Protection Act applies.

In 2013, Suncor Sarnia Refinery was required to report to the TRA. Specifically, the Suncor Sarnia Refinery met the reporting requirements for the following substances listed in Schedule A of O. Reg. 455/09:

### ***TRA Part 1A Substances:***

- 1,2,4-Trimethylbenzene
- Ammonia
- Asbestos
- Benzene
- Cadmium
- Cyclohexane
- Ethylbenzene
- Hydrofluoric acid
- Hydrogen Sulfide
- Cumene
- Methanol
- Naphthalene
- N-hexane
- Nickel compounds
- Sulphuric acid
- Toluene
- Xylene
- Total Reduced Sulfur

### ***TRA Part 4 Substances:***

- Oxides of Nitrogen
- Carbon Monoxide
- Sulfur Dioxide
- Total Particulate Matter
- PM 10
- PM 2.5

### ***TRA Part 5 Substances:***

- 1,2,4-Trimethylbenzene (also reported as a Part 1A Substance)



- Benzene (also reported as a Part 1A substance)
- N-hexane (also reported as a Part 1A Substance)
- Propane
- Toluene (also reported as a Part 1A Substance)
- Xylene (also reported as a Part 1A Substance)
- Butane (all isomers)
- Butene (all isomers)
- Heptane (all isomers)
- Hexane (all isomers)
- Nonane (all isomers)
- Octane (all isomers)
- Pentane (all isomers)





### 3.0 GENERAL FACILITY INFORMATION

Table 3-1 summarizes the general facility information with reference to the Act and/or O. Reg. 455/09.

**Table 3-1: General Facility Information**

Reporting Requirement	Facility Information	Reference to Act and/or O. Reg. 455/09
Parent Company Name	Suncor Energy Inc.	O. Reg. 455/09 s.18(2) subparagraph 14
Parent Company Address	150 6 <sup>th</sup> Avenue SW Calgary, Alberta T2P 3E3	O. Reg. 455/09 s.18(2) subparagraph 14
Facility Name	Suncor Energy Sarnia Refinery	O. Reg. 455/09 s.18(2) subparagraph 4
Facility Address	1900 River Road Sarnia, Ontario N7T 7J3	O. Reg. 455/09 s.18(2) subparagraph 4
Universal Transverse Mercator (UTM) in North American Datum (NAD83)	Latitude: 42.93060 Longitude: -82.44330	O. Reg. 455/09 s.18(2) subparagraph 13
National Pollutant Release Inventory Identification Number	3071	O. Reg. 455/09 s.18(2) subparagraph 2
Ontario Regulation 127/01 Identification Number	Not applicable	O. Reg. 455/09 s.18(2) subparagraph 3
Two Digit North American Industry Classification System (NAICS) Code	32 – Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Four Digit North American Industry Classification System (NAICS) Code	3241 – Petroleum and Coal Product Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Six Digit North American Industry Classification System (NAICS) Code	324110 – Petroleum Refineries	O. Reg. 455/09 s.18(2) subparagraph 6
Number of Full-time Employee Equivalents at the Facility	810 (as of December 31, 2013)	O. Reg. 455/09 s.18(2) subparagraph 5
Facility Public Contact	Jennifer Johnson Communications & Stakeholder Relations Advisor 1900 River Road Sarnia, Ontario N7T 7J3 Email: jjohnson@suncor.com	O. Reg. 455/09 s.18(2) subparagraph 7



## 4.0 SUBSTANCE REPORTING

In accordance with s. 26(1) subparagraphs 2 and 7, the Suncor Sarnia Refinery made determinations for each substance reportable under the Act as follows:

- 1) The amount of the substance that enters a process as the substance itself or as a constituent of another substance.
- 2) The amount of the substance that is created.
- 3) If the substance is a TRA substance,
  - i. quantifications relating to its release, disposal and transfer that,
    - A. are required to be provided under the TRA Notice, or
    - B. are determined through mass balance, published emission factors, site specific emission factors or engineering estimates, if no quantifications were required to be provided under the TRA Notice, and
  - ii. the amount of the substance that is contained in product, other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the TRA Notice.
- 4) If the toxic substance is acetone, the calculations mentioned in subsection 4 (3) of Ontario Regulation 127/01 (Airborne Contaminant Discharge Monitoring and Reporting) made under the Environmental Protection Act.

For the purposes of maintaining confidentiality, the Suncor Sarnia Refinery has reported 'Use', 'Created' and 'Contained in Product' quantities in the bands and ranges prescribed by the Ontario Ministry of the Environment. The band and ranges specified by the Ontario Ministry of the Environment are summarized as follows:

- >0 to 1
- >1 to 10
- >10 to 100
- >100 to 1,000
- >1,000 to 10,000
- >10,000 to 100,000
- >100,000 to 1,000,000

The units of measure depend upon the substance being reported under the TRA and O. Reg. 127/01. Generally, release, disposal and recycling quantities are reported in tonnes. However, for substances with alternate reporting thresholds, these quantities are reported in kilograms or grams.

- TRA Part 1A – Substances listed at the original TRA threshold [tonnes]
- TRA Part 1B – Metals listed at an alternate threshold [kilograms]
- TRA Part 2 – Polycyclic aromatic compounds (PAHs), [kilograms]
- TRA Part 3 – Hexachlorobenzene (HCB), Dioxins/furans (toxic equivalent), [grams]
- TRA Part 4 – Criteria Air Contaminants (CACs) [tonnes]
- TRA Part 5 – Speciated volatile organic compounds [tonnes]
- O. Reg. 127/01 – Acetone [tonnes]



The following sections summarize the information outlined above for each substance.

**Note:**

'—' is equal to zero in the tables below

'0.0000' is a value greater than zero and greater than four (4) decimal places

n/a is not applicable

**4.1 1,2,4 Trimethylbenzene (CAS# 95-63-6)**

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	1%	72.6269	No significant change
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	1%	329.6241	No significant change
Contained in Product (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	1%	402.2510	No significant change
Air Releases (tonnes)	1.2064	1.1432	-5%	-0.0632	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a



## 4.2 Ammonia (CAS# NA - 16)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10 to 100	> 10 to 100	9%	1.5331	Feedstock variability
Created (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	4%	166.8927	No significant change
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	6.4906	5.8461	-10%	-0.6445	Updated LDAR speciation; equipment outages
Water Releases (tonnes)	9.0930	7.3583	-19%	-1.7347	Outage activities in 2013; less cooling water discharge
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

## 4.3 Asbestos (CAS# 1332-21-4)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	—	—	—	—	n/a
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	—	—	—	—	n/a
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	9.5900	28.8700	201%	19.2800	Increased maintenance work requiring asbestos removal
Transferred for Recycling (tonnes)	—	—	—	—	n/a



#### 4.4 Benzene (CAS# 71-43-2)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	>1,000 to 10,000	>1,000 to 10,000	7%	418.0695	No significant change
Created(tonnes)	>10,000 to 100,000	>10,000 to 100,000	-2%	-512.5969	No significant change
Contained in Product (tonnes)	>10,000 to 100,000	>10,000 to 100,000	-0.2%	-94.5274	No significant change
Air Releases (tonnes)	6.4398	5.8117	-10%	-0.6281	Updated LDAR speciation
Water Releases (tonnes)	0.0013	0.0013	0.0000%	0.0000	No significant change
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	0.1083	0.0391	-64%	-0.0692	Less tank cleaning in 2013 resulting in less disposal
Transferred for Recycling (tonnes)	0.0056	—	n/a	0.0056	No fuel blending of benzene waste

#### 4.5 Cadmium and its compounds (CAS# NA-03)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (kg)	Rationale For Change (if >10%)
Use (kg)	> 1 to 10	> 1 to 10	9%	0.5052	No significant change
Created (kg)	—	—	—	—	n/a
Contained in Product (kg)	—	—	—	—	n/a
Air Releases (kg)	5.5434	6.0486	9%	0.5052	No significant change
Water Releases (kg)	—	—	—	—	n/a
On-site Disposal (kg)	—	—	—	—	n/a
Transferred for Disposal (kg)	—	—	—	—	n/a
Transferred for Recycling (kg)	—	—	—	—	n/a



#### 4.6 Cyclohexane (CAS# 110-82-7)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	21%	2387.8995	Feedstock variability
Created (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	11%	666.0870	Increase in production levels
Contained in Product (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	75%	3790.3187	Variability in analytical data in product streams
Air Releases (tonnes)	5.9009	4.8567	-18%	-1.0442	Tank service change/outage and enhanced LDAR speciation
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

#### 4.7 Ethylbenzene (CAS# 100-41-4)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	>10,000 to 100,000	>10,000 to 100,000	13%	1986.7038	Feedstock variability
Created (tonnes)	>10,000 to 100,000	>10,000 to 100,000	2%	429.0087	No significant change
Contained in Product (tonnes)	>10,000 to 100,000	>10,000 to 100,000	6%	2415.7125	No significant change
Air Releases (tonnes)	2.5934	2.1078	-19%	-0.4856	Updated LDAR speciation
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	0.3475	0.2025	-72%	-0.1450	Less tank cleaning and sludge disposal in 2013
Transferred for Recycling (tonnes)	0.0041	0.0064	56%	0.0023	Increased fuel blending of ethylbenzene waste



#### 4.8 Hydrofluoric Acid (CAS# 7664-39-3)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10 to 100	> 10 to 100	-3%	-1.7477	No significant change
Created (tonnes)	—	—	—	—	n/a
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	0.8771	1.6978	94%	0.8207	Analyzer variation
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

#### 4.9 Hydrogen Sulfide (CAS# 7783-06-4)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 1 to 10	> 1 to 10	17%	1.4891	Increase in production levels
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	21%	8611.7481	Increase in production levels
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	4.0578	1.0986	-73%	-2.9593	Decreased tank emissions; new sour water tank storage with vent gas incineration
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a



#### 4.10 Cumene (CAS# 98-82-8)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 1,000 to 10,000	> 100 to 1,000	-9%	-85.6349	No significant change
Created (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	13%	161.0594	Increase in production levels; feedstock variability
Contained in Product (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	3%	75.4245	No significant change
Air Releases (tonnes)	0.5091	0.5303	4%	0.0212	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

#### 4.11 Methanol (CAS# 67-56-1)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	>100 to 1,000	>100 to 1,000	65%	73.2400	Increased methanol usage for freeze protection in 2013
Created (tonnes)	—	—	—	—	n/a
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	0.0419	0.0502	20%	0.0083	Increased methanol usage for freeze protection in 2013
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a





#### 4.12 Naphthalene (CAS#91-20-3)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	7%	4056.6177	No significant change
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	-11%	-2312.0065	Feedstock variation
Contained in Product (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	7%	2090.1752	No significant change
Air Releases (tonnes)	0.2801	0.2649	-5%	-0.0152	Updated LDAR speciation
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	0.1234	0.0012	-99%	-0.1222	Less tank cleaning and sludge disposal in 2013
Transferred for Recycling (tonnes)	0.0003	—	100%	0.0003	No fuel blending of naphthalene waste in 2013

#### 4.13 N-Hexane (CAS# 110-54-3)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	7%	2532.4480	No significant change
Created (tonnes)	> 1,000 to 10,000	> 10,000 to 100,000	28%	2181.0611	Increased production levels
Contained in Product (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	24%	9239.7613	Increased production levels
Air Releases (tonnes)	15.2653	15.4959	2%	0.2305	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a



#### 4.14 Nickel and its compounds (CAS# NA-11)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 0 to 1	> 1 to 10	-2%	-0.0006	No significant change
Created (tonnes)	—	—	—	—	n/a
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	0.0267	0.0261	-2%	-0.0006	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

#### 4.15 Sulphuric Acid (CAS# 7664-93-9)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10 to 100	> 10 to 100	24%	7.1000	Change in production levels
Created (tonnes)	> 1 to 10	> 1 to 10	9%	0.4592	No significant change
Contained in Product (tonnes)	—	—	—	—	n/a
Air Releases (tonnes)	4.9329	5.3921	9%	0.4592	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a



#### 4.16 Toluene (CAS# 108-88-3)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	7%	3611.7524	No significant change
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	2%	2048.8296	No significant change
Contained in Product (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	3%	5650.8124	No significant change
Air Releases (tonnes)	33.6640	28.9629	-14%	-4.7011	Decreased loading activities
Water Releases (tonnes)	0.0011	0.0013	18%	0.0002	Analytical variation
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	0.4190	0.0379	-91%	0.3811	Less tank cleaning and sludge disposal in 2013
Transferred for Recycling (tonnes)	0.0139	—	100%	0.0139	No fuel blending of toluene waste

#### 4.17 Xylene, all isomers (CAS# 1330-20-7)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	9%	2253.6332	No significant change
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	-1%	-1802.2564	No significant change
Contained in Product (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	0.3%	451.3769	No significant change
Air Releases (tonnes)	21.0522	20.2420	-4%	-0.8102	No significant change
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	0.3780	0.9222	144%	0.5442	More soil disposal in 2013
Transferred for Recycling (tonnes)	0.0152	0.0263	73%	0.0111	Increased fuel blending of xylene waste



#### 4.18 Total Reduced Sulfur (CAS# NA-M14)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 100 to 1,000	> 100 to 1,000	14%	42.1028	Increase in production levels
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	21%	8500.3939	Increase in production levels
Contained in Product (tonnes)	> 10 to 100	> 10 to 100	3%	1.5129	No significant change
Air Releases (tonnes)	4.0578	1.0986	-73%	-2.9593	Decreased tank emissions; new sour water tank storage with vent incineration
Water Releases (tonnes)	—	—	—	—	n/a
On-site Disposal (tonnes)	—	—	—	—	n/a
Transferred for Disposal (tonnes)	—	—	—	—	n/a
Transferred for Recycling (tonnes)	—	—	—	—	n/a

#### 4.19 Oxides of Nitrogen (CAS# 11104-93-1)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 100 to 1,000	> 100 to 1,000	11%	76.7034	Increase in production levels
Air Releases (tonnes)	674.5341	751.2375	11%	76.7034	Increase in production levels



#### 4.20 Carbon Monoxide (CAS# 630-08-0)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 1,000 to 10,000	> 1,000 to 10,000	-8%	-391.4824	No significant change
Air Releases (tonnes)	4712.5230	4321.0406	-8%	-391.4824	No significant change

#### 4.21 Sulfur Dioxide (CAS# 7446-09-5)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 100 to 1,000	> 100 to 1,000	-28%	-85.7197	No acid gas flaring events in 2013
Air Releases (tonnes)	301.5585	215.8388	-28%	-85.7197	No acid gas flaring events in 2013

#### 4.22 Total Particulate Matter (CAS# NA - M08)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 10 to 100	> 10 to 100	-7%	-5.5143	No significant change
Air Releases (tonnes)	74.4647	68.9504	-7%	-5.5144	No significant change



#### 4.23 PM10 - Particulate Matter <10 microns (CAS# NA – M09)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 10 to 100	> 10 to 100	-6%	-2.4474	No significant change
Air Releases (tonnes)	40.7967	38.3493	-6%	-2.4474	No significant change

#### 4.24 PM2.5 - Particulate Matter < 2.5 microns (CAS# NA – M10)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	—	—	—	—	n/a
Created (tonnes)	> 10 to 100	> 10 to 100	-1%	-0.2456	No significant change
Air Releases (tonnes)	16.8951	16.6495	-1%	-0.2456	No significant change

#### 4.25 Propane (CAS# 74-98-6)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	53%	5499.2990	Feedstock variability
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	4%	2151.8969	No significant change
Air Releases (tonnes)	5.3497	4.6632	-13%	-0.6865	Updated LDAR speciation



#### 4.26 Butane, all isomers (CAS# NA-24)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	8%	8196.5980	No significant change
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	3%	3880.6886	No significant change
Air Releases (tonnes)	27.1735	31.1735	15%	3.9985	Updated LDAR speciation and inclusion of brine degassing emissions

#### 4.27 Butene, all isomers (CAS# 25167-67-3)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	-22%	-7968.2808	Less butene receipts
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	40%	5119.8883	Variation in available analytical data
Air Releases (tonnes)	1.1551	15.2544	1220%	14.0993	Updated LDAR speciation and inclusion of brine degassing emissions

#### 4.28 Heptane, all isomers (CAS# NA-31)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	37%	18230.3332	Feedstock variability
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	-2%	-1575.5264	No significant change
Air Releases (tonnes)	3.1442	2.8692	-9%	-0.2750	No significant change



#### 4.29 Hexane, all isomers excluding n-hexane (CAS# NA-32)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	-9%	-4485.4684	No significant change
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	7%	7073.6202	No significant change
Air Releases (tonnes)	2.5771	3.1152	21%	0.5381	Updated LDAR speciation and inclusion of brine degassing emissions

#### 4.30 Nonane, all isomers (CAS# NA-33)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	9%	4551.8845	No significant change
Created (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	13%	7981.8947	Variation in available analytical data
Air Releases (tonnes)	5.2523	0.8635	-84%	-4.3888	Updated LDAR speciation

#### 4.31 Octane, all isomers (CAS# NA-34)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	38%	16879.8770	Feedstock variability
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	1%	1200.8432	No significant change
Air Releases (tonnes)	3.5426	3.1731	-10%	-0.3695	Updated LDAR speciation





#### 4.32 Pentane, all isomers (CAS# NA-35)

Required Information	2012 Reporting Year	2013 Reporting Year	Change (%)	Change (tonnes)	Rationale For Change (if >10%)
Use (tonnes)	> 10,000 to 100,000	> 10,000 to 100,000	7%	5674.9413	No significant change
Created (tonnes)	> 100,000 to 1,000,000	> 100,000 to 1,000,000	6%	7965.5808	No significant change
Air Releases (tonnes)	7.4965	7.5330	0.5%	0.0365	No significant change



## **5.0 TOXIC SUBSTANCE REDUCTION PLAN SUMMARY**

As described in the Toxic Substance Reduction Plan Summaries dated [December 14, 2012](#) and [December 14, 2013](#), there were no options identified for implementation, above and beyond the actions the Sarnia Refinery has already taken, at this time. The plan will be reviewed in accordance with the Act and regulation, at which time new options may be identified and considered for implementation.

Finally, there have been no amendments to the Toxic Substance Reduction Plan Summaries dated December 14, 2012 and December 14, 2013.



## **6.0 ANNUAL CERTIFICATION STATEMENT**

In accordance with s.19 of O. Reg. 455/09, the highest ranking employee at the facility electronically certified the toxic substance plan. A copy of the electronic certification is provided in Attachment 1.



## **Attachment 1: Copy of Electronic Certification**

# Report Submission and Electronic Certification

## NPRI - Electronic Statement of Certification

Specify the language of correspondence

Comments (optional)

I hereby certify that I have exercised due diligence to ensure that the submitted information is true and complete. The amounts and values for the facility(ies) identified below are accurate, based on reasonable estimates using available data. The data for the facility(ies) that I represent are hereby submitted to the programs identified below using the Single Window Reporting Application.

I also acknowledge that the data will be made public.

Note: Only the person identified as the Certifying Official or the authorized delegate should submit the report(s) identified below.

Company Name

Certifying Official (or authorized delegate)

Report Submitted by

I, the Certifying Official or authorized delegate, agree with the statements above and acknowledge that by pressing the "Submit Report(s)" button, I am electronically certifying and submitting the facility report(s) for the identified company to its affiliated programs.

## ON MOE TRA - Electronic Certification Statement

### Annual Report Certification Statement

#### TRA Substance List

**CAS RN**

**Substance Name**

110-82-7	Cyclohexane
11104-93-1	Nitrogen oxides (expressed as NO <sub>2</sub> )
1330-20-7	Xylene (all isomers)
1332-21-4	Asbestos (friable form only)
630-08-0	Carbon monoxide
67-56-1	Methanol
7446-09-5	Sulphur dioxide
7664-39-3	Hydrogen fluoride
7664-93-9	Sulphuric acid
7783-06-4	Hydrogen sulphide
91-20-3	Naphthalene
95-63-6	1,2,4-Trimethylbenzene
98-82-8	Cumene
NA - 03	Cadmium (and its compounds)
NA - 11	Nickel (and its compounds)
NA - 16	Ammonia (total)
NA - M08	Total Particulate Matter

NA - M09	PM10 - Particulate Matter
NA - M10	PM2.5 - Particulate Matter
NA - M14	Total reduced sulphur (expressed as hydrogen sulphide)
NA - M16	Volatile Organic Compounds (VOCs)
71-43-2	Benzene

## Exit Record Certification Statement

### TRA Exit Record Substances

CAS RN	Substance Name
86-73-7	Fluorene
129-00-0	Pyrene
191-24-2	Benzo(g,h,i)perylene
206-44-0	Fluoranthene
207-08-9	Benzo(k)fluoranthene
83-32-9	Acenaphthene
50-32-8	Benzo(a)pyrene
56-55-3	Benzo(a)anthracene
85-01-8	Phenanthrene
218-01-9	Benzo(a)phenanthrene

Company Name

Suncor Energy Products Partnership

Highest Ranking Employee

Mark Hiseler

Report Submitted by

Mark Hiseler

I, the highest ranking employee, agree with the certification statement(s) above and acknowledge that by checking the box I am electronically signing the statement(s). I also acknowledge that by pressing the 'Submit Report(s)' button I am submitting the facility record(s)/report(s) for the identified facility to the Director under the Toxics Reduction Act, 2009. I also acknowledge that the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 provide the authority to the Director under the Act to make certain information as specified in subsection 27(5) of Ontario Regulation 455/09 available to the public.

Submitted Report

Period	Submission Date	Facility Name	Province	City	Programs
2013	30/05/2014	Sarnia Refinery	Ontario	Sarnia	NPRI, ON MOE TRA, NFPRER

Note: If there is a change in the contact information for the facility, a change in the owner or operator of the facility, if operations at the facility are terminated, or if information submitted for any previous year was mistaken or inaccurate, please update this information through SWIM or by contacting the National Pollutant Release Inventory directly.