Esso Imperial Oil

**Imperial Oil**
**Products and Chemicals Division**
P.O. Box 3004
Sarnia ON N7T 7M5

B.M.Fairley
Sarnia Refinery Manager

Tel: (519) 339-2000

December 19, 2012

**Sarnia Refinery – Reduction Plan Summary (OR 455/09)**

Provincial regulations set out requirements for business owners to inform Ontarians about the use and creation of reportable substances in their communities. Under the Toxics Reduction Act (TRA), companies are required to develop reduction plans for this group of reportable substances.

Petroleum refineries process crude oil to manufacture finished products that are used and valued by our society such as gasoline and heating oil. Crude oil may contain varying quantities of the substances covered under the TRA. Through the tightly controlled multi-step refinery operation, a variety of substances are used, created and destroyed within contained piping and vessels. Finished products are regulated for both content (sulphur levels, for example) and use (pollution controls and higher mileage vehicles). In addition, Imperial Oil has comprehensive programs in place at all of its facilities to reduce waste, to prevent spills and leaks, to reduce fugitive emissions, and to train personnel on the environmental sensitivities of their role.

The following summary of the reduction plans has been prepared in accordance with Section 8 of the TRA and the requirements of Section 24 of Ontario Regulation 455/09, as amended from time to time.

# Plan Summary Preview

## Company Details

Company Legal Name:

Imperial Oil

Company Address:

237 4th Avenue Southwest, Calgary (Alberta)

## Report Details

Facility:

Sarnia Refinery Plant

Facility Address:

602 Christina Street South, Sarnia (Ontario)

Update Comments:

## Activities

### Select the Facility Contacts

#### Contacts

Public Contact:*

Jon Harding

Highest Ranking Employee:

Brian Fairley

Person responsible for Toxic Substance Reduction Plan preparation:

Charles Mortley-Wood

### Organization Validation

#### Company and Parent Company Information

##### Company Details

Company Legal Name:* Imperial Oil

Company Trade Name:* Imperial Oil

Business Number:* 121461107

### Mailing Address

Delivery Mode: Post Office Box

PO Box or Rural Route Number: 2480, Sation M

Address Line 1: 237 4th Avenue Southwest

City: Calgary

Province/Territory: Alberta

Postal Code: T2P3M9

### Physical Address

Address Line 1: 237 4th Avenue Southwest

City: Calgary

Province/Territory: Alberta

Postal Code: T2P3M9

Additional Information:

Land Survey Description:

National Topographical Description:

### Parent Companies

## Facility Validation

### Facility Information

Facility:* Sarnia Refinery Plant

NAICS Id:* 324110

NPRI Id:* 3704

ON Reg 127/01 Id:

### Mailing Address

Delivery Mode: Post Office Box

| | |
|---|---|
| PO Box or Rural Route Number: | 3004 |
| Address Line 1: | 602 Christina Street South |
| City: | Sarnia |
| Province/Territory: | Ontario |
| Postal Code: | N7T7M5 |

### Physical Address

| | |
|---|---|
| Address Line 1: | 602 Christina Street South |
| City: | Sarnia |
| Province/Territory: | Ontario |
| Postal Code: | N7T7M5 |
| UTM Zone: | 17 |
| UTM Easting: | 385773.59 |
| UTM Northing: | 4756731.82 |
| Latitude: | 42.95420 |
| Longitude: | -82.41580 |
| Additional Information: | |
| Land Survey Description: | |
| National Topographical Description: | |

## Contact Validation

### Contacts

#### Public Contact:

| | |
|---|---|
| First Name:* | Jon |
| Last Name:* | Harding |
| Position:* | Public Contact |

| | |
|---|---|
| Telephone:* | 5193394015 |
| Ext: | |
| Fax: | 5193394491 |
| Email:* | jon.s.harding@esso.ca |

### Mailing Address

| | |
|---|---|
| Delivery Mode: | Post Office Box |
| PO Box or Rural Route Number: | 3004 |
| Address Line 1: | 602 Christina Street South |
| City: | Sarnia |
| Province/Territory: | Ontario |
| Postal Code: | N7T7M5 |

## Highest Ranking Employee:

| | |
|---|---|
| First Name:* | Brian |
| Last Name:* | Fairley |
| Position:* | Refinery Manager |
| Telephone:* | 5193392401 |
| Ext: | |
| Fax: | |
| Email:* | brian.m.fairley@esso.ca |

### Mailing Address

| | |
|---|---|
| Delivery Mode: | |
| PO Box or Rural Route Number: | |
| Address Line 1: | 602 Christina Street |
| City: | Sarnia |

Province/Territory: Ontario

Postal Code: N7T 7M5

### Person responsible for the Toxic Substance Reduction Plan preparation:

First Name:* Charles

Last Name:* Mortley-Wood

Position:* Technical Leader

Telephone:* 5193392529

Ext:

Fax:

Email:* cmortley-wood@esso.ca

#### Mailing Address

Delivery Mode: General Delivery

PO Box or Rural Route Number: 3004

Address Line 1: 602 Christina St South Street South

City: Sarnia

Province/Territory: Ontario

Postal Code: N7T7M5

## Employees

### Employees

Number of Full-time Employees:*

392

## Substances

### 108-88-3, Toluene

108-88-3, Toluene

#### Substances Section Data

## Statement of Intent

### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Toluene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Toluene from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Toluene is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing Toluene from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil does not intend to reduce the use or creation of Toluene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Toluene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | Quantity | Unit |
|---|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | Quantity | Unit |
|---|---|---|
| ☒ No quantity target or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For sale/distribution

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing Toluene from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing Toluene from crude oil to be used in other commercial and industrial applications.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing Toluene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Toluene at Imperial Oil’s Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Toluene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

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

1330-20-7, Xylene (all isomers)

# Substances Section Data

## Statement of Intent

### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Xylene (all isomers) is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Xylene (all isomers) is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of Xylene (all isomers) at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Xylene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For sale/distribution

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing Xylene (all isomers) from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Xylene (all isomers) at Imperial Oil’s Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Xylene (all isomers) in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

# 50-00-0, Formaldehyde

50-00-0, Formaldehyde

## Substances Section Data

### Statement of Intent

#### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Formaldehyde was not detected in any streams used at the facility, nor was it detected in any measureable amounts in any streams in the refinery.

#### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Formaldehyde was not detected in any streams used at the facility, nor was it detected in any measureable amounts in any streams in the refinery.

### Objectives, Targets and Description

#### Objectives

Objectives in plan:*

Formaldehyde concentrations in the refinery feedstock are below the laboratory detection limit. As the amounts of Formaldehyde used and created at the facility are zero, no reduction objectives have been identified.

#### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | Quantity | Unit |
|---|---|---|---|
| ☒ | No quantity target or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

This substance is not used at the facility

Summarize why the toxic substance is used at the facility:**

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

As Formaldehyde was not detected in any of the refinery feedstock or products onsite, no options were identified that would be expected to reduce the use or creation of Formaldehyde at the facility.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 67-56-1, Methanol

67-56-1, Methanol

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Methanol is currently used at the Sarnia Refinery as an antifreeze.

Methanol is used by the facility as an antifreeze in the process as it is compatible with hydrocarbon processing and offers superior freeze protection over other antifreeze.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Methanol is created at the facility as a byproduct from the production of Hydrogen.

Methanol is used by the facility as an antifreeze in the process as it is compatible with hydrocarbon processing and offers superior freeze protection over other antifreeze.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Methanol enters the facility as an additive and is destroyed in hydrocarbon processing. Methanol is also created as a by-product in the production of hydrogen which is necessary for many refinery processes. No options to reduce the use or creation of Methanol were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a physical or chemical processing aid

Summarize why the toxic substance is used at the facility:**

Methanol is used by the facility as an antifreeze in the process as it is compatible with hydrocarbon processing and offers superior freeze protection over other antifreeze.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

Methanol is created at the facility as a byproduct from the production of Hydrogen.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible reduction options were identified that would be expected to reduce the use or creation of Methanol at Imperial Oil's Sarnia Refinery. Therefore, Imperial Oil does not intend to implement any options to reduce the amount of Methanol currently used at Sarnia Refinery.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 71-43-2, Benzene

71-43-2, Benzene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

benzene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing benzene from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

benzene is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing benzene from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of benzene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of benzene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For sale/distribution

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing benzene from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing benzene from crude oil to be used in other commercial and industrial applications.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing benzene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of benzene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of benzene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 194-59-2, 7H-Dibenzo(c,g)carbazole

194-59-2, 7H-Dibenzo(c,g)carbazole

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

7H-Dibenzo(c,g)carbazole is currently used at the facility and enters the refinery in purchased feed.
7H-Dibenzo(c,g)carbazole used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

7H-Dibenzo(c,g)carbazole is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The 7H-Dibenzo(c,g)carbazole created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

7H-Dibenzo(c,g)carbazole enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of 7H-Dibenzo(c,g)carbazole were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

7H-Dibenzo(c,g)carbazole used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The 7H-Dibenzo(c,g)carbazole created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of 7H-Dibenzo(c,g)carbazole at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of 7H-Dibenzo(c,g)carbazole at the Sarnia Refinery.

7H-Dibenzo(c,g)carbazole used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The 7H-Dibenzo(c,g)carbazole created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## NA - 12, Selenium (and its compounds)

NA - 12, Selenium (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Selenium (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Selenium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Selenium (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Selenium (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Selenium (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Selenium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Selenium (and its compounds) at the facility. Selenium (and its compounds) is not created at the facility.

Selenium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## NA - 08, Lead (and its compounds)

NA - 08, Lead (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Lead (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Lead (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Lead (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Lead (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Lead (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | Quantity | Unit |
|---|---|---|---|
| ☒ | No quantity target or | | |

What is the targeted timeframe for this reduction?*

| | | | |
|---|---|---|---|
| ☒ | No timeline target or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Lead (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Lead (and its compounds) at the facility. Lead (and its compounds) is not created at the facility.

Lead (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 129-00-0, Pyrene

129-00-0, Pyrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Pyrene is currently used at the facility and enters the refinery in purchased feed.

Pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Pyrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Pyrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| Quantity | Unit |
|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Pyrene at the Sarnia Refinery.

Pyrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Pyrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 83-32-9, Acenaphthene

83-32-9, Acenaphthene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Acenaphthene is currently used at the facility and enters the refinery in purchased feed.

Acenaphthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Acenaphthene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Acenaphthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Acenaphthene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Acenaphthene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| Quantity | Unit |
|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Acenaphthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Acenaphthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Acenaphthene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Acenaphthene at the Sarnia Refinery.

Acenaphthene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Acenaphthene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 208-96-8, Acenaphthylene

208-96-8, Acenaphthylene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Acenaphthylene is currently used at the facility and enters the refinery in purchased feed.

Acenaphthylene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Acenaphthylene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Acenaphthylene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Acenaphthylene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| Quantity | Unit |
|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Acenaphthylene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Acenaphthylene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Acenaphthylene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Acenaphthylene at the Sarnia Refinery.

Acenaphthylene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Acenaphthylene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 120-12-7, Anthracene

120-12-7, Anthracene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Anthracene is currently used at the facility and enters the refinery in purchased feed.

Anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Anthracene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Anthracene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Anthracene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Anthracene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | Quantity | Unit |
|---|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Anthracene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Anthracene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Anthracene at the Sarnia Refinery.

Anthracene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Anthracene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 1332-21-4, Asbestos (friable form only)

1332-21-4, Asbestos (friable form only)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Asbestos (friable form only) is currently used at the facility only from historical installation. No new Asbestos (friable form only) enters the refinery.

Sarnia refinery will continue to eliminate Asbestos (friable form only) from the site and as a result it will continue to appear as a waste product from the refinery until such time as it is no longer present in the refinery.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Asbestos (friable form only) is not created at the facility.

Sarnia refinery will continue to eliminate Asbestos (friable form only) from the site and as a result it will continue to appear as a waste product from the refinery until such time as it is no longer present in the refinery.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

There are no new uses of Asbestos (friable form only) and the refinery does not create Asbestos (friable form only).

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

This substance is not used at the facility

Summarize why the toxic substance is used at the facility:**

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified to reduce the use or creation of Asbestos (friable form only) at Imperial Oil’s Sarnia refinery. Current presence of Asbestos (friable form only) at Sarnia Refinery is from historical installation and the substance is not created by the facility.

### Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 56-55-3, Benzo(a)anthracene

56-55-3, Benzo(a)anthracene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(a)anthracene is currently used at the facility and enters the refinery in purchased feed.

Benzo(a)anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(a)anthracene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(a)anthracene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(a)anthracene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Benzo(a)anthracene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(a)anthracene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(a)anthracene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(a)anthracene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(a)anthracene at the Sarnia Refinery.

Benzo(a)anthracene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(a)anthracene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 218-01-9, Benzo(a)phenanthrene

218-01-9, Benzo(a)phenanthrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use

of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(a)phenanthrene is currently used at the facility and enters the refinery in purchased feed.

Benzo(a)phenanthrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(a)phenanthrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(a)phenanthrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(a)phenanthrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Benzo(a)phenanthrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(a)phenanthrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery's products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(a)phenanthrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered "No" to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered "Yes" please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(a)phenanthrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(a)phenanthrene at the Sarnia Refinery.

Benzo(a)phenanthrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(a)phenanthrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 50-32-8, Benzo(a)pyrene

50-32-8, Benzo(a)pyrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(a)pyrene is currently used at the facility and enters the refinery in purchased feed.

Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(a)pyrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(a)pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Benzo(a)pyrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(a)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(a)pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(a)pyrene at the Sarnia Refinery.

Benzo(a)pyrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(a)pyrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 205-99-2, Benzo(b)fluoranthene

205-99-2, Benzo(b)fluoranthene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(b/j)fluoranthene is currently used at the facility and enters the refinery in purchased feed.

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(b/j)fluoranthene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(b/j)fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(b/j)fluoranthene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Benzo(b/j)fluoranthene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

### What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

### What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(b/j)fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(b/j)fluoranthene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(b/j)fluoranthene at the Sarnia Refinery.

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(b/j)fluoranthene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 192-97-2, Benzo(e)pyrene

192-97-2, Benzo(e)pyrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use

of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(e)pyrene is currently used at the facility and enters the refinery in purchased feed.

Benzo(e)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(e)pyrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(e)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(e)pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Benzo(e)pyrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(e)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(e)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(e)pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(e)pyrene at the Sarnia Refinery.

Benzo(e)pyrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(e)pyrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 191-24-2, Benzo(g,h,i)perylene

191-24-2, Benzo(g,h,i)perylene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(g,h,i)perylene is currently used at the facility and enters the refinery in purchased feed.

Benzo(g,h,i)perylene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(g,h,i)perylene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(g,h,i)perylene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(g,h,i)perylene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Benzo(g,h,i)perylene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

### What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

### What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(g,h,i)perylene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(g,h,i)perylene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(g,h,i)perylene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(g,h,i)perylene at the Sarnia Refinery.

Benzo(g,h,i)perylene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(g,h,i)perylene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 205-82-3, Benzo(j)fluoranthene

205-82-3, Benzo(j)fluoranthene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Benzo(b/j)fluoranthene is currently used at the facility and enters the refinery in purchased feed.

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Benzo(b/j)fluoranthene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Benzo(b/j)fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Benzo(b/j)fluoranthene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Benzo(b/j)fluoranthene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Benzo(b/j)fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Benzo(b/j)fluoranthene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Benzo(b/j)fluoranthene at the Sarnia Refinery.

Benzo(b/j)fluoranthene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Benzo(b/j)fluoranthene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 92-52-4, Biphenyl

92-52-4, Biphenyl

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Biphenyl is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Biphenyl from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Biphenyl is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing Biphenyl from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of Biphenyl at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Biphenyl in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For sale/distribution

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing Biphenyl from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing Biphenyl from crude oil to be used in other commercial and industrial applications.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing Biphenyl from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Biphenyl at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Biphenyl in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 106-99-0, 1,3-Butadiene

106-99-0, 1,3-Butadiene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

1, 3-Butadiene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

1, 3-Butadiene is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of 1, 3-Butadiene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of 1, 3-Butadiene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For on-site use/processing

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing 1, 3-Butadiene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of 1, 3-Butadiene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of 1, 3-Butadiene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## NA - 03, Cadmium (and its compounds)

NA - 03, Cadmium (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Cadmium (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Cadmium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Cadmium (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Cadmium (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Cadmium (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Cadmium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Cadmium (and its compounds) at the facility. Cadmium (and its compounds) is not created at the facility.

Cadmium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 189-55-9, Dibenzo(a,i)pyrene

189-55-9, Dibenzo(a,i)pyrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Dibenzo(a,i)pyrene is currently used at the facility and enters the refinery in purchased feed.

Dibenzo(a,i)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Dibenzo(a,i)pyrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Dibenzo(a,i)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Dibenzo(a,i)pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Dibenzo(a,i)pyrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Dibenzo(a,i)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Dibenzo(a,i)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Dibenzo(a,i)pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Dibenzo(a,i)pyrene at the Sarnia Refinery.

Dibenzo(a,i)pyrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Dibenzo(a,i)pyrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 224-42-0, Dibenzo(a,j)acridine

224-42-0, Dibenzo(a,j)acridine

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Dibenzo(a,j)acridine is currently used at the facility and enters the refinery in purchased feed.

Dibenzo(a,j)acridine used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Dibenzo(a,j)acridine is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Dibenzo(a,j)acridine created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Dibenzo(a,j)acridine enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Dibenzo(a,j)acridine were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Dibenzo(a,j)acridine used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Dibenzo(a,j)acridine created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Dibenzo(a,j)acridine at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Dibenzo(a,j)acridine at the Sarnia Refinery.

Dibenzo(a,j)acridine used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Dibenzo(a,j)acridine created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 100-41-4, Ethylbenzene

100-41-4, Ethylbenzene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Ethylbenzene is currently used at the facility and enters the refinery in various feedstock including crude oil.

Sarnia refinery is in the business of extracting and producing Ethylbenzene from crude oil to be used in other commercial and industrial applications.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Ethylbenzene is created at the facility in the conversion units through both cracking and reforming processes.

Sarnia refinery is in the business of extracting and producing Ethylbenzene from crude oil to be used in other commercial and industrial applications.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

While Imperial Oil has not identified any feasible options to reduce the use or creation of Ethylbenzene at the Sarnia refinery, various projects at Sarnia refinery are expected to reduce fugitive emissions of Ethylbenzene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

For sale/distribution

Summarize why the toxic substance is used at the facility:**

Sarnia refinery is in the business of extracting and producing Ethylbenzene from crude oil to be used in other commercial and industrial applications.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

For sale/distribution

Summarize why the toxic substance is created at the facility:**

Sarnia refinery is in the business of extracting and producing Ethylbenzene from crude oil to be used in other commercial and industrial applications.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery is in the business of producing Ethylbenzene from crude oil to be used in other commercial and industrial applications. No reduction options were identified to reduce the use or creation of Ethylbenzene at Imperial Oil's Sarnia refinery.

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Ethylbenzene in the coming years. These projects include but are not limited to tank upgrades and improvements to the fugitive emission monitoring program.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 206-44-0, Fluoranthene

206-44-0, Fluoranthene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Fluoranthene is currently used at the facility and enters the refinery in purchased feed.

Fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Fluoranthene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Fluoranthene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Fluoranthene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

### What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

### What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Fluoranthene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Fluoranthene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Fluoranthene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Fluoranthene at the Sarnia Refinery.

Fluoranthene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Fluoranthene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 86-73-7, Fluorene

86-73-7, Fluorene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Fluorene is currently used at the facility and enters the refinery in purchased feed.

Fluorene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Fluorene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Fluorene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Fluorene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Fluorene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Fluorene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Fluorene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Fluorene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Fluorene at the Sarnia Refinery.

Fluorene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Fluorene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 193-39-5, Indeno(1,2,3-c,d)pyrene

193-39-5, Indeno(1,2,3-c,d)pyrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Indeno(1,2,3-c,d)pyrene is currently used at the facility and enters the refinery in purchased feed.

Indeno(1,2,3-c,d)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Indeno(1,2,3-c,d)pyrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Indeno(1,2,3-c,d)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Indeno(1,2,3-c,d)pyrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking. No options to reduce the use or creation of Indeno(1,2,3-c,d)pyrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Indeno(1,2,3-c,d)pyrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Indeno(1,2,3-c,d)pyrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Indeno(1,2,3-c,d)pyrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Indeno(1,2,3-c,d)pyrene at the Sarnia Refinery.

Indeno(1,2,3-c,d)pyrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Indeno(1,2,3-c,d)pyrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## NA - 10, Mercury (and its compounds)

NA - 10, Mercury (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Mercury (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Mercury (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Mercury (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Mercury (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Mercury (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Mercury (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Mercury (and its compounds) at the facility. Mercury (and its compounds) is not created at the facility.

Mercury (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 91-20-3, Naphthalene

91-20-3, Naphthalene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Naphthalene is currently used at the facility and enters the refinery in purchased feed.

Naphthalene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Naphthalene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Naphthalene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Naphthalene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Naphthalene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

### What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

### What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Naphthalene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Naphthalene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Naphthalene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Naphthalene at the Sarnia Refinery.

Naphthalene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Naphthalene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## NA - 11, Nickel (and its compounds)

NA - 11, Nickel (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Nickel (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Nickel (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Nickel (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Nickel (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Nickel (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Nickel (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Nickel (and its compounds) at the facility. Nickel (and its compounds) is not created at the facility.

Nickel (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 85-01-8, Phenanthrene

85-01-8, Phenanthrene

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Phenanthrene is currently used at the facility and enters the refinery in purchased feed.

Phenanthrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Phenanthrene is created at the facility in the conversion units where thermal cracking occurs like the fluid catalytic cracking unit and the coker reactor.

The Phenanthrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Phenanthrene enters the facility in purchased feedstock, and is created as a byproduct from thermal cracking.  No options to reduce the use or creation of Phenanthrene were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | | Unit |
|---|---|---|---|---|---|
| ☒ | No quantity target | or | | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a by-product

Summarize why the toxic substance is used at the facility:**

Phenanthrene used at the facility is a component of the purchased feedstock that is required to meet market and contractual demands for the refinery’s products.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

The Phenanthrene created onsite is a byproduct of the complex chemical reactions occurring during thermal cracking, and its creation is minimized.

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No reduction options were identified that are expected to reduce the use or creation of Phenanthrene at Imperial Oil's Sarnia refinery. As such, Imperial Oil does not intend to implement any options to reduce the use or creation of Phenanthrene at the Sarnia Refinery.

Phenanthrene used at the facility is a component of the purchased feedstock that is required by the facility to meet market and contractual demands for the refinery's products. The Phenanthrene created at the facility is minimized.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 108-95-2, Phenol (and its salts)

108-95-2, Phenol (and its salts)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If 'yes', exact statement of the intent that is included in the facility's TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Phenol (and its salts) is no longer used in the production of lubricants on site. Currently, only trace amounts Phenol (and its salts) enter the refinery as a component in some finished product additives.

### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Phenol (and its salts) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Sarnia Refinery has already eliminated the primary use of Phenol (and its salts) and does not create any Phenol (and its salts).

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | Quantity | Unit |
|---|---|---|

☒ No quantity target or

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

## Reasons for Use

Why is the toxic substance used at the facility?:*

As a physical or chemical processing aid

Summarize why the toxic substance is used at the facility:**

Phenol (and its salts) is no longer used in the production of lubricants on site. Currently, only trace amounts Phenol (and its salts) enter the refinery as a component in some finished product additives.

## Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

# Toxic Reduction Options for Implementation

## Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

Sarnia refinery has already eliminated the primary use of Phenol (and its salts).

Phenol (and its salts) used onsite is found in additives of finished product produced by the facility.

## Materials or feedstock substitution

## Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 7664-93-9, Sulphuric acid

7664-93-9, Sulphuric acid

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Sulphuric acid is not used at the Sarnia Refinery.

##### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of

the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Sulphuric acid is created at the facility primarily through combustion processes where sulphur is present. The combustion of coke from the fluid catalytic cracking unit and the coker are the primary sources of Sulphuric acid created in the refinery.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Various projects at Sarnia refinery are expected to reduce fugitive emissions of Sulphuric acid in the coming years. These projects are being evaluated in support of environmental emissions objectives not directly related to Toxic Substance Reductions. Sarnia Refinery does not use Sulphuric acid and no economically feasible options to reduce Sulphuric acid creation were identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

☒ No timeline target or years

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

This substance is not used at the facility

Summarize why the toxic substance is used at the facility:**

### Reasons for Creation

Why is the toxic substance created at the facility?:*

As a by-product

Summarize why the toxic substance is created at the facility:**

Sulphuric acid is created at the facility primarily through combustion processes where sulphur is present.

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the creation of Sulphuric acid at the facility. Sulphuric acid is not used at the facility.

### Materials or feedstock substitution

### Product design or reformulation

### Equipment or process modifications

### Spill or leak prevention

### On-site reuse, recycling or recovery

### Improved inventory management or purchasing techniques

### Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 7440-62-2, Vanadium (and its compounds)

7440-62-2, Vanadium (and its compounds)

### Substances Section Data

#### Statement of Intent

##### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Vanadium (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.

Vanadium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

##### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If 'no', reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Vanadium (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Vanadium (and its compounds) is also found in trace quantities in the purchased feed. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As an impurity

Summarize why the toxic substance is used at the facility:**

Vanadium (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Vanadium (and its compounds) at the facility. Vanadium (and its compounds) is not created at the facility.

Vanadium (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business.

### Materials or feedstock substitution

### Product design or reformulation

### Equipment or process modifications

### Spill or leak prevention

### On-site reuse, recycling or recovery

### Improved inventory management or purchasing techniques

### Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the

toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

# NA - 14,  Zinc (and its compounds)

NA - 14,  Zinc (and its compounds)

## Substances Section Data

### Statement of Intent

#### Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:**

Zinc (and its compounds) is currently used at the facility and enters the refinery in small amounts with the crude oil and purchased feed stocks.  Additionally Zinc (and its compounds) enters the site as a finished product blending additive used at the Lubes Marketing Blending Packaging and Shipping (BP&S) facilities.

Zinc (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business.  The Zinc containing additive used at BP&S is required to ensure finished product specifications are achieved, and no acceptable commercial alternatives were identified.

#### Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic

substance at the facility:**

Zinc (and its compounds) is not created at the facility.

## Objectives, Targets and Description

### Objectives

Objectives in plan:*

Zinc (and its compounds) is naturally occurring in trace quantities in the crude oil required by the refinery to run its base business. Zinc (and its compounds) is also found in trace quantities in the purchased feed. Additionally, the Zinc (and its compounds) used at BP&S is required to achieve finished product quality specifications. No reduction objectives have been identified.

### Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

| | | | Quantity | Unit |
|---|---|---|---|---|
| ☒ | No quantity target | or | | |

What is the targeted timeframe for this reduction?*

| | | | | |
|---|---|---|---|---|
| ☒ | No timeline target | or | | years |

Description of targets:

### Reasons for Use

Why is the toxic substance used at the facility?:*

As a formulation component

Summarize why the toxic substance is used at the facility:**

Zinc (and its compounds) is naturally occurring in trace quantities in crude oil and other refinery feedstock, which are required by the refinery to run its base business. Additionally a Zinc containing additive is used at BP&S to ensure finished product specifications are achieved.

### Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

## Toxic Reduction Options for Implementation

### Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.
Explanation of the reasons why no option will be implemented:**

No technically and economically feasible options were identified that would be expected to reduce the use of Zinc (and its compounds) at the facility. Zinc (and its compounds) is not created at the facility.

Zinc (and its compounds) is naturally occurring in trace quantities in the crude oil that is required by the refinery to run its base business. The Zinc containing additive used at BP&S is required to ensure finished product specifications are achieved, and no acceptable commercial alternatives were identified.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques

Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0071

What version of the plan is this summary based on?:*

New Plan

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 106-99-0 1, 3-Butadiene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 106-99-0 1, 3-Butadiene

Scott Manser
Toxic Substance Reduction Planner

TSRP 6071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 92-52-4 Biphenyl

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 92-52-4 Biphenyl

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 71-43-2 Benzene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 71-43-2 Benzene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 100-41-4 Ethylbenzene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 100-41-4 Ethylbenzene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 108-88-3 Toluene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 108-88-3 Toluene

Scott Manser
Toxic Substance Reduction Planner

TSRP 0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 1330-20-7 Xylene (all isomers)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 1330-20-7 Xylene (all isomers)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Cadmium (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Cadmium (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP 0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 2012/14/12 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Lead (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Lead (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Mercury (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Mercury (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Nickel (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Nickel (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 2012/14/12 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Selenium (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Selenium (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 7440-62-2 Vanadium (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 7440-62-2 Vanadium (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- N/A Zinc (and its compounds)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- N/A Zinc (and its compounds)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- **67-56-1, Methanol**

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- **67-56-1, Methanol**

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

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*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 1332-21-4 Asbestos (friable form only)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 1332-21-4 Asbestos (friable form only)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 108-95-2 Phenol (and its salts)

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 108-95-2 Phenol (and its salts)

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 50-00-0 Formaldehyde

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 50-00-0 Formaldehyde

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 7664-93-9, Sulphuric Acid

Brian Fairley
Refinery Manager, Sarnia Refinery

2012/14/12
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 7664-93-9, Sulphuric Acid

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/12 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 194-59-2 7H-Dibenzo(c,g)carbazole

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/12
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 194-59-2 7H-Dibenzo(c,g)carbazole

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 83-32-9 Acenaphthene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 83-32-9 Acenaphthene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 208-96-8 Acenaphthylene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 208-96-8 Acenaphthylene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 120-12-7 Anthracene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 120-12-7 Anthracene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 56-55-3 Benzo(a)anthracene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 56-55-3 Benzo(a)anthracene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 218-01-9 Benzo(a)phenanthrene

Brian Fairley — 12/14/2012 (Date)
Refinery Manager, Sarnia Refinery

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 218-01-9 Benzo(a)phenanthrene

Scott Manser — TSRP6071 (License Number) — 12/11/2012 (Date)
Toxic Substance Reduction Planner

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 50-32-8 Benzo(a)pyrene

Brian Fairley — 12/14/2012 (Date)
Refinery Manager, Sarnia Refinery

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 50-32-8 Benzo(a)pyrene

Scott Manser — TSRP0071 (License Number) — 12/11/2012 (Date)
Toxic Substance Reduction Planner

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 205-99-2 / 205-82-3 Benzo(b/j)fluoranthene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 205-99-2 / 205-82-3 Benzo(b/j)fluoranthene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 192-97-2 Benzo(e)pyrene

Brian Fairley — 12/14/2012 (Date)
Brian Fairley
Refinery Manager, Sarnia Refinery

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 192-97-2 Benzo(e)pyrene

Scott Manser — TSRP0071 (License Number) — 12/11/2012 (Date)
Scott Manser
Toxic Substance Reduction Planner

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 2012/14/12 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 191-24-2 Benzo(g,h,i)perylene

Brian Fairley
Refinery Manager, Sarnia Refinery

2012/14/12
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 191-24-2 Benzo(g,h,i)perylene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

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*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 224-42-0 Dibenzo(a,j)acridine

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 224-42-0 Dibenzo(a,j)acridine

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

## 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 189-55-9 Dibenzo(a,i)pyrene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 189-55-9 Dibenzo(a,i)pyrene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 206-44-0 Fluoranthene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 206-44-0 Fluoranthene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 86-73-7 Fluorene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 86-73-7 Fluorene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 193-39-5 Indeno(1,2,3-c,d)pyrene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 193-39-5 Indeno(1,2,3-c,d)pyrene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 91-20-3 Naphthalene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 91-20-3 Naphthalene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 85-01-8 Phenanthrene

Brian Fairley
Refinery Manager, Sarnia Refinery

12/14/2012
Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 85-01-8 Phenanthrene

Scott Manser
Toxic Substance Reduction Planner

TSRP0071
License Number

12/11/2012
Date

# 9. TOXIC REDUCTION PLAN CERTIFICATION

*Highest Ranking Employee*

As of 12/14/2012 (Date), I, Brian Fairley, 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 complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- 129-00-0 Pyrene

Brian Fairley — 12/14/2012

Brian Fairley
Refinery Manager, Sarnia Refinery

Date

*Toxic Substance Reduction Planner*

As of 12/11/2012 (Date), I, Scott Manser (Planner Name) certify that I am familiar with the processes at Imperial Oil's Sarnia Refinery that use or create the toxic substances 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 12/11/2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

- 129-00-0 Pyrene

Scott Manser — TSRP0071 — 12/11/2012

Scott Manser
Toxic Substance Reduction Planner

License Number

Date