



2011 TOXICS REDUCTION ACT

Toxic Substance Reduction Plan Summaries

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
L5J 2Y3

December 3, 2012





Version Control

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1.0 INTRODUCTION

Petro-Canada Lubricants Inc. (PCLI), a Suncor Energy business, is a global supplier of products ranging from automobile lubricants to white oils for the pharmaceutical market. Finished goods are shipped nationally and internationally to customers familiar with our growing reputation for high quality, environment-friendly fluids.

Located at 385 Southdown Road, the Lubricants Centre is situated on the shore of Lake Ontario beside a residential community in Mississauga, Ontario. Like our residential neighbours, we want a clean and safe environment, and a prosperous lifestyle.

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

We respect the important balance between economic growth and environmental stewardship and work diligently to:

- Conduct our activities with sound environmental management and conservation practices;
- Prevent risk to community health and safety from our operations or our products; and
- Transfer expertise in environmental protection to host communities.

In keeping with our commitment to meet the latest quality standards and practices, PCLI is ISO 14001 registered.

As part of our environmental stewardship, PCLI will:

- Demonstrate our commitment by maintaining our ISO 9001, ISO 14001 and ISO/TS 16949 registrations;
- Ensure our operations comply with customer requirements, specific performance standards, government legislation, corporate policy and applicable industry standards;
- Monitor the environmental impacts of our business during the start-up, normal operation and shutdown of our facilities, and through project planning, implementation and decommissioning to minimize any impact on the environment;
- Ensure all employees and affiliates are informed, trained and authorized to meet our quality and environmental performance requirements;
- Continually improve our products through design, manufacturing, delivery and service processes, achieved through our Quality and Environmental Management Systems utilizing Total Loss Management philosophies; and
- Continue to strive to establish quality and environmental objectives and targets, and periodically review performance through the Management Review Process.

To learn more about our business please visit our website at <http://lubricants.petro-canada.ca/default.aspx>.

These toxics substance reduction plan summaries have been prepared to meet the regulatory obligations specified in Section 8 of the Act and has been prepared in accordance with the requirements of s. 24 of Ontario Regulation (O. Reg.) 455/09, as amended from time to time. It



meets the relevant reporting requirements and will be updated, as required by the Act and O. Reg. 455/09.

For more information on the Toxics Reduction Act and O. Reg. 455/09 visit: http://www.ene.gov.on.ca/environment/en/legislation/toxics_reduction_act/index.htm.

1.1 Toxic Substances

Toxic substance reduction plan summaries have been developed for the following substances and are provided in the appendices:

- Asbestos, CAS No. 1332-21-4
- Benzene, CAS No. 71-43-2
- Biphenyl, CAS No. 92-52-4
- Ethylbenzene, CAS No. 100-41-4
- Methanol, CAS No. 67-56-1
- Naphthalene, CAS No. 91-20-3
- Nickel, CAS No. NA-11
- Sulphuric acid, CAS No. 7664-93-9
- Toluene, CAS No. 108-88-3
- Xylene, CAS No. 1330-20-7
- Zinc, CAS No. NA-14



2.0 GENERAL FACILITY INFORMATION

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

Table 1: General Facility Information

Reporting Requirement	Facility Information	Reference to Act and/or O. Reg. 455/09
Parent Company Name	Suncor Energy Inc.	O. Reg. 455/09 s.18(2) subparagraph 14
Parent Company Address	150 6 th Avenue Southwest Calgary, Alberta T2P 3E3	O. Reg. 455/09 s.18(2) subparagraph 14
Facility Name	Mississauga Lubricants Centre	O. Reg. 455/09 s.18(2) subparagraph 4
Facility Address	385 Southdown Road Mississauga, Ontario L5J 2Y3	O. Reg. 455/09 s.18(2) subparagraph 4
Universal Transverse Mercator (UTM) in North American Datum (NAD83)	X [m] 612417.51 Y [m] 4817383.76	O. Reg. 455/09 s.18(2) subparagraph 13
National Pollutant Release Inventory Identification Number	3899	O. Reg. 455/09 s.18(2) subparagraph 2
Ontario Regulation 127/01 Identification Number	5119	O. Reg. 455/09 s.18(2) subparagraph 3
Two Digit North American Industry Classification System (NAICS) Code	32 – Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Four Digit North American Industry Classification System (NAICS) Code	3241 – Petroleum and Coal Product Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Six Digit North American Industry Classification System (NAICS) Code	324190 – Other Petroleum and Coal Product Manufacturing CAN	O. Reg. 455/09 s.18(2) subparagraph 6
Number of Full-time Employee Equivalents at the Facility	397 (as of December 31, 2011)	O. Reg. 455/09 s.18(2) subparagraph 5
Facility Public Contact	Joel Thompson Manager, Corporate Communications 150 6 th Avenue Southwest Calgary, Alberta T2P 3E3 Tel: 403-296-6637 Email: jjthompson@suncor.com	O. Reg. 455/09 s.18(2) subparagraph 7



3.0 PLAN CERTIFICATION STATEMENT

Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Attachment 1: Copies of the Plan Certifications





Certification by Highest Ranking Employee

As of **December 10, 2012**, I, **Dean Wilcox**, certify that I have read the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the plans are factually accurate and comply with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance	Date of the Plan to which the Certification Applies
Asbestos, CAS No. 1332-21-4	December 3, 2012
Benzene, CAS No. 71-43-2	December 3, 2012
Biphenyl, CAS No. 92-52-4	December 3, 2012
Ethylbenzene, CAS No. 100-41-4	December 3, 2012
Methanol, CAS No. 67-56-1	December 3, 2012
Naphthalene, CAS No. 91-20-3	December 3, 2012
Nickel, CAS No. NA-11	December 3, 2012
Sulphuric acid, CAS No. 7664-93-9	December 3, 2012
Toluene, CAS No. 108-88-3	December 3, 2012
Xylene, CAS No. 1330-20-7	December 3, 2012
Zinc, CAS No. NA-14	December 3, 2012


Dean Wilcox

General Manager, Production and Logistics

2012/12/10.
Date





Certification by Licensed Planner

As of **December 4, 2012**, I, **Mark Roehler** certify that I am familiar with the processes at the Petro-Canada Lubricants Inc. Lubricants Centre 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 toxic substance reduction plans referred to below for the toxic substances and that the plans comply with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance	Date of the Plan to which the Certification Applies
Asbestos, CAS No. 1332-21-4	December 3, 2012
Benzene, CAS No. 71-43-2	December 3, 2012
Biphenyl, CAS No. 92-52-4	December 3, 2012
Ethylbenzene, CAS No. 100-41-4	December 3, 2012
Methanol, CAS No. 67-56-1	December 3, 2012
Naphthalene, CAS No. 91-20-3	December 3, 2012
Nickel, CAS No. NA-11	December 3, 2012
Sulphuric acid, CAS No. 7664-93-9	December 3, 2012
Toluene, CAS No. 108-88-3	December 3, 2012
Xylene, CAS No. 1330-20-7	December 3, 2012
Zinc, CAS No. NA-14	December 3, 2012

Mark Roehler

Mark Roehler
LEHDER Environmental Services Limited

Toxic Substance Reduction Planner
TSRP0128

December 4, 2012

Date





Appendix A: Toxics Substance Reduction Plan Summary for Asbestos





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Asbestos**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for asbestos.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09)

3.0 DESCRIPTION OF SUBSTANCE

The Lubricants Centre does not use or create asbestos in the manufacturing process; asbestos is contained in Lubricants Centre building materials.

To actively manage asbestos containing materials (ACM) at the Lubricants Centre, a cross-functional team was formed to develop and maintain compliance with the Lubricants Centre Asbestos Management Program (AMP), including safe work procedures and remediation planning. The team ensures regulatory compliance and drives the reduction of asbestos hazards on-site.

In recent years, the Lubricants Centre asbestos management team has gone beyond compliance, choosing to focus on removal of ACM rather than encapsulation. The common and significantly more economical method to control asbestos exposure is through encapsulation, which simply covers existing sources. Although effective for immediate mitigation, encapsulation is only a temporary mask with the ACM still being present underneath. The team at the Lubricants Centre believes removal to be a more effective path to ensure the reduction of potential health hazards for all on-site workers. As such, the team combines encapsulation with planned removal to control asbestos exposure.

Since the inception of the program in 1995, 325 tonnes of ACM have been removed from the site and disposed of accordingly.

4.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

The Lubricants Centre does not use or create asbestos and as such, reduction options will not be implemented. However, the Lubricants Centre will endeavour to remove the ACM from the facility in a manner that protects on-site workers and dispose of ACM in accordance with applicable legislation.



4.1 Statement of Intent

Although the Lubricants Centre meets the reporting criteria for asbestos and the releases are reported to the National Pollutant Release Inventory (NPRI), the Lubricants Centre does not use or create asbestos in the manufacturing process, nor is it contained in product. Asbestos is contained in the facility's building materials. This material is being removed as part of the Lubricants Centre AMP that focuses on the removal of asbestos from the facility, which in turn reduces the potential health hazards for all on-site workers.

4.2 Objective

The Lubricants Centre does not use or create asbestos in the manufacturing process. As such, the plan does not set objectives to reduce its use or creation; ACM is contained in the facility's building materials.

5.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for asbestos, prepared for the Lubricants Centre, dated December 3, 2012.

6.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix B: Toxics Substance Reduction Plan Summary for Benzene





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Benzene**

VERSION 1.0

Petro-Canada Lubricants Inc.
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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for benzene.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Benzene is a component of feedstocks and is contained in some final products. Benzene is also a by-product of incomplete fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of benzene associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Material and Feedstock Substitution

In response to past legislation, most additives containing volatile organic compounds have been removed from the formulations of manufactured greases and blended lubricants. No further material substitutions have been identified at this time; however, it is noted that PCLI's Research and Development group reviews the raw materials on a regular basis and when feasible, materials are substituted.

4.2 Equipment or Process Modification

In response to past legislation, the Lubricants Centre optimized a process more than 15 years ago limiting benzene pre-cursors, which significantly reduces the amount of benzene created.

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's publication (CCME) "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.3 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication *“Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993”*. When leaks are detected, the Maintenance department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.4 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.5 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.6 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.



The Lubricants Centre has a work instruction regarding the “Designated Substance Control Program for Benzene”, so that compliance with the “R.R.O. 1990, Regulation 839 Designated Substance – Benzene” can be demonstrated. The Regulation states that “*every precaution reasonable in the circumstances be taken to ensure that every worker exposed to benzene whose health is likely to be affected thereby is protected*”.

Employees and contractors undergo training on benzene, as follows:

A. Contractor Orientation (Contractors Only) – Contractors will receive training (Employee Orientation – Benzene Module) on benzene hazards if they are working in areas where benzene may be present.

B. Employee Orientation (New Hires, Students, Transfers) – Trainee’s will receive training on benzene hazards and respiratory protection.

C. Refresher Training (All Employees) – Safety talks and refresher training modules include information on the following: site-specific benzene sources, hazards, appropriate personal protective equipment, contacts for information, etc.

The following engineering controls have been implemented at the Lubricants Centre to reduce benzene exposure and in some cases, reduce benzene emissions to atmosphere:

- Closed-loop sampling points for routine sample collection;
- Tie-ins to flare line for enclosed venting of equipment and instruments;
- Fume hoods and local exhaust systems in the laboratories;
- Covered API separator at WWTP to reduce fugitive emissions;
- Exhaust fans to reduce emissions during tank cleaning; and
- Control rooms are under positive pressure with elevated HVAC intakes to protect the occupants in emergency situations.

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.



5.1 Statement of Intent

PCLI does not intend to reduce the use, creation or presence in products of benzene, as no technically or economically feasible options were identified at this time. Benzene use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, the Lubricants Centre will endeavour to reduce the use, creation and release of benzene in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for benzene, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix C: Toxics Substance Reduction Plan Summary for Biphenyl





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Biphenyl**

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for biphenyl.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Biphenyl is a component of feedstocks and is contained in some final products.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of biphenyl associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Equipment or Process Modification

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's (CCME) publication "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.2 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication "*Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993*". When leaks are detected, the Maintenance



department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.3 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.4 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.

Employees and contractors undergo training on benzene. Much of the training is transferrable to biphenyl, as benzene and biphenyl travel in the same process streams (refer to Section 4.6 of Appendix B).

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air, which could also reduce biphenyl releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.





5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use, creation or presence in products of biphenyl, as no technically or economically feasible options were identified at this time. Biphenyl use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of biphenyl in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for biphenyl, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix D: Toxics Substance Reduction Plan Summary for Ethylbenzene





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Ethylbenzene**

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for ethylbenzene.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Ethylbenzene is a component of feedstocks, additives and maintenance materials, and is contained in some final products. Ethylbenzene is also a by-product of incomplete fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of ethylbenzene associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Material and Feedstock Substitution

In response to past legislation, most additives containing volatile organic compounds have been removed from the formulations of manufactured greases and blended lubricants. No further material substitutions have been identified at this time; however, it is noted that PCLI's Research and Development group reviews the raw materials on a regular basis and when feasible, materials are substituted.

4.2 Equipment or Process Modification

In response to past legislation, the Lubricants Centre optimized a process more than 15 years ago limiting benzene pre-cursors (i.e., ethylbenzene).

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's (CCME) publication "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.3 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication *“Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993”*. When leaks are detected, the Maintenance department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.4 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.5 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.6 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.





Employees and contractors undergo training on benzene. Much of the training is transferrable to ethylbenzene, as benzene and ethylbenzene travel in the same process streams (refer to Section 4.6 of Appendix B).

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air, which could also reduce ethylbenzene releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use, creation or presence in products of ethylbenzene, as no technically or economically feasible options were identified at this time. Ethylbenzene use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of ethylbenzene in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for ethylbenzene, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix E: Toxics Substance Reduction Plan Summary for Methanol





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Methanol**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
L5J 2Y3

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for methanol.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Methanol is used as anti-freeze in facility processes.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use and release of methanol associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Spill and Leak Prevention

Methanol is purchased and stored off-site. When required, it is brought on-site for use in the facility processes, minimizing the potential for spills during storage.

4.2 Training or Improved Operating Practices

The facility has three procedures that specify how to use methanol in the process, which minimizes the use of methanol.

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.



5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use of methanol, as no technically or economically feasible options were identified at this time.

5.2 Objective

PCLI is committed to operating the business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use of methanol in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for methanol, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix F: Toxics Substance Reduction Plan Summary for Naphthalene





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Naphthalene**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
L5J 2Y3

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for naphthalene.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Naphthalene is a component of feedstocks and additives, and is contained in some final products. Naphthalene is also a by-product of incomplete fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of naphthalene associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Material and Feedstock Substitution

In response to past legislation, most additives containing volatile organic compounds have been removed from the formulations of manufactured greases and blended lubricants. No further material substitutions have been identified at this time; however, it is noted that PCLI's Research and Development group reviews the raw materials on a regular basis and when feasible, materials are substituted.

4.2 Equipment or Process Modification

In response to past legislation, the Lubricants Centre optimized a process more than 15 years ago limiting benzene pre-cursors (i.e., naphthalene).

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's publication (CCME) "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.3 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication *“Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993”*. When leaks are detected, the Maintenance department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.4 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.5 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.6 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.



Employees and contractors undergo training on benzene. Much of the training is transferrable to naphthalene, as benzene and naphthalene travel in the same process streams (refer to Section 4.6 of Appendix B).

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air, which could also reduce naphthalene releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use, creation or presence in products of naphthalene, as no technically or economically feasible options were identified at this time. Naphthalene use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of naphthalene in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for naphthalene, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.



Appendix G: Toxics Substance Reduction Plan Summary for Nickel





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Nickel**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
L5J 2Y3

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for nickel.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Nickel is present in catalyst. Nickel is also a by-product of fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use and release of nickel associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.2 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use of nickel, as no technically or economically feasible options were identified at this time.

5.2 Objective

PCLI is committed to operating the business in an environmentally responsible manner. The Lubricants Centre will continue to monitor the performance standards for catalyst and whenever feasible, will endeavour to reduce the use of nickel by using alternative catalysts containing less nickel without increasing the use of another toxic substance.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for nickel, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix H: Toxics Substance Reduction Plan Summary for Sulphuric Acid





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Sulphuric Acid**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for sulphuric acid.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Sulphuric acid is used as an additive in the cooling water system. Sulphuric acid is also a by-product of fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use and release of sulphuric acid associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.



5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use or creation of sulphuric acid, as no technically or economically feasible options were identified at this time.

5.2 Objective

PCLI is committed to operating the business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of sulphuric acid in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for sulphuric acid, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix I: Toxics Substance Reduction Plan Summary for Toluene





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Toluene**

VERSION 1.0

Petro-Canada Lubricants Inc.
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L5J 2Y3

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for toluene.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Toluene is a component of feedstocks and additives, and is contained in some final products. Toluene is also a by-product of incomplete fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of toluene associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Material and Feedstock Substitution

In response to past legislation, most additives containing volatile organic compounds have been removed from the formulations of manufactured greases and blended lubricants. No further material substitutions have been identified at this time; however, it is noted that PCLI's Research and Development group reviews the raw materials on a regular basis and when feasible, materials are substituted.

4.2 Equipment or Process Modification

In response to past legislation, the Lubricants Centre optimized a process more than 15 years ago limiting benzene pre-cursors (i.e., toluene).

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's (CCME) publication "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.3 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication *“Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993”*. When leaks are detected, the Maintenance department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.4 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.5 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.6 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.



Employees and contractors undergo training on benzene. Much of the training is transferrable to toluene, as benzene and toluene travel in the same process streams (refer to Section 4.6 of Appendix B).

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air, which could also reduce toluene releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use, creation or presence in products of toluene, as no technically or economically feasible options were identified at this time. Toluene use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of toluene in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for toluene, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.





Appendix J: Toxics Substance Reduction Plan Summary for Xylene





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Xylene**

VERSION 1.0

Petro-Canada Lubricants Inc.
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L5J 2Y3

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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for xylene.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Xylene is a component of feedstocks and additives, and is contained in some final products. Xylene is also a by-product of incomplete fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use, creation, and release of xylene associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Material and Feedstock Substitution

In response to past legislation, most additives containing volatile organic compounds have been removed from the formulations of manufactured greases and blended lubricants. No further material substitutions have been identified at this time; however, it is noted that PCLI's Research and Development group reviews the raw materials on a regular basis and when feasible, materials are substituted.

4.2 Equipment or Process Modification

In response to past legislation, the Lubricants Centre optimized a process more than 15 years ago limiting benzene pre-cursors (i.e., xylene).

The facility has upgraded all tanks that contain lighter materials/products to meet the specifications outlined in the Canadian Council of Ministers of the Environment's publication (CCME) publication "*Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks, (PN 1180).*"

4.3 Spill and Leak Prevention

Where possible, proper sampling points have been installed to reduce spills and leaks during sample collection.

The Lubricants Centre identified hazardous sampling points and installed closed-loop sampling points using industry-wide accepted DOPAK sample systems.

The Lubricants Centre implemented a Leak Detection and Repair (LDAR) program in 1996. Components (e.g., valves, flanges, open-ended lines, etc.) are tested on an annual basis with pumps and compressors tested on a quarterly basis. In accordance with the Lubricants Centre Comprehensive Certificate of Approval (CofA) (Air), the LDAR program follows the CCME publication *“Environmental Code of Practice for the Measurement and Control of Fugitive Emission from Equipment Leaks, October 1993”*. When leaks are detected, the Maintenance department determines the best option for repair, which may include replacement of components with better (less leak-prone) equipment.

4.4 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.5 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.

4.6 Training or Improved Operating Practices

The Lubricants Centre has documented procedures regarding the proper preparation of equipment for maintenance. This reduces the amount of material that is drained to the sewer, which is subsequently treated at the on-site Wastewater Treatment Plant (WWTP).

Prior to commencing shutdowns, Operators are reminded to review and follow proper procedures to minimize discharges to sewer.

The Lubricants Centre has an internal reporting system, which is used to document losses of containment (i.e., spills) and action plans are developed to prevent a reoccurrence.



Employees and contractors undergo training on benzene. Much of the training is transferrable to xylene, as benzene and xylene travel in the same process streams (refer to Section 4.6 of Appendix B).

5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time. However, it is important to note that the Ontario Ministry of the Environment introduced a new annual standard for benzene that comes into effect on July 1, 2016 and as such, the Lubricants Centre is reviewing opportunities to reduce benzene releases to air, which could also reduce xylene releases to air.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use, creation or presence in products of xylene, as no technically or economically feasible options were identified at this time. Xylene use and creation is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to producing high quality products and operating its business in an environmentally responsible manner. Wherever feasible, PCLI will endeavour to reduce the use, creation and release of xylene in full compliance with all federal and provincial regulations.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for xylene, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.



Appendix K: Toxics Substance Reduction Plan Summary for Zinc





2011 TOXICS REDUCTION ACT

**Toxic Substance
Reduction Plan Summary for
Zinc**

VERSION 1.0

Petro-Canada Lubricants Inc.
385 Southdown Road
Mississauga, Ontario
L5J 2Y3

December 3, 2012





Version Control

Version	Date Issued	Modifications
1.0	December 3, 2012	Original version made available to the public and employees





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1.0 INTRODUCTION

This appendix contains the Toxic Substance Reduction Plan Summary for zinc.

2.0 BASIC FACILITY INFORMATION

Section 2.0 of the main report summarizes the information, as required by the *Toxics Reduction Act* (the Act) and Ontario Regulation 455/09 (O. Reg. 455/09).

3.0 DESCRIPTION OF SUBSTANCE

Zinc is present in catalyst and additives. Zinc is also a by-product of fuel combustion; a process necessary to provide heat and steam to the Lubricants Centre operations.

4.0 ACTIONS TAKEN TO-DATE

As part of our environmental stewardship, Petro-Canada Lubricants Inc. (PCLI) has already undertaken and/or completed a number of initiatives and actions that have reduced the use and release of zinc associated with the Lubricants Centre operations. Some of these initiatives and actions are highlighted in the following sections.

4.1 Product Redesign or Reformulation

PCLI's Research and Development group reviews the industry performance standards on a regular basis and when feasible, products are reformulated.

4.2 On-Site Reuse or Recycling

Whenever feasible, off-spec material is captured and reworked into other process inputs.

4.3 Improved Inventory Management or Purchasing Techniques

The facility employs a just in time delivery inventory management process; raw materials and feedstocks are purchased based on unit throughput, sales forecasts and feedstock availability in the market. This minimizes the inventory stored on-site.

The facility employs a Material Safety Datasheet approval process. All new materials are screened; where possible materials can be rejected if they contain toxic substances and suitable alternatives are available.



5.0 TOXIC SUBSTANCE REDUCTION PLAN OPTION TO BE IMPLEMENTED

There were no options identified for implementation, above and beyond the actions the Lubricants Centre has already taken (as detailed above), at this time.

The plan will be reviewed in accordance with the Act and regulation, at which time, new options may be identified and considered for implementation.

5.1 Statement of Intent

The Lubricants Centre does not intend to reduce the use of zinc, as no technically or economically feasible options were identified at this time. Zinc use is inherent in the manufacturing of some final products.

5.2 Objective

PCLI is committed to operating the business in an environmentally responsible manner. We continually bring innovative new products to the market, through research, collaboration and innovation. PCLI will continue to monitor industry performance standards for grease and lubricants products and whenever feasible, will endeavour to reduce the use of zinc in its products.

Additionally, the Lubricants Centre will continue to monitor the performance standards for catalyst and whenever feasible, will endeavour to reduce the use of zinc by using alternative catalysts containing less zinc without increasing the use of another toxic substance.

6.0 PLAN SUMMARY STATEMENT

This Toxic Substance Reduction Plan Summary reflects the content of the Toxic Substance Reduction Plan for zinc, prepared for the Lubricants Centre, dated December 3, 2012.

7.0 PLAN CERTIFICATION STATEMENT

As described in Section 3.0 of the main report for the Toxic Substance Reduction Plan Summaries, Attachment 1 contains the copies of the certifications required by the Highest Ranking Employee and Licensed Planner, as required by the Act and regulation.

