Plan Summary Preview

Company Details

Company Legal Name:

Air Products Canada Ltd.

Company Address:

989 Derry Road, Mississauga (Ontario)

Report Details

Facility:

Corunna Hydrogen Facility

Facility Address:

150 St. Clair Parkway Parkway, Corunna (Ontario)

Update Comments:

Activities

Facility Contacts

Facility Contacts

Public Contact:*

Bryan Jacques

Highest Ranking Employee:

Bryan Jacques

Person responsible for preparing the toxic substance reduction plan:

Wasef Jamil

Organization Validation

Company and Parent Company Information

Company Details

Company Legal Name:* Air Products Canada Ltd.

Company Trade Name:* Air Products Canada Ltd

Business Number:*	877788000

Mailing Address

Delivery Mode:	General Delivery
PO Box	
Rural Route Number	
Address Line 1	102 - 989 Derry Road East
City*	Mississauga
Province/Territory**	Ontario
Postal Code:**	L5T2J8

Physical Address

Address Line 1	102 - 989 Derry Road
City	Mississauga
Province/Territory	Ontario
Postal Code	L5T2J8
Additional Information	
Land Survey Description	
National Topographical Description	

Parent Companies

Air Products Canada Ltd

Company Legal Name:*	Air Products Canada Ltd
Percentage owned:*	100.00
Business Number:*	877788000

Mailing Address

Delivery Mode:	

PO Box	
Rural Route Number	
Address Line 1	989 Derry Road East
City*	Mississauga
Province/Territory**	Ontario
Postal Code:**	ONL5T2J8

Physical Address

Address Line 1	989 Derry Road East
City	Mississauga
Province/Territory	Ontario
Postal Code	L5T2J8
Additional Information	
Land Survey Description	
National Topographical Description	

Air Products and Chemicals, Inc.

Company Legal Name:*	Air Products and Chemicals, Inc.
Percentage owned:*	50.00
Business Number:*	877788000

Mailing Address

Delivery Mode:	General Delivery
PO Box	
Rural Route Number	
Address Line 1	7201 Hamilton Blvd. Boulevard

City*	Allentown
Province/Territory**	Pennsylvania
Postal Code:**	18195

Physical Address

Address Line 1	7201 Hamilton Boulevard
City	Allentown
Province/Territory	Pennsylvania
Postal Code	18195
Additional Information	
Land Survey Description	
National Topographical Description	

AIR PRODUCTS CANADA

Company Legal Name:*	AIR PRODUCTS CANADA
Percentage owned:*	50.00
Business Number:*	877788000

Mailing Address

Delivery Mode:	
PO Box	
Rural Route Number	
Address Line 1	7201 Hamilton Boulevard
City*	Allentown
Province/Territory**	Pennsylvania
Postal Code:**	18195

Physical Address

Address Line 1	7201 Hamilton
City	Allentown
Province/Territory	Pennsylvania
Postal Code	18195-1501
Additional Information	
Land Survey Description	
National Topographical Description	

Facility Validation

Facility Information

Facility:*	Corunna Hydrogen Facility
NAICS Id:*	325120
NPRI Id:*	11489
ON Reg 127/01 Id:	

Mailing Address

Delivery Mode:	Post Office Box
PO Box	608
Rural Route Number	
Address Line 1	150 St. Clair Parkway
City*	Corunna
Province/Territory**	Ontario
Postal Code:**	N0N1G0

Physical Address

Address Line 1	150 St. Clair Parkway Parkway

City	Corunna
Province/Territory	Ontario
Postal Code	N0N1G0
Additional Information	
Land Survey Description	
National Topographical Description	

Geographical Address

Latitude	42.90110
Longitude	-82.44610
UTM Zone**	17
UTM Easting**	381776
UTM Northing**	4750852

Contact Validation

Contacts

Public Contact:

First Name:*	Bryan
Last Name:*	Jacques
Position:*	Plant Manager
Telephone:*	5198624243
Ext:	
Fax:	5198624673
Email:*	jacqueb@airproducts.com

Mailing Address

Delivery Mode:	Post Office Box

PO Box	608
Rural Route Number	
Address Line 1	150 St. Clair Parkway Parkway
City*	Corunna
Province/Territory**	Ontario
Postal Code:**	N0N1G0

Highest Ranking Employee:

First Name:*	Bryan
Last Name:*	Jacques
Position:*	Plant Manager
Telephone:*	5198624243
Ext:	
Fax:	5198624673
Email:*	jacqueb@airproducts.com

Mailing Address

Delivery Mode:	Post Office Box
PO Box	608
Rural Route Number	
Address Line 1	150 St. Clair Parkway Parkway
City*	Corunna
Province/Territory**	Ontario
Postal Code:**	N0N1G0

Person responsible for the Toxic Substance Reduction Plan preparation:

First Name:*	Wasef
Last Name:*	Jamil
Position:*	Environmental Engineer/Project Manager
Telephone:*	9057471876
Ext:	
Fax:	
Email:*	wasef.jamil@urs.com

Mailing Address

Delivery Mode:	
PO Box	
Rural Route Number	
Address Line 1	30 Leek Crescent
City*	Richmond Hill
Province/Territory**	Ontario
Postal Code:**	L4B4N4

Employees

Employees

Number of Full-time Employees:*

10

Substances

NA - 16, Ammonia (total)

NA - 16, Ammonia (total)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator’s intent to use less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not using less of this substance?**

The Facility does not use ammonia in the SMR process

Creation

Does the plan include a statement that stipulates the owner or operator’s intent to create less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not creating less of this substance?:**

APC is committed to playing a leadership role in environmental sustainability and its stewardship. Ammonia is currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. As part of the responsibilities towards a better environment and society, given the current process conditions, APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of ammonia while being in compliant with the applicable Federal and Provincial Regulations.

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

As part of Ontario’s toxic reduction strategy to evaluate and reduce the use of toxic substances, this plan addresses the evaluation of how ammonia was created at the Facility in order to find options and means of reducing its creation. Since ammonia is created unintentionally as a byproduct during the production of hydrogen at the Facility, at this time, no reduction objective has been set, but APC intends to monitor closely and evaluate the production process in order to reduce the creation, whenever feasible.

Toxic Substance Use Targets

Reduction target:*

	Quantity	Unit

☒ No target or

Timeframe target:*

☒ No target or years

Description of use targets:

Toxic Substance Creation Targets

Reduction target:*

	Quantity	Unit
☒ No target or		

Timeframe target:*

☒ No target or years

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

This substance is not used at the facility

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

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

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

Ammonia is produced at the Steam-Methane Reforming (SMR) process in the reformer catalyst tubes by a side reaction between hydrogen and nitrogen, which is one of the impurities in the syngas stream. Ammonia is then carried through the syngas stream, until the liquid component of the stream is removed at the process condensate separator. The process condensate is continuously generated at the Facility and is used as a makeup to the steam generation system, which is fed in a combination with the natural gas, into the reformer furnace for the production of hydrogen. Based on the concentration and the volume of the process condensate generated, the amount of
ammonia created in 2012 was calculated to be 75.13 tonnes

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If ‘No’, record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If ‘Yes’, explain why no option will be implemented:**

As part of Ontario’s toxic reduction strategy to evaluate and reduce the use of toxic substances, this plan addresses the evaluation of how ammonia was created at the Facility in order to find options and means of reducing its creation. Since ammonia is created unintentionally as a byproduct during the production of hydrogen at the Facility, at this time, no reduction objective has been set and no toxic reduction option will be implemented.

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 choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

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

TSRP0134

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

TSRP0134

Which version of the plan is reflected in this summary?*

New Plan

630-08-0, Carbon monoxide

630-08-0, Carbon monoxide

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator’s intent to use less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not using less of this substance?**

The Facility does not use CO in the SMR process

Creation

Does the plan include a statement that stipulates the owner or operator’s intent to create less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not creating less of this substance?:**

APC is committed to playing a leadership role in environmental sustainability and its stewardship. CO is currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. As part of the responsibilities towards a better environment and society, given the current process conditions, APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of CO while being in compliant with the applicable Federal and Provincial Regulations.

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of the CO. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of CO at the Facility.

Toxic Substance Use Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of use targets:

Toxic Substance Creation Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

This substance is not used at the facility

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

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

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

In the steam-methane reforming stage, heat is created in the reformer furnace through controlled combustion of two fuels; natural gas and purge gas obtained from PSA units. Combustion occurs in the radiant section of the furnace, which causes emissions of CO.

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If ‘No’, record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If ‘Yes’, explain why no option will be implemented:**

CO is created unintentionally as a by-product and APC intends to monitor new methods and investigate emerging technologies to reduce or
eliminate the creation of the CO. At this time, no reduction objective has been set; but APC
will closely evaluate the production process in order to reduce the creation of CO 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 choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

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

TSRP0134

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

TSRP0134

Which version of the plan is reflected in this summary?*

New Plan

11104-93-1, Nitrogen oxides (expressed as NO2)

11104-93-1, Nitrogen oxides (expressed as NO2)

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator’s intent to use less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not using less of this substance?**

The Facility does not use Nitrogen Oxides (NOx) in the SMR process.

Creation

Does the plan include a statement that stipulates the owner or operator’s intent to create less of this toxic substance at their facility?*

Yes

If ‘yes’, provide the exact statement of intent:**

APC is committed to playing a leadership role in environmental sustainability and its stewardship. NOx is currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. As part of the responsibilities towards a better environment and society, given the current process conditions, APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of NOx while being in compliant with the applicable Federal and Provincial Regulations

If ‘no’, what rationale is specified in the plan for not creating less of this substance?:**

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of the NOx. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of NOx at the Facility.

Toxic Substance Use Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of use targets:

Toxic Substance Creation Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

This substance is not used at the facility

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

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

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

In the steam-methane reforming stage, heat is created in the reformer furnace through controlled combustion of two fuels; natural gas and purge gas obtained from PSA units. Combustion occurs in the radiant section of the furnace, which causes emissions of NOx.

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If ‘No’, record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If ‘Yes’, explain why no option will be implemented:**

NOx is created as a by-production during combustion of natural gas in the reformer furnace. APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of the NOx. At this time, no reduction objective or reduction option implementation has been set; but APC will closely evaluate the production process in order to reduce the creation of NOx 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 choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

Potential process modifications were identified during the preparation of the reduction plan for NOx. Following is the description that was identified -

1) Changing the conditions under which the reformer fuel is combusted, may lead to lowering of NOx emissions from the existing operations. For example, utilizing thermal insulation at the walls of the entire reformer to slow down the heat release rate from the entire reformer furnace, may lead to capturing more heat within the furnace, therefore, less reformer fuel will be burned. This is because less heat energy will be lost through the furnace walls causing the furnace to maintain the optimum combustion temperature without combusting as much reformer fuel as it currently does without the thermal insulation.
Specific process modifications of the combustion process can also be made for preventing the formation of NOx emissions. The modification to the process for controlling NOx emissions can be made at both the pre-and post-combustion stages. At the pre-combustion stage, the two most prevalent combustion control techniques used to prevent the formation of NOx emissions from natural gas-fired furnaces are flue gas recirculation and low NOx burners.

• Recirculation of flue gas: Flue gas mainly consists of combustion products which act as inerts during combustion of the fuel/air mixture. The use of this flue gas reduces NOx emissions by two mechanisms - primarily, the recirculated gas acts as a dilutent to reduce combustion temperatures, thus suppressing the NOx generation. To a lesser extent, this flue gas also reduces NOx formation by lowering the oxygen concentration in the primary flame zone. The amount of recirculated flue gas is a key operating parameter influencing NOx emission rates. A flue gas recirculation system is normally used in combination with specially designed low NOx burners capable of sustaining a stable flame with the increased inert gas flow resulting from the use of the recirculated flue gas.

• Low NOx burners: Low NOx burners reduce NOx by accomplishing the combustion process in stages. Staging partially delays the combustion process, resulting in a cooler flame which suppresses NOx formation. Commercially available low NOx burners are also capable of another combustion technique by creating an oscillating combustion environment that has both fuel rich and fuel lean flame zones. Oscillating combustion is a retrofit technology that involves the forced oscillation of the fuel flow rate to a furnace.

These oscillations create successive, fuel-rich and fuel-lean zones within the furnace. The flame heats up faster due to the more luminous fuel-rich zones, resulting a longer overall flame length, and the breakup of the thermal boundary layer. As a result, heat-up times shorten, thereby increasing furnace productivity. It also reduces the heat going up the stack, thus increasing efficiency. The fuel-rich and fuel-lean zones also produce substantially less NOx than firing at a constant excess air level. The longer flames and higher heat transfer rate reduce overall peak flame temperature thereby, reducing additional NOx formation from eventual zone mixing and combustible burnout from the rich zones. However, it should be noted that addition of Low-NOx burners to a flue gas recirculation system, may also lead to incomplete combustion. Hence, it is extremely important to properly evaluate the entire combination of the two technologies and the suitability for the application to the reformer furnace of the SMR process. According to the United States Environmental Protection Agency (USEPA), when low NOx burners and flue gas recirculation system are used in combination, the technique is capable of reducing NOx emissions by 60 to 90 percent.

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

TSRP0134

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

TSRP0134

Which version of the plan is reflected in this summary?*

New Plan

NA - M09, PM10 - Particulate Matter <= 10 Microns

NA - M09, PM10 - Particulate Matter <= 10 Microns

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator’s intent to use less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not using less of this substance?**

The Facility does not use PM10 at the Facility

Creation

Does the plan include a statement that stipulates the owner or operator’s intent to create less of this toxic substance at their facility?*

Yes

If ‘yes’, provide the exact statement of intent:**

APC is committed to playing a leadership role in environmental sustainability and its stewardship. PM10 is currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. As part of the responsibilities towards a better environment and society, given the current process conditions, APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of PM10 while being in compliant with the applicable Federal and Provincial Regulations.

If ‘no’, what rationale is specified in the plan for not creating less of this substance?:**

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of PM10. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of PM10 at the Facility

Toxic Substance Use Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of use targets:

Toxic Substance Creation Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

This substance is not used at the facility

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

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

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

In the steam-methane reforming stage, heat is created in the reformer furnace through controlled combustion of two fuels; natural gas and purge gas obtained from PSA units. Combustion occurs in the radiant section of the furnace, which causes emissions of PM10.

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If 'No', record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If 'Yes', explain why no option will be implemented:**

PM10 is created as a by-product in the SMR process. APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of PM10. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of PM10 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 choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

The reduction plan identified process modification as a reduction option from a post-combustion perspective for PM10. Some of the common practices include the use of cyclones or fabric filters. For cyclonic baghouses, the gas swirls around an immersed tube and the particulates are carried by inertia to the cylinder wall, from where it exhausts through the conical section on the bottom while the clean gas exits through the top. Fabric filters work like a household vacuum cleaner. The raw gas passes through a filter which allows air to flow through, but it retains PMs. The particles remain in the filter until compressed air is blown in the opposite direction, cleaning the filter and causing the dust to fall down from where it is collected. A wide range of PMs down to submicron levels can be removed by optimizing the filter fabric selection. These proven technologies are widely used in many industries for the removal of PMs.

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

TSRP0134

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

TSRP0134

Which version of the plan is reflected in this summary?*

New Plan

NA - M10, PM2.5 - Particulate Matter <= 2.5 Microns

NA - M10, PM2.5 - Particulate Matter <= 2.5 Microns

Substances Section Data

Statement of Intent

Use

Does the plan include a statement that stipulates the owner or operator’s intent to use less of this toxic substance at their facility?*

No

If ‘yes’, provide the exact statement of intent:**

If ‘no’, what rationale is specified in the plan for not using less of this substance?**

The Facility does not use PM2.5 at the Facility

Creation

Does the plan include a statement that stipulates the owner or operator’s intent to create less of this toxic substance at their facility?*

Yes

If ‘yes’, provide the exact statement of intent:**

The Facility used natural gas and PSA Purge Gas as fuel for the reformer burners, and PM2.5 is routinely emitted to atmosphere as combustion by-product. APC is committed to playing a leadership role in environmental sustainability and its
stewardship. PM2.5 currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. As part of the responsibilities towards a better environment and society, given the current process conditions, APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of PM2.5 while being in compliant with the applicable Federal and Provincial Regulations.

If ‘no’, what rationale is specified in the plan for not creating less of this substance?:**

Objectives, Targets and Description

Plan Objectives

Objectives in plan:*

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of PM2.5. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of PM2.5 at the Facility.

Toxic Substance Use Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of use targets:

Toxic Substance Creation Targets

Reduction target:*

		Quantity	Unit
☒ No target	or		

Timeframe target:*

☒ No target	or		years

Description of creation targets:

Reasons for Using this Toxic Substance

This substance is used at the facility:*

This substance is not used at the facility

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

Reasons for Creating this Toxic Substance

This substance is created at the facility:*

As a by-product

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

Since the Facility used natural gas and PSA Purge Gas as fuel for the reformer burners, PM2.5 is routinely emitted to atmosphere as combustion by-product.

Toxic Reduction Options for Implementation

Toxic substance reduction option(s) to be implemented:

Does the plan specify that no toxic reduction option will be implemented?*

Yes

If ‘No’, record the option(s) under the appropriate categories below (e.g., Materials or feedstock substitution; Product design or reformulation).If ‘Yes’, explain why no option will be implemented:**

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of the PM2.5. At this time, no reduction objective has been set and no reduction option will be implemented.

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 choosing these options for implementation:

Summary of actions undertaken outside of the plan to reduce the use and creation of this toxic substance at the facility:

The reduction plan identified process modification as a reduction option from a post-combustion perspective. Some of the
common practices include the use of cyclones or fabric filters. For cyclonic baghouses, the gas swirls around an immersed tube and the particulates are carried by inertia to the cylinder wall, from where it exhausts through the conical section on the bottom while the clean gas exits through the top. Fabric filters work like a household vacuum cleaner. The raw gas passes through a filter which allows air to flow through, but it retains PMs. The particles remain in the filter until compressed air is blown in the opposite direction, cleaning the filter and causing the dust to fall down from where it is collected. A wide range of PMs down to submicron levels can be removed by optimizing the filter fabric selection. These proven technologies are widely used in many industries for the removal of PMs.

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

TSRP0134

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

TSRP0134

Which version of the plan is reflected in this summary?*

New Plan