

5.7.4 Economic Feasibility

See Section 5.7.1.

Section 6.0 Plan Certifications

6.1 Certification by Highest Ranking Employee

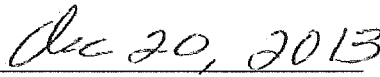
As of December 20, 2013, I, Doug Gamble, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

[PM2.5]

[PM10]



Doug Gamble
Plant Manager



Date

As of December 20, 2013, I, Erik Martinez certify that I am familiar with the processes at CoorsTek that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subSection 4 (1) of the *Toxics Reduction Act, 2009* that are set out in the plan dated December 18, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

[PM2.5]

[PM10]



Erik Martinez
Toxic Substance Reduction Planner
License No. TSRP0005



Date

TRA PLAN SUMMARY – PM2.5

Basic Facility Information

Name & CAS # of Substance	PM2.5	NA
Facility Identification and Site Address		
Company Name	CoorsTek Advanced Material Hamilton ULC	
Facility Name	CoorsTek Advanced Material Hamilton ULC	
Facility Address	Physical Address:	Mailing Address: (if different)
	45 Curtis Avenue North Paris, ON N3L 3T6	
Spatial Coordination of Facility	551060 m E 4782571 m N	
Number of Employees	69	
NPRI ID	11329	
Ontario MOE ID Number	N/A	
Parent Company (PC) Information		
PC Name & Address	CoorsTek	
Percent Ownership for each PC	16000 Table Mountain Pkwy North Table Mountain, Golden, Colorado USE, 80403 100%	
Business Number for PC		
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	32 Manufacturing	
4 Digit NAICS Code	3271 – Clay product and refractory manufacturing	
6 Digit NAICS Code	327120 – Clay building material and refractory manufacturing	
Company Contact Information		
Facility Public Contact	Doug Gamble, Plant Manager	
	dgamble@coorstek.com	
	Phone: (519) 442-7792	Same address as facility
	Fax: (519) 442-6024	
Facility Technical Contact	Nadine Bellhouse, HR/EHS Manager	
	nbellhouse@coorstek.com	
	Phone: (519) 442-7792	Same as facility address
	Fax: (519) 442-6024	

Company Coordinator Contact	Same as Facility Technical Contact	
Person who Prepared the Plan: (if different from the Coordinator)	Same as Company Coordinator	
Highest Ranking Employee	Same as Public Contact	
Planner Information:		
Planner Responsible for Making Recommendations	Erik Martinez	651 Colby Drive Waterloo, Ontario N2V 1C2
	Planner License No.	TSRP0005
	emartinez@croworld.com	
	Phone: (519) 884-0510 ext. 2342	
Planner Responsible for Certification	(same as planner responsible for making recommendations)	

Toxic Reduction Policy Statement of Intent

CoorsTek Advanced Material Hamilton ULC (CoorsTek) is committed to playing a leadership role in protecting the environment. CoorsTek does not intend to reduce the creation of PM2.5. CoorsTek only creates PM2.5; therefore, this plan does not address reducing its use.

Reduction Objectives

CoorsTek prides itself on technological innovation in order to produce high quality ceramic filters in an environmentally responsible manner. CoorsTek's manufacturing operation has already been optimized to minimize the creation of PM2.5. CoorsTek will strive to reduce the creation of PM2.5 at the Facility in the future should an option become available.

Description of Facility

CoorsTek produces ceramic filters for the iron casting industry made from dry clay combined with water and paraflex oil. Raw material is delivered, inspected, and then placed in the raw material storage area. The raw material and mix is weighed and moved via conveyor to the pulverizer where it is combined with emery and oil to form clay. After inspection, the clay is stored in the mixed body storage area. The raw products are shaped at the press line and moved to the desired dryer. After drying, the products are baked in kilns and moved to final inspection. The final products are packaged, labeled, and then shipped to the customer.

The Facility operates 24 hours a day, 7 days per week.

Toxic Substance Reduction Options

After looking into the seven categories of toxic substance reduction options, no options were identified. Explanations are provided in the table below to detail why an option could not be identified in each category.

Toxic Substance Reduction Category	Option: Identification and Description
1) Materials or feedstock substitution	No option identified: CoorsTek's produces ceramic filters for clients in the iron casting industry. All PM2.5 created is released from combustion processes, baghouse dust collectors, and silos. No PM2.5 is present in any of the raw materials. Therefore, no potential reduction options were identified in this category.
2) Product design or reformulation	No option identified: CoorsTek's formulation for the production of ceramic filters is based on past research, trialing, and analysis used to create products which appeal to their customers. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3) Equipment or Process Modification	No option identified: CoorsTek conducts regular preventative maintenance on all equipment to ensure it is operating efficiently. The process is specialized and due to the unique chemistry of the process modifications are not possible.
4) Spill and Leak prevention	No option identified: No options for reduction in this category could be identified. All of CoorsTek's baghouse dust collectors, dryers, kilns, and lift trucks have maintenance schedules that ensure efficient operation and avoidance of spills or leaks. The Facility is already doing everything possible to reduce the creation and release of PM2.5.
5) On-site reuse or recycling	No option identified: All waste generated at the Facility is disposed of off-site. The PM2.5 created in the dust collectors, dryers, kilns, or lift trucks cannot be reused or recycled in the manufacturing process. Therefore, no options can be identified.

<p>6) Improve inventory management or purchasing techniques</p>	<p>No option identified: CoorsTek's inventory is controlled by customer demand. The Facility has limited inventory at any given time, which addresses any issues of stock.</p>
<p>7) Training or improved operating practices</p>	<p>No option identified: The Facility uses equipment maintenance programs and training on Standard Operating Procedures (SOPs) to ensure efficient operating practices.</p> <p>CoorsTek conducts continuous improvement meetings and production meetings to ensure issues are dealt with and communicated as soon as possible to ensure the quality of parts are in conformance with the customer demands.</p>

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for PM2.5.

Certification by Highest Ranking Employee

Attached.

Certification by Licensed Planner

Attached.

TRA PLAN SUMMARY – PM10**Basic Facility Information**

Name & CAS # of Substance	PM10	NA
Facility Identification and Site Address		
Company Name	CoorsTek Advanced Material Hamilton ULC	
Facility Name	CoorsTek Advanced Material Hamilton ULC	
Facility Address	Physical Address:	Mailing Address: (if different)
	45 Curtis Avenue North Paris, ON N3L 3T6	
Spatial Coordination of Facility	551060 m E 4782571 m N	
Number of Employees	69	
NPRI ID	11329	
Ontario MOE ID Number	N/A	
Parent Company (PC) Information		
PC Name & Address	CoorsTek 16000 Table Mountain Pkwy North Table Mountain, Golden, Colorado USE, 80403	
Percent Ownership for each PC	100%	
Business Number for PC		
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	32 Manufacturing	
4 Digit NAICS Code	3271 – Clay product and refractory manufacturing	
6 Digit NAICS Code	327120 – Clay building material and refractory manufacturing	
Company Contact Information		
Facility Public Contact	Doug Gamble, Plant Manager	
	dgamble@coorstek.com	
	Phone: (519) 442-7792	Same address as facility
	Fax: (519) 442-6024	
Facility Technical Contact	Nadine Bellhouse, HR/EHS Manager	
	nbellhouse@coorstek.com	
	Phone: (519) 442-7792	Same as facility address
	Fax: (519) 442-6024	

Company Coordinator Contact	Same as Facility Technical Contact	
Person who Prepared the Plan: (if different from the Coordinator)	Same as Company Coordinator	
Highest Ranking Employee	Same as Public Contact	
Planner Information:		
Planner Responsible for Making Recommendations	Erik Martinez	651 Colby Drive Waterloo, Ontario N2V 1C2
	Planner License No.	TSRP0005
	emartinez@croworld.com	
	Phone: (519) 884-0510 ext. 2342	
Planner Responsible for Certification	(same as planner responsible for making recommendations)	

Toxic Reduction Policy Statement of Intent

CoorsTek Advanced Material Hamilton ULC (CoorsTek) is committed to playing a leadership role in protecting the environment. CoorsTek does not intend to reduce the creation of PM10. CoorsTek only creates PM10; therefore, this plan does not address reducing its use.

Reduction Objectives

CoorsTek prides itself on technological innovation in order to produce high quality ceramic filters in an environmentally responsible manner. CoorsTek's manufacturing operation has already been optimized to minimize the creation of PM10. CoorsTek will strive to reduce the creation of PM10 at the Facility in the future should an option become available.

Description of Facility

CoorsTek produces ceramic filters for the iron casting industry made from dry clay combined with water and paraflex oil. Raw material is delivered, inspected, and then placed in the raw material storage area. The raw material and mix is weighed and moved via conveyor to the pulverizer where it is combined with emery and oil to form clay. After inspection, the clay is stored in the mixed body storage area. The raw products are shaped at the press line and moved to the desired dryer. After drying, the products are baked in kilns and moved to final inspection. The final products are packaged, labeled, and then shipped to the customer.

The Facility operates 24 hours a day, 7 days per week.

Toxic Substance Reduction Options

After looking into the seven categories of toxic substance reduction options, no options were identified. Explanations are provided in the table below to detail why an option could not be identified in each category.

Toxic Substance Reduction Category	Option: Identification and Description
1) Materials or feedstock substitution	No option identified: CoorsTek's produces ceramic filters for clients in the iron casting industry. All PM10 created is released from combustion processes, baghouse dust collectors, and silos. No PM10 is present in any of the raw materials. Therefore, no potential reduction options were identified in this category.
2) Product design or reformulation	No option identified: CoorsTek's formulation for the production of ceramic filters is based on past research, trialing, and analysis used to create products which appeal to their customers. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3) Equipment or Process Modification	No option identified: CoorsTek conducts regular preventative maintenance on all equipment to ensure it is operating efficiently. The process is specialized and due to the unique chemistry of the process modifications are not possible.
4) Spill and Leak prevention	No option identified: No options for reduction in this category could be identified. All of CoorsTek's baghouse dust collectors, dryers, kilns, and lift trucks have maintenance schedules that ensure efficient operation and avoidance of spills or leaks. The Facility is already doing everything possible to reduce the creation and release of PM10.
5) On-site reuse or recycling	No option identified: All waste generated at the Facility is disposed of off-site. The PM10 created in the dust collectors, dryers, kilns, or lift trucks cannot be reused or recycled in the manufacturing process. Therefore, no options can be identified.

<p>6) Improve inventory management or purchasing techniques</p>	<p>No option identified: CoorsTek's inventory is controlled by customer demand. The Facility has limited inventory at any given time, which addresses any issues of stock.</p>
<p>7) Training or improved operating practices</p>	<p>No option identified: The Facility uses equipment maintenance programs and training on Standard Operating Procedures (SOPs) to ensure efficient operating practices.</p> <p>CoorsTek conducts continuous improvement meetings and production meetings to ensure issues are dealt with and communicated as soon as possible to ensure the quality of parts are in conformance with the customer demands.</p>

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for PM10.

Certification by Highest Ranking Employee

Attached.

Certification by Licensed Planner

Attached.

TABLE A.2

TOXICS REDUCTION ACT COMPOUNDS PUBLIC REPORTING RANGES
 COORSTEK ADVANCED MATERIAL HAMILTON ULC
 PARIS, ONTARIO

<i>Compounds</i>	<i>CAS No.</i>	<i>Ammount Used (tonnes/yr)</i>	<i>Amount Created (tonnes/yr)</i>	<i>Air Release Estimate (tonnes/yr)</i>	<i>Ammount Disposed (tonnes/yr)</i>	<i>Amount Transferred (tonnes/yr)</i>	<i>Amount Contained in Product (tonnes/yr)</i>
PM10	NA	0	>1 - 10	>1 - 10	0	0	0
PM2.5	NA	0	>1 - 10	>1 - 10	0	0	0

Notes:

- (1) Ranges
 - >0 - 1
 - >1 - 10
 - >10 - 100
 - >100 - 1000

(2) If toxic substance is acetone, use calculations from subsection 4 (3) of O. Reg 127/01

TABLE A.3

**SUMMARY OF REASONS FOR CHANGE FOR TOXIC SUBSTANCE AMOUNTS
COORSTEK ADVANCED MATERIAL HAMILTON ULC
PARIS, ONTARIO**

<i>Amount Used</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Created</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	-4.48	H
PM2.5	NA	-4.63	H
<i>Air Release</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	-4.48	H
PM2.5	NA	-4.63	H
<i>Amount Disposed</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Transferred</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Contained in Product</i>			
<i>Percent Change from 2012-2013</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>(%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H

Notes:

Typical Reasons for Change in provided in the following list

- A - Changes in Production Levels
- B - Changes in Estimation Methods
- C - Pollution Prevention Activities
- D - Changes in On-Site Treatment
- E - Changes in Disposal
- F - Changes in Off-Site Transfers for Recycling
- G - Other (specify in comments)
- H - No Significant Change (<10%) or No Change
- I - Not Applicable (First year reporting substance)

TABLE A.2
TOXICS REDUCTION ACT COMPOUNDS PUBLIC REPORTING RANGES
COORSTEK ADVANCED MATERIAL HAMILTON ULC
PARIS, ONTARIO

<i>Compounds</i>	<i>CAS No.</i>	<i>Ammount Used (tonnes/yr)</i>	<i>Amount Created (tonnes/yr)</i>	<i>Air Release Estimate (tonnes/yr)</i>	<i>Ammount Disposed (tonnes/yr)</i>	<i>Amount Transferred (tonnes/yr)</i>	<i>Amount Contained in Product (tonnes/yr)</i>
PM10	NA	0	>1 - 10	>1 - 10	0	0	0
PM2.5	NA	0	>1 - 10	>1 - 10	0	0	0

Notes:

- (1) Ranges >0 - 1
 >1 - 10
 >10 - 100
 >100 - 1000

(2) If toxic substance is acetone, use calculations from subsection 4 (3) of O. Reg 127/01

TABLE A.3

**SUMMARY OF REASONS FOR CHANGE FOR TOXIC SUBSTANCE AMOUNTS
COORSTEK ADVANCED MATERIAL HAMILTON ULC
PARIS, ONTARIO**

<i>Amount Used</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Created</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	-1.53	H
PM2.5	NA	-1.52	H
<i>Air Release</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	-1.53	H
PM2.5	NA	-1.52	H
<i>Amount Disposed</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Transferred</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H
<i>Amount Contained in Product</i>			
<i>Compound</i>	<i>CAS No.</i>	<i>Percent Change from 2013-2014 (%)</i>	<i>Description of Reason for Change</i>
PM10	NA	0.00	H
PM2.5	NA	0.00	H

Notes:

Typical Reasons for Change in provided in the following list:

- A - Changes in Production Levels
- B - Changes in Estimation Methods
- C - Pollution Prevention Activities
- D - Changes in On-Site Treatment
- E - Changes in Disposal
- F - Changes in Off-Site Transfers for Recycling
- G - Other (specify in comments)
- H - No Significant Change (<10%) or No Change
- I - Not Applicable (First year reporting substance)