

## TRA PLAN SUMMARY - AMMONIA

### BASIC FACILITY INFORMATION

<b>Name &amp; CAS # of Substances</b>	Ammonia	NA-16
<b>Facility Identification and Site Address</b>		
<b>Company Name</b>	Mondelez Canada Inc.	
<b>Facility Name</b>	East York Bakery	
<b>Facility Address</b>	5 Bermondsey Road Toronto, Ontario M4B 2T7	
<b>Spatial Coordination of Facility</b>	636166.46m Easterly 4841355.26m Northerly	
<b>Number of Employees</b>	530	
<b>NPRI ID</b>	7248	
<b>Parent Company (PC) Information</b>		
<b>PC Name &amp; Address</b>	<b>Mondelez International</b> Three Parkway North Deerfield, Illinois 60015 USA	
<b>Percent Ownership for each PC</b>	100%	
<b>Primary North American Industrial Classification System Code (NAICS)</b>		
<b>2 Digit NAICS Code</b>	31-33 – Manufacturing	
<b>4 Digit NAICS Code</b>	3118 – Bakeries and Tortilla Manufacturing	
<b>6 Digit NAICS Code</b>	311821– Cookie and Cracker Manufacturing	
<b>Company Contact Information</b>		
<b>Facility Public Contact:</b>	Stephanie Cass, Senior Manager, Corporate and Government Affairs	2660 Matheson Boulevard East, Mississauga, ON L4W 5M2
	416-441-5249	
	Stephanie.Cass@mdlz.com	

<b>Facility Technical Contact:</b>	Anjie Davis, SSE Manager	Same as facility address
	416-701-6716	
	anjie.davis@mdlz.com	
<b>Person who Prepared the Plan: (if different from the Coordinator)</b>	Kaitlin Ryan	Conestoga-Rovers & Associates Ltd. 651 Colby Drive Waterloo, ON N2V 1C2
	kryan@croworld.com	
	519-884-0510 ext. 2283	
	Fax: 519-884-0525	
<b>Highest Ranking Employee</b>	Cheryl Gordon, Plant Manager	Same as facility address
	416-701-2413	
	cheryl.gordon@mdlz.com	
<b>Planner Information:</b>		
<b>Planner Responsible for Making Recommendations</b>	Kaitlin Ryan	Conestoga-Rovers & Associates Ltd. 651 Colby Drive Waterloo, ON N2V 1C2
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<b>Planner Responsible for Certification</b>	Kaitlin Ryan	Conestoga-Rovers & Associates Ltd. 651 Colby Drive Waterloo, ON N2V 1C2
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## **TOXIC REDUCTION POLICY STATEMENT OF INTENT**

The Mondelez Canada Inc. East York Bakery (East York Bakery) uses Ammonia in four processes as a component of two raw materials used in the production of baked goods. The Facility does not intend to reduce the use of this toxic substance at the Facility. The East York Bakery does not create ammonia; therefore this plan will not address reducing its creation.

## **REDUCTION OBJECTIVES**

The East York Bakery produces high quality products in an environmentally responsible manner. The East York Bakery's manufacturing operation has been optimized to minimize the use of raw materials. The Facility will strive to reduce the use and on-site release to air of ammonia in the future, should an option become available.

## **DESCRIPTION OF FACILITY**

The East York Bakery produces cookies, biscuits and crackers. The manufacturing process consists of mixing, machining, and shaping equipment, baking in ovens, cooling and quality control before being packaged and shipped off-site.

The North American Industry Classification System (NAICS) Code that applies to this Facility is 311821 – Cookie and Cracker Manufacturing.

In 2012, the Facility operated the manufacturing process 24 hours per day, 7 days per week for 50 weeks per year.

## TOXIC SUBSTANCE REDUCTION OPTIONS

After looking into the seven categories of toxic substance reduction options, an option was identified under the training or improved operating practices category. An explanation of why no option is available for all other categories is provided in the table below.

<i>Toxic Substance Reduction Category</i>	<i>Option: Identification and Description</i>
1) Materials or feedstock substitution	<b>No option identified:</b> The East York Bakery uses specific quantities of ingredients to manufacture final products with the desired properties. Ammonia is a commodity component of two raw materials used in the baking process. Substituting these products would compromise the product characteristics and quality of the products and therefore would require extensive testing and analysis from the Research and Development Department. Material or feedstock substitutions are not currently possible for East York Bakery's production.
2) Product design or reformulation	<b>No option identified:</b> East York Bakery's formulation for the production of baked goods is based on past research, trialing and analysis used to create products which appeal to their customers. These products include the use of ammonia as a component of two raw materials. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3) Equipment or Process Modification	<b>No option identified:</b> The existing ovens operate at specific set parameters to manufacture the desired products. The chemical breakdown of the emissions from the ovens is currently unknown. Therefore, there are no process modification options available to be made which would result in a reduction in the use of ammonia. Equipment or process modifications aimed to reduce the use of ammonia are not possible.

*Toxic Substance Reduction Category*

*Option: Identification and Description*

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| 4) Spill and Leak prevention                             | <b>No option identified:</b> The products received at the Facility that contain ammonia arrive in the form of a powder. East York has operational procedure documents to avoid spillage of raw materials. The products are mixed with water and evaporated in the oven, eliminating any chance of spills or leaks from the mixing or baking operations. There are no options available in the spill and leak prevention category.  |
| 5) On-site reuse or recycling                            | <b>No option identified:</b> All off-spec dough is shipped off-site for animal feed. Dough that is determined to be off-spec cannot be reused at the Facility. All ammonia-containing raw materials are used for production and there are no opportunities throughout the production process to reuse or recycle materials containing ammonia. Whenever possible, re-worked dough is fed back into the mixes.  |
| 6) Improve inventory management or purchasing techniques | <p><b>No option identified:</b> East York Bakery uses a database management system which is a daily accounting computer system used to track quantities of products being received on site according to production demands. The production schedule is known for a minimum of two weeks in advance, therefore no surplus storage exists at the Facility.</p> <p>The Facility is unable to identify a reduction option related to improved inventory management or purchasing techniques, as they are already doing everything possible in this category.</p> |
| 7) Training or improved operating practices              | <b>Option identified:</b> The Facility uses equipment maintenance programs, performs regular line reviews including monitoring and measuring practices and focused improvement teams utilizing Six Sigma methodology to ensure efficient operating practices. This continual focus is aimed to result in improved operational efficiency and limiting off-spec products by 2 percent.  |

Estimates of the amount by which each identified option would reduce the use, creation, discharges to air, land and water and the amount contained in product (leaving the Facility) are presented below

#### Estimate for the Reduction of Ammonia as the Result of Options

7) Training or improved operating practices	<b>Option 1:</b> The Facility will use equipment maintenance programs and regular line reviews to ensure efficient operating practices. This includes monitoring and measuring and utilizing six sigma tools to understand performance issues and to continuously improve.	<p>The East York Bakery has targeted reducing overall waste produced from off-spec products by 2 percent for 2014. This reduction will be a result of improved operating practices through the six sigma methodology.</p> <ul style="list-style-type: none"> <li>• Reduction in usage: <b>353.2 kg/yr (2 percent)</b></li> <li>• Reduction in release to air: <b>353.2 kg/yr (2 percent)</b></li> </ul> <p><b>Example Calculation:</b></p> <ul style="list-style-type: none"> <li>• Annual amount of ammonia used at the Facility in 2012: 17,662.1 kg/year</li> <li>• Percentage reduction in ammonia used (assumed to be equal to percentage reduction in ammonia released to air): 2 percent</li> <li>• Reduction in ammonia used: = <b>353.2 kg/year</b></li> <li>• Reduction in ammonia released to air = <b>353.2 kg/year</b></li> </ul>
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The technical feasibility for the identified option is presented below

#### Technical Feasibility of Option

<i>Toxic Substance Reduction Category</i>	<i>Option</i>	<i>Technical Feasibility</i>
7) Training or improved operating practices	<b>Option 1:</b> The Facility will use equipment maintenance programs and regular line reviews to ensure efficient operating practices. This includes monitoring and measuring and utilizing six sigma tools to understand performance issues and to continuously improve.	<b>Feasible</b>

The economic feasibility of the options determined to be technically feasible including the associated cost calculations are presented in the table above. A comparison summary and cost assessment for each option, as well as anticipated payback periods are presented in the following table.

#### Economic Feasibility of Options

<i>Toxic Substance Reduction Category</i>	<i>Option</i>	<i>Economic Feasibility</i>
7) Training or improved operating practices	<b>Option 1:</b> The Facility will use equipment maintenance programs and regular line reviews to ensure efficient operating practices. This includes monitoring and measuring and utilizing six sigma tools to understand performance issues and to continuously improve.	<b>Total Capital Cost:</b> \$0 <b>Total Employee Efforts Cost:</b> \$42,400  <b>Anticipated Savings:</b> \$1,100,000  <b>Anticipated payback period:</b> Employee Cost/Anticipated Saving = \$42,400/\$1,100,000 = 0.039 years  <b>Result:</b> This option is economically feasible.

#### Options that are Both Technically and Economically Feasible

<i>Toxic Substance Reduction Category</i>	<i>Option</i>
7 Training or improved operating practices	<b>Option 1:</b> The Facility will use equipment maintenance programs and regular line reviews to ensure efficient operating practices. This includes monitoring and measuring and utilizing six sigma tools to understand performance issues and to continuously improve.

#### IMPLEMENTATION OF OPTIONS FOR REDUCTION OF THE USE OF AMMONIA AT THE FACILITY

To reduce the use of ammonia at the Facility, the East York Bakery intends to implement the technically and economically feasible option.

#### Description and Timetable for Implementation of Steps for Option 1

<i>Step</i>	<i>Description</i>	<i>Estimated Timelines</i>
1	Train all employees	Starting January 2013

2	Auditing on a monthly basis to ensure procedures are being followed	Monthly, ongoing
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#### **Estimate of Reduction of Ammonia by the Implementation of Option 1**

<i>Type</i>	<i>Estimated Reductions</i>	<i>Anticipated Dates for Achieving Reductions</i>
Use	353.2 kg/year	End of Q4 2014 - Ongoing
Release to Air	353.2kg/year	End of Q4 2014 - Ongoing

#### **PLAN SUMMARY STATEMENT**

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

#### **CERTIFICATION BY HIGHEST RANKING EMPLOYEE**

Attached.

#### **CERTIFICATION BY LICENSED PLANNER**

Attached.



**Section 2.0 Plan Certification****CERTIFICATION BY HIGHEST RANKING EMPLOYEE**

As of December 15<sup>th</sup>, 2013, I, Cheryl Gordon, 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.

Ammonia



Cheryl Gordon  
Plant Manager  
Mondelez Canada Inc., East York Bakery

**CERTIFICATION BY LICENSED PLANNER**

As of December 15<sup>th</sup>, 2013, I, Kaitlin Ryan, certify that I am familiar with the processes at Mondelez Canada Inc. 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 15, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Ammonia



Kaitlin Ryan  
Licensed Toxic Reduction Planner, License # TSRP0009  
Conestoga-Rovers & Associates Ltd.