Record of Consultation
Consultation Summary Report:
Environmental Compliance Approval for use of Low-Carbon Alternative Fuel at the St. Marys Cement Plant, Bowmanville, Ontario

Public Open House, March 5, 2014
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1 Introduction and Background

1.1 Purpose of the Report
The purpose of this report is to provide a summary of the consultation and engagement activities carried out by St. Marys Cement to support and prepare their application (Environmental Compliance Approval) to the Ministry of the Environment to permit the regular use of up to 100 tonnes per day of alternative (low-carbon) fuel at the Bowmanville Cement Plant. This report highlights the consultation activities carried out for the initiation and introduction of the application.

Communication and public engagement are a way of raising awareness, understanding and acceptance of the need, importance and overall benefits of the Project, while engaging audiences to actively comment and participate in various phases of the process. Effective communications are necessary to build trust and confidence in the Project generally and to ensure successful development, construction and operation of the proposed Project.

The following report highlights the initial communications and engagement activities that have been carried out during preliminary Project planning up to the first Public Open House held March 5, 2014 in Bowmanville, Ontario.

1.2 Overview of Consultation and Engagement
Examples of consultation activities carried out included:

- Development of agency / stakeholder mailing list (Appendix A);  
- Agency Letters of Support (Appendix B)  
- Engagement with local, provincial and federal agencies through meetings emails and telephone calls (Table 1);  
- Canada Post direct admail campaign within 3km of the site (Appendix C)  
- Advertisements in the newspaper including news releases and Notice of Public Open House (Appendix D); and,  
- Public Open House #1 (March 5th, 2013) (Appendix E);  
- Development of Project FAQs (Appendix F);  
- Posting of information items on the project website; and  
- Development of a Communications Tracking Database.

2 Consultation with Agencies and Organizations

2.1 Notification
An agency / stakeholder database was developed based on ministry requirements as outlined in the MOE’s “Guide to Applying for an Environmental Compliance Approval” (“the Guide”) as well previous notifications carried out for similar approvals amendments. The contact database is included in Appendix A and included contacts from the following agencies:
• Ministry of Environment
• Region of Durham
• Region of Dirham Public Health Department
• Municipality of Clarington
• Central Lake Ontario Conservation Authority

The *Notice of Public Open House* was electronically mailed to all the agencies on the contact list the week of February 17th, 2014. Agency notification materials including the contact list and *Notice* are included in Appendix A.

### 2.2 Meetings

St. Marys Cement met with the following agencies and organizations outlined in Table 1 to introduce the proposed project, solicit input and answer potential questions.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Consultation Method/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of the Environment</td>
<td>Several phone calls and emails</td>
</tr>
<tr>
<td></td>
<td>Meeting on December 11, 2013</td>
</tr>
<tr>
<td>Regional Municipality of Durham Council</td>
<td>Presentation to the Region by the Durham Region Roundtable on Climate Change regarding the Low Carbon Fuels project</td>
</tr>
<tr>
<td>Durham Region Roundtable on Climate Change (DRRCC)</td>
<td>Presentation to DRRCC on October 11, 2013</td>
</tr>
<tr>
<td>Town of Clarington</td>
<td>Presentation to Council, March 17, 2014</td>
</tr>
<tr>
<td>Premiere Wynn and Staff</td>
<td>October 3, 2013, discussions during the Clarington Board of Trade Luncheon</td>
</tr>
<tr>
<td>MPP John O’Toole</td>
<td>Continuous communication about all projects at the plant</td>
</tr>
<tr>
<td>Bowmanville Cement Plant Community Relations Committee</td>
<td>Fuels discussions have been continuous and ongoing with the committee since 2010</td>
</tr>
</tbody>
</table>

### 2.3 Summary of Agency Comments/Issues

Letters of support for the proposed regular use of low-carbon alternative fuel were received from both the Region of Durham and the Municipality of Clarington (copies provided in Appendix B).
The November 14, 2013 letter of support from Durham Regional Council outlines resolutions adopted on October 31, 2013 including:

a) THAT the Regional Chair provide a letter of support to Mr. Martin Vroegh, Director of Environmental Affairs, St. Marys Cement and Votorantim Cement North America; and

b) THAT Council Correspondence CC 128 from Mr. Martin Vroegh be referred to the Municipality of Clarington Council.

On December 6, 2013 a letter of support was also received from the Municipality of Clarington outlining its support as resolved during December 2, 2013 Council Meeting.

To date, no other comments from agencies have been received.

3 Public Consultation

3.1 Public Open House

3.1.1 Public Notification
Agencies, stakeholders, and the public, including local residents and businesses) were notified via the *Notice of Public Open House* (“the Notice”). The Notice was sent via direct admial (CanadaPost) and through two advertisements in the local newspaper.

The Notice was sent direct admial via CanadaPost to a total of 4,117 residents and businesses living within approximately 3 km radius of the St. Marys Cement Bowmanville Plant on February 13th. The CanadaPost admial report is included in Appendix C.

The Notice was also placed in the Clarington This Week Newspaper for two consecutive weeks including Wednesday February 19th and Thursday February 26th. This is a local newspaper distributed within Clarington to residents in the surrounding communities including Clarington communities of Courtice, Bowmanville, Orono, Hampton and Newcastle. The newspaper is circulated to approximately 24,550 homes each week. Proofs of the advertisement can be viewed in Appendix D.

3.1.2 Date, Time and Location
The Public Open House took place on March 5th at the Clarington Beech Centre located at 26 Beech Ave in Bowmanville Ontario between 5:00pm and 9:00pm.

3.1.3 Format and Information Presented
The format of the Public Open House session was a drop in style displaying 15 large poster boards with project information allowing the attendees to review the information at their own pace and engage project team members when they had questions. Appendix E includes copies of the Open House presentation boards). Members from the project team (including representatives from St. Marys
Cement, HDR Inc, and BCX Environmental) were situated around the room to answer questions or address comments as necessary. The information presented included:

- Introduction / Welcome
- Project Objectives;
- Overview of the ECA Approvals Application;
- Description and Characteristics of the Alternative Fuel;
- Handling and Preparation of the Alternative Fuel
- Site Drawing of the Bowmanville Plant and the Location of New Structures;
- Alternative Fuel Feed System;
- Alternative Fuel Quality;
- Information on Air Emissions and Emission Control;
- Overview of Successful Demonstration at the St Marys Ontario Plant; and,
- Contact Information.

Upon entry to the Open House, attendees were directed to a sign-in table when they were requested to provide their contact information and offered project information including:

- A Comment Form enabling attendees to write down their comments and questions for the Project team to respond. (Appendix F);
- A Frequently Asked Questions (FAQ) sheet (Appendix F); and,
- A copy of the Public Open House presentation panels in booklet form (Appendix E).

There were also tables set up throughout the room for attendees to sit down and fill out comment forms or discuss issues with team members. There was a table with a monitor set-up to present a key fact slideshow (Appendix F). Samples of the alternative fuel were also made available for viewing on the table. In addition, a Comment Box was made available for attendees to leave their comment sheets.

3.1.4 Attendance
The Public Open House was well attended with a total of 27 people. Two comment forms were deposited in the comment box. One resident also deposited a photocopy of two newspaper articles discussing the cement industry and fuel sources. The resident requested a response be sent to discuss these articles.

3.1.5 Summary of Public Comments/Issues
Two comment forms were deposited during the Public Open House on March 5th 2013 and four additional comments were received via email between March 5th and the deadline of March 26th, 2014. Generally, the comments were inquisitive in nature with approximately two respondents noting concern and disagreement with the proposal. Comments included requests for more information regarding the proposed project as well as questions regarding the operations of the St. Marys Cement Bowmanville
plant and activities. Table 2 highlights the general comments and responses as received from and discussed with attendees at March 5, 2013 Public Open House.
Table 2: Summary of Issues/Comments from the Public Open House on March 5th, 2014

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **1.** | St Marys Cement is seeking to use low carbon alternative fuel (woody biomass) as the use of this alternative fuel provides an opportunity to reduce emissions of greenhouse gases. Use of alternative fuels is recognized as a best practice world-wide, as a means of reducing the environmental footprint of cement making. The proposed use of the woody biomass fuel will redirect a material away from landfill disposal to a beneficial use, consuming minimal new resources.  

The news article refers to the use of grown biomass for fuel. Switching fuel use from fossil fuels to purpose grown biomass materials such as those referred to in the news article provided would require significant consumption of agricultural land and resources to grow such a crop. For example, should the plant switch from use of petroleum coke to 100% switch grass fuel, in the order of 425,000 tonnes of switchgrass would be required. Based on an average crop yield of 25 tonnes per acre\(^1\), in the order of 17,000 hectares (e.g., roughly 25%-30% the size of Clarington) of land would be required to grow such a crop along with consumption of fossil fuels, fertilizer and other materials such as herbicides and pesticides.  

The news article also refers to the use of alternative raw materials such as flyash and slag in the cement making process. St Marys Cement already strives to source and use suitable materials such as these in the cement ‘recipe’ at the Bowmanville Plant and its other facilities.  

References:  

1 http://www.reap-canada.com/online_library/grass_pellets/2007%20SG%20production%20guide-FINAL.pdf | A news article was provided that discusses substantially reducing all pollutants from a cement plant by using new formulas and techniques for cement making, suggesting that this was the direction St Marys Cement should be taking. |
<table>
<thead>
<tr>
<th>2.</th>
<th>The proposal to burn garbage and thus reduce nitrous oxides and sulphur dioxides, but increase toxic metals and other toxins in the emissions and the finished cement is not OK with me. It answers the wrong question. Reduce all pollutants rather than handing people an unacceptable trade-off pollutants.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Increasing emissions of such things as mercury, dioxins and furans even in small amounts is not OK. These are some of the deadliest known toxins. Things like mercury are not incorporated into the cement and are persistent and cumulative in the environment and living things. In addition, increasing the content of toxic metals in the cement increases the eventual uncontrolled release of these persistent, cumulative toxins into the environment and into us when the cement used in structures eventually starts to decay or is demolished. You presented no study data on these contamination pathways at all.</td>
</tr>
<tr>
<td>4.</td>
<td>You insist that the toxic emissions are going to be small and within government guidelines but I think the government is not taking into consideration public health or the long-term effects of these contaminants.</td>
</tr>
<tr>
<td></td>
<td>The use of low carbon alternative fuel (woody biomass) is not expected to result in any statistically significant increase in emissions of trace metals or other parameters including mercury, dioxins and furans to the air, or to the concentration of metals in the cement product. Off-site concentrations of trace metals and organic chemicals in the air will continue to be below their respective current and future MOE Point of Impingement Limits. A detailed table indicating the potential changes (not statistically significant) in metals emissions and maximum off-site concentrations is appended to this document. There will be no statistically significant change in the trace metal content of the cement produced by the plant. The trace metal content of cement is dominated by the trace metal content of the plant's raw materials such as limestone and silica (sand). The use of woody biomass will make up less than 1% of the total mass input into the kiln. No study data regarding releases of any parameters from cement into the environment was presented, as no changes to the quality (i.e., from a construction and/or chemical composition standpoint) of the cement product are predicted.</td>
</tr>
<tr>
<td></td>
<td>The standards and point of impingement limits set out in Ontario Regulation 419 impose a requirement to meet acceptable effects-based levels in air, based on consideration of health and environmental</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.</td>
<td>You have also not discussed the increased use of electricity (a publicly subsidized resource) in the processing of the garbage fuel.</td>
</tr>
<tr>
<td></td>
<td>The low carbon alternative fuel will be substituted for a portion of the petroleum coke used to fuel the cement making process. SMC has calculated that the energy input for required for preparing the alternative fuel will be at most equal to that required to process the petroleum coke that would otherwise be used. The transport energy requirements to transport the wood biomass would be at most equal to that required to transport the petroleum coke that would otherwise be used.</td>
</tr>
<tr>
<td>6.</td>
<td>While St Marys Cement identifies potential benefits of burning this alternative fuel such as a reduction of greenhouse gas emissions, reduction of non-renewable fossil fuel consumption and combustion use of materials that would be landfilled, St Marys has failed to adequately identify the potential detriments and risks to the environment and human health and have failed to provide evidence that such practice would be safe.</td>
</tr>
<tr>
<td></td>
<td>No detriments and risks to the environment and human health associated with the use of low carbon alternative fuel at the Bowmanville Cement Plant have been identified. Off-site concentrations of trace metals and organic chemicals in the air will continue to be below their respective current and future MOE Point of Impingement Limits. No statistically significant changes to air emissions or concentrations of metals in the cement product are expected with the use of the proposed low carbon alternative fuel. Levels of Dioxins and Furans are not expected to increase as a result of use of alternative fuel. The kiln system is designed to minimize the potential for dioxin and furan formation regardless of fuel type. No change to plant dust and odour emissions are expected as the alternative fuel will always be enclosed either on the truck delivering the fuel or inside the fuel building. The potential change in truck traffic accessing the site is expected to be minimal, in the order of 1.1 to 1.2%. A detailed Acoustic Assessment Report (AAR) has been updated to include the proposed changes associated with the use of alternative fuel and concludes that sound emissions from the Cement Plant will be within the applicable sound level limits as set out by the MOE. Health authorities in other countries have looked very carefully at the use of alternative fuels. Environmental and public health authorities, from the US Environmental Protection Agency to the UK Health Protection Agency, have routinely concluded that the co-processing of alternative fuels in cement manufacturing does not increase risk to the environment, or to public health.</td>
</tr>
</tbody>
</table>
7. While some greenhouse gas emissions may be reduced, there is potential for greater emissions of other pollutants, highly toxic ones such as heavy metals and persistent organic pollutants (POPs) which include dioxins. Would this project be in contravention of the Stockholm Convention which set to reduce the emission of POPs?

The use of low carbon alternative fuel (woody biomass) is not expected to result in any statistically significant increase in emissions of trace metals or other parameters including mercury, dioxins and furans to the air. Off-site concentrations of trace metals and organic chemicals in the air will continue to be below their respective current and future MOE Point of Impingement Limits. This project would not be in contravention of the Stockholm Convention.

8. Insufficient and infrequent screening/monitoring of the alternative fuel cannot ensure that the alternative fuel composition would not vary and include greater amounts of toxic metals and other compounds than what was modeled. More details need to be provided on the processing of the fuel done by the supplier and the processing that would be done on site.

St Marys Cement will implement an approach for monitoring alternative fuel quality that is consistent with the approach that has been used successfully to monitor the use of adjunct fuels currently used in the cement making process. This is necessary not only to address potential changes in emissions, but to ensure that the use of the proposed low carbon alternative fuel does not have an effect on the cement plant itself and the cement product. Information was presented at the Open House regarding the fuel preparation and fuel feed system that would be installed for the low carbon alternative fuel. The fuel will be size reduced to ensure a homogenous stream of appropriately sized material before being fed into the fuel delivery system.

In regards to the alternative fuel including treated wood, St Marys' approach for screening of the alternative fuel will be consistent with the National Strategy for the Management of Post-use Preservative Treated Wood. The cement manufacturing process is capable of processing creosote and PCP treated wood, and restricted amounts of other pressure treated wood (CCA, AZCA, ACQ and CA). The C&D material will be screened to remove pressure treated wood materials containing copper or arsenic (CCA, AZCA, ACQ and CA wood treatments), less than 5% of the total woody biomass materials would consist of treated wood.

The construction and demolition waste processors which will provide the alternative fuel would be required to have valid Environmental Compliance Approvals (ECA) and in accordance with the ECA and provincial regulations would be required to comply with provincial requirements to separate and manage asbestos waste and hazardous materials.

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1 Environment Canada, Industrial Treated Wood Users Guidance Document, September 2004
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>9.</strong></td>
<td>While there were some jars of &quot;woody biomass&quot; available at the Open House to look at, there was not scientific analysis or breakdown of the various components of the alternative fuel by mass (nor volume). That should be provided as well as a comprehensive list of all of the compounds that COULD be found in the alternative fuel.</td>
</tr>
<tr>
<td></td>
<td>A detailed compositional analysis was completed and input to the air modeling that has been completed, the results of which were discussed at the Open House. This table is provided in Appendix G, and will be included in the Environmental Compliance Approval application package. Note: the focus in the compositional analysis was on the elemental parameters such as metals, chlorine and carbon that would remain after the fuel is introduced into the kiln at over 2000 °C. At these temperatures, any compounds (organic or inorganic) in the alternative fuel itself would be completely destroyed. As such specific compounds in the fuel were not specifically tested.</td>
</tr>
<tr>
<td><strong>10.</strong></td>
<td>What are the limitations of the modeling? Where can the public find the modeling inputs, assumptions and list of chemicals analyzed? Was the modeling peer-reviewed? With what confidence does St. Marys predict their results (i.e. confidence interval)?</td>
</tr>
<tr>
<td></td>
<td>The air modeling completed for the low carbon alternative fuel (woody biomass) ECA application will be included in the application package for review by the Ministry of the Environment. Additional details regarding the air modeling will be made available on-line. The air modeling has been completed using the MOE approved US EPA AERMOD system and site specific meteorological data provided by the MOE. An extensive suite of metals and organic compounds were modeled. This suite included all of the contaminants (metals, PAHs, D&amp;F, VOCs CACs, HCl and NH3) assessed in Bomanville’s MOE approved stack test as well as additional contaminants drawn from the US EPA AP-42 for wood-fired combustors. The maximum emission rate was modeled for each contaminant. The model set up for the plant has been previously reviewed and approved by the MOE and no changes were made to this approved model set up. St. Marys is confident that the model results are very conservative and actual emissions and off-site concentrations will be lower than predicted. A detailed table indicating the potential changes (not statistically significant) in metals emissions and maximum off-site concentrations is provided in Appendix G.</td>
</tr>
<tr>
<td><strong>11.</strong></td>
<td>More details need to be provided with regards to the research studies. Were there studies which indicated potential problems and risks associated with burning pressure treated woods, lead paints and other alternative fuels? There are countries and jurisdictions which ban the</td>
</tr>
<tr>
<td></td>
<td>In regards to the alternative fuel including treated wood, St Marys' approach for screening of the alternative fuel will be consistent with the National Strategy for the Management of Post-use Preservative Treated Wood. The cement manufacturing process is capable of processing creosote and PCP treated wood, and restricted amounts of other pressure treated wood (CCA, AZCA, ACQ and CA). The C&amp;D material will be screened to remove pressure treated wood materials containing copper or</td>
</tr>
</tbody>
</table>

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2 Environment Canada, Industrial Treated Wood Users Guidance Document, September 2004
| burning of alternative fuels such as this. Can you please provide information about the countries, states or unions which prohibit such alternative fuel. | arsenic (CCA, AZCA, ACQ and CA wood treatments), less than 5% of the total woody biomass materials would consist of treated wood. The National Strategy is consistent with the approach used in other jurisdictions.

The alternative fuel testing will include testing for the presence of various trace metals including lead. The construction and demolition waste processors which will provide the alternative fuel would be required to have valid Environmental Compliance Approvals (ECA) and in accordance with the ECA and provincial regulations would be required to comply with requirements to separate and manage asbestos waste and hazardous materials.

A list of studies regarding the use of alternative fuels was provided within the slide show made available at the Open House. These include:

- Cembureau: The Sustainable Use Of Alternative Resources In The European Cement Industry, September 2004
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12.</strong></td>
<td>With these new low carbon alternative fuels being used at Saint Marys cement, will there be measures to screen or filter the burnt waste considering construction and demolition waste can contain asbestos?</td>
</tr>
<tr>
<td></td>
<td>The low-carbon alternative fuel is a woody biomass derived from industrial and post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently disposed in landfills. Initial processing of the fuel would be undertaken offsite by the fuel supplier. This would include screening of incoming materials and removal of non-acceptable materials, such as asbestos, in accordance with regulated asbestos disposal requirements. In terms of screening or filtering burnt waste or ash, the cement production process does not generate ash for disposal. Any 'ash' that would remain from the consumption of the woody biomass fuel would be the mineral content in the fuel that will not burn like, calcium and silica. This material is incorporated into the cement product.</td>
</tr>
<tr>
<td><strong>13.</strong></td>
<td>Explain why the plume from the Bowmanville Plant is sometimes visible and/or different colours?</td>
</tr>
<tr>
<td></td>
<td>In order to produce a high quality, consistent cement product, the Bowmanville Cement Plant must have steady operations using raw material and fuels that are tested and monitored to meet specific tolerance levels. As a result, the emissions from the stack at the Bowmanville Cement Plant are very consistent every hour of every day (excepting plant shut-downs). The plume from the Bowmanville cement plant is primarily made up of moisture with some particulate (within regulated limits). Variation in the visibility and colour of the plume from the stack at the Bowmanville plant is related to the climatic conditions (such as temperature, wind direction and speed and background) and the light (including sun angle and lighting conditions). The plume typically becomes more visible when moisture in the plume or ambient air condenses on particulate in the kiln exhaust to form water droplets. If the water droplets are large enough, the droplets will scatter light. Even scattering of light results in the plume looking white (similar to why a cloud will look white). If the climatic conditions are such that the density of the water droplets in the plume is high, light is not scattered evenly (i.e. the rainbow effect). In this case the plume can appear grey or darker in colour (similar to how a cloud can look dark or grey). Sunlight at different angles to the plume (morning, afternoon etc.), can also shift the observers perception of the colour/luminescence of the plume against the background colour of the sky.</td>
</tr>
<tr>
<td><strong>14.</strong></td>
<td>When is the annual Plant shut-down for 2014?</td>
</tr>
<tr>
<td></td>
<td>The Bowmanville Plant Shutdown for 2014 was from March 1 to March 24. Shutdowns are usually for 3 weeks more or less, usually around February to March/April depending on the demand for cement and product inventories.</td>
</tr>
<tr>
<td></td>
<td>I would be interested in receiving a copy of the air emissions and dispersion report which I understand will be in your submission for application. Thank you for your presentation and work towards the study.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Your letter stated the potential benefits of using the proposed low carbon biomass fuel. What are the potential non-beneficial aspects of its use? Is there potential harm to citizens/human beings from this fuel and if so what are they?</td>
</tr>
<tr>
<td></td>
<td>With these new low carbon alternative fuels being used at St Mary’s Cement. Will there be measures to screen or filter the burnt waste? Considering construction and demolition waste can contain asbestos.</td>
</tr>
<tr>
<td>18.</td>
<td><strong>Your letter stated the potential benefits of using the proposed low carbon biomass fuel. What are the potential non-beneficial aspects of its use? Is there potential harm to citizens/human beings from this fuel and if so what are they?</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td><strong>No potential harm to the environment and human health associated with the use of low carbon alternative fuel at the Bowmanville Cement Plant has been identified. Off-site concentrations of trace metals and organic chemicals in the air will continue be below their respective current and future MOE Point of Impingement Limits. No statistically significant changes to air emissions or concentrations of metals in the cement product are expected with the use of the proposed low carbon alternative fuel. Levels of Dioxins and Furans are not expected to increase as a result of use of alternative fuel. The kiln system is designed to minimize the potential for dioxin and furan formation regardless of fuel type. No change to plant dust and odour emissions are expected as the alternative fuel will always be enclosed either on the truck delivering the fuel or inside the fuel building. The potential change in truck traffic accessing the site is expected to be minimal, in the order of 1.1 to 1.2%. A detailed Acoustic Assessment Report (AAR) has been updated to include the proposed changes associated with the use of alternative fuel and concludes that sound emissions from the Cement Plant will be within the applicable sound level limits as set out by the MOE. Health authorities in other countries have looked very carefully at the use of alternative fuels. Environmental and public health authorities, from the US Environmental Protection Agency to the UK Health Protection Agency, have routinely concluded that the co-processing of alternative fuels in cement manufacturing does not increase risk to the environment, or to public health.</strong></td>
</tr>
</tbody>
</table>
Appendix A

- Agency / Stakeholder Contact List
- Notice of Public Open House
<table>
<thead>
<tr>
<th>Region</th>
<th>County</th>
<th>Township</th>
<th>Name</th>
<th>Address 1</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>Municipality of Chatham</td>
<td>Council - Ward 1</td>
<td>Joe</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:joe@chatham.ca">joe@chatham.ca</a></td>
</tr>
<tr>
<td>Municipal</td>
<td>Municipality of Chatham</td>
<td>Council - Ward 2</td>
<td>Ron</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:ron@chatham.ca">ron@chatham.ca</a></td>
</tr>
<tr>
<td>Municipal</td>
<td>Municipality of Chatham</td>
<td>Council - Ward 4</td>
<td>Mary</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:mary@chatham.ca">mary@chatham.ca</a></td>
</tr>
<tr>
<td>Municipal</td>
<td>Municipality of Chatham</td>
<td>Planning</td>
<td>John</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:john@chatham.ca">john@chatham.ca</a></td>
</tr>
<tr>
<td>Provincial</td>
<td>Central Lake Ontario Conservation Authority (CLLOCA)</td>
<td>Administrative Office</td>
<td>Claire</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:claire@clloca.ca">claire@clloca.ca</a></td>
</tr>
<tr>
<td>Provincial</td>
<td>Ministry of Environment</td>
<td>Environmental Approaches Branch</td>
<td>Dave</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:dave@minenv.ca">dave@minenv.ca</a></td>
</tr>
<tr>
<td>Provincial</td>
<td>Ministry of Environment</td>
<td>Environmental Approaches Branch</td>
<td>Joanne</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:joanne@minenv.ca">joanne@minenv.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Water Services</td>
<td>Mike</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:mike@durhamwater.ca">mike@durhamwater.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Roger</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:roger@regionofdurham.ca">roger@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Brian</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:brian@regionofdurham.ca">brian@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Terry</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:terry@regionofdurham.ca">terry@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>John</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:john@regionofdurham.ca">john@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Bob</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:bob@regionofdurham.ca">bob@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Mary</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:mary@regionofdurham.ca">mary@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Mike</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:mike@regionofdurham.ca">mike@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Joe</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:joe@regionofdurham.ca">joe@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Dan</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:dan@regionofdurham.ca">dan@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Jerry</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:jerry@regionofdurham.ca">jerry@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Council</td>
<td>Don</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:don@regionofdurham.ca">don@regionofdurham.ca</a></td>
</tr>
<tr>
<td>Regional</td>
<td>Region of Durham</td>
<td>Public Health Department Office</td>
<td>Dr. Robert</td>
<td>46 Temple Ave.</td>
<td>506-629-3492</td>
<td><a href="mailto:robert@regionofdurham.ca">robert@regionofdurham.ca</a></td>
</tr>
</tbody>
</table>
NOTICE OF PUBLIC OPEN HOUSE
LOW-CARBON ALTERNATIVE FUEL
BOWMANVILLE CEMENT PLANT

St. Marys Cement is preparing an application (Environmental Compliance Approval) to the Ministry of the Environment to permit the regular use of up to 100 tonnes per day of alternative (low-carbon) fuel at the Bowmanville Cement Plant. The alternative (low carbon) fuel would substitute for a portion of the existing fossil fuel used at the plant. The proposed low carbon fuel is wood biomass, derived from industrial and post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently landfill disposed.

St. Marys has identified some potential benefits to using the proposed low-carbon biomass fuel including:
- providing a viable use for material that would otherwise be landfilled;
- a significant reduction in the use of non-renewable fossil fuels; and,
- a significant reduction in greenhouse gas emissions of up to 167,000 tonnes annually.

<table>
<thead>
<tr>
<th>St. Marys is hosting a public open house, to provide you an opportunity to review information regarding the proposed use of alternative low-carbon fuel and to speak directly with the project team members.</th>
<th>Date: March 5th, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time:</td>
<td>5:00pm to 9:00pm</td>
</tr>
<tr>
<td>Location: The Clarington Beech Centre 26 Beech Avenue, Bowmanville, ON</td>
<td></td>
</tr>
</tbody>
</table>

Your input is important and the submission of comments or questions is encouraged. Comments or questions may be submitted via the project website at http://www.stmaryscement.com, or by contacting the following project team members:

**Ruben Plaza**
Environmental Manager
St Marys Cement
400 Waverley Road South, Bowmanville, ON L1C 3K3
JRPlaza@vcsmc.com
T: 905-623-3341 ext. 242

**Janine Ralph**
Project Manager
HDR Corporation
100 York Blvd, Suite 300, Richmond Hill On, L4B 1J8
Janine.Ralph@hdrinc.com
T: 905-380-8568

Under the Freedom of Information and Protection of Privacy Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this Project and will be released, if requested, to any person.
Appendix B

- Agency Letters of Support
November 14, 2013

Mr. Martin Vroegh  
Director of Environmental Affairs  
St. Marys Cement and Votorantim  
Cement North America  
400 Waverly Road South  
Bowmanville, Ontario  
L1C 3K3

Dear Mr. Vroegh:

At a meeting held on October 30th, 2013, Regional Council adopted the following resolution:

"a) THAT the Regional Chair provide a letter of support to Mr. Martin Vroegh, Director of Environmental Affairs, St. Marys Cement and Votorantim Cement North America; and

b) THAT Council Correspondence CC 128 from Mr. Martin Vroegh be referred to the Municipality of Clarington Council."

We understand that St. Marys Cement is developing an application for the Environmental Compliance Approval in order to substitute alternative (low carbon) fuel for conventional fuel (petroleum coke). The substitution will involve using up to 100 tonnes per day of wood biomass as an alternative to fossil fuel at the Bowmanville cement plant.

We recognize that the use of wood biomass as an alternative to fossil fuel at the St. Marys Cement, Bowmanville cement plant would help reduce greenhouse gas emissions in the Region. On behalf of Regional Council, I am writing to lend our support to this application.

We look forward to continued dialogue with St. Marys Cement over the course of this project.

Yours truly,

Roger Anderson  
Regional Chair and CEO

C: P. Barrie, Clerk, Municipality of Clarington  
D. Bowen, Regional Clerk/Director of Legislative Services
December 6, 2013

Mr. Martin Vroegh
Director of Environmental Affairs
St. Marys Cement and Votorantim Cement North America
400 Waverly Road
Bowmanville, ON L1C 3K3

Dear Martin:

RE: ST. MARYS CEMENT BOWMANVILLE PLANT – APPLICATION FOR ENVIRONMENTAL COMPLIANCE APPROVAL (WASTE AND AIR) FOR LOW CARBON/WOOD BIOMASS FUEL

At its meeting of December 2, 2013, the Council of the Municipality of Clarington considered correspondence from the Durham Region Roundtable on Climate Change and from St. Marys Cement regarding St. Marys’ proposed application for an Environmental Compliance Approval to substitute alternative (low carbon) fuel for conventional fuel at its Bowmanville plant. Council resolved to forward a letter to St. Marys Cement in support of its application.

St. Marys is proposing to use up to 100 tonnes per day of wood biomass derived from industrial and post-consumer sources in place of petroleum coke at its Bowmanville plant. This could potentially reduce overall greenhouse gas emissions, through both direct and indirect means, by approximately 167,000 tonnes per year.

On behalf of Council, I am pleased to provide the support of the Municipality of Clarington to St. Marys application for an Environmental Compliance Approval to permit the use of wood biomass-derived alternative fuel in place of conventional fuel at its Bowmanville Cement plant.

Sincerely yours,

Adrian Foster
MAYOR

Cc: Members of Council
    David Crome, Director of Planning
    Janice Szwarz, Senior Planning, Special Projects

CORPORATION OF THE MUNICIPALITY OF CLARINGTON
40 TEMPERANCE STREET, BOWMANVILLE, ONTARIO L1C 3A8 T (905) 623-3379 F (905) 623-2582
e-mail - mayor@clarington.net
Appendix C

- Canada Post Direct Admail Distribution Report
Your Targeting Report

Mailing Campaign Details

02-13-2014

Mailing ID IAAPT19348604347588

Thank you for taking advantage of our targeting service - a one stop solution designed to help you get the most out of your direct mail campaigns.

- Anonymous Precision Targeter users will have their reports saved and accessible for 30 days from the day the report has been generated.
- Signed-In Precision Targeter users will have their reports saved and accessible for 13 months from the day the report has been generated.

Inside, find comprehensive insight into your selected trade area, including:

<table>
<thead>
<tr>
<th>Address Attributes</th>
<th>Houses, Apartments, Farms and Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Mail Pieces</td>
<td>4117</td>
</tr>
<tr>
<td>Urban/Rural</td>
<td>All</td>
</tr>
<tr>
<td>Estimated Delivery Cost</td>
<td>$680.62</td>
</tr>
<tr>
<td>Delivery Mode (Route Type)</td>
<td>Letter Carrier (LC), Rural Route (RR), Suburban Service (SS), General Delivery (GD), Lock Box (LB), Call For (CF), Motorized Route (MR), Direct (DR)</td>
</tr>
<tr>
<td>Valid for Mailings From</td>
<td>Consumer's Choice</td>
</tr>
<tr>
<td>Householder Types</td>
<td></td>
</tr>
</tbody>
</table>

Not only does the attached report provide an in-depth look at your chosen trade area, it also harnesses the power of data analytics to help maximize your return on investment (ROI) by providing you with:

- A Route Ranking report that prioritizes your postal route selections based on your demographic criteria, enabling you to deliver your message to the people most likely to respond;
- A Postal Station Summary report that indicates the facilities responsible for your mailing;
- Maps, Impact Assessment, and many other campaign-enhancing resources.

Do you want to further improve your direct mailings? Take advantage of our suite of data and targeting solutions:

- **LIST SERVICES**: With access to over 13 million addresses, Canadian Post offers one of the most comprehensive lists of accurate Canadian addresses. Also, choose one of two new list selects: New Addresses and New Occupants - and you can even time your mailings to the recency of the actual move date with Hotline selects!

- **DATA SERVICES**: With the help of Smart Data Cleaner you can improve your address accuracy, identify movers and suppress duplicate records to ensure clean, current and accurate mail files - in doing so you will have less undeliverable mail and improved ROI.

- **ANALYTICS**: Our analytics experts will work with you to ensure your consumer data delivers optimal results. For example, we can help identify highest-potential customers and prospects through penetration analysis, location intelligence, segmentation, modeling and profiling.

Questions? Contact your Canada Post Sales Representative or our Commercial Service Network at 1-866-757-5480.
Reaching the right people with the right message is a key driver of campaign success. The map below shows your selected trade area and the routes that make up your coverage. The routes are colour coded according to the penetration of your selected demographic variable(s) to show how closely it matches your ideal prospect.
Below you will find your Route Ranking Report, which provides you with a tabular view of the routes within your trade area ranked according to the value of the selected demographic variable(s). By looking at the "Cumulative Penetration" and the "Cumulative Points of Call" columns, you can easily determine which routes you need to target in order to meet your desired quota.

<table>
<thead>
<tr>
<th>PSA</th>
<th>Delivery Route (Route)</th>
<th>Depot</th>
<th>All Points Of Call</th>
<th>Cumulative Points of Call</th>
<th>High Demand (PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1C</td>
<td>SS0412</td>
<td>BOWMANVILLE STN MAIN</td>
<td>9024</td>
<td>1024</td>
<td>1941</td>
</tr>
<tr>
<td>L1C</td>
<td>LC0107</td>
<td>BOWMANVILLE STN MAIN</td>
<td>917</td>
<td>1941</td>
<td>2844</td>
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<tr>
<td>L1C</td>
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<td>BOWMANVILLE STN MAIN</td>
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<td>2844</td>
<td>3434</td>
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<td>L1C</td>
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<td>3434</td>
<td>3885</td>
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<td>L1C</td>
<td>SS0402</td>
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<td>4117</td>
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<tr>
<td>L1C</td>
<td>LC0110</td>
<td>BOWMANVILLE STN MAIN</td>
<td>252</td>
<td>4117</td>
<td></td>
</tr>
</tbody>
</table>
To avoid transportation charges, you may want to deposit your Unaddressed Admail™ directly at each postal station responsible for your mailing. The table below provides you with a list of post offices where you need to induct your mailing, and how many pieces must be deposited at each location.

<table>
<thead>
<tr>
<th>HOUSES</th>
<th>APARTMENTS</th>
<th>FARMS</th>
<th>BUSINESSES</th>
<th>TOTAL POINTS OF CALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>3900</td>
<td>76</td>
<td>0</td>
<td>141</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>3900</td>
<td>76</td>
<td>0</td>
<td>141</td>
</tr>
</tbody>
</table>
Your Targeting Report

Trade Area Marketing Insights

Below, you will find some insights to your trade area. The provided charts give a simple visual representation of some key characteristics of your target area in order to help you better understand the dynamics of your market.

**Address Attributes**

- Houses - 95.000%
- Apartments - 2.000%
- Farms - 0.000%
- Businesses - 3.000%

This chart provides you with a breakdown of various delivery points within your trade area, based on your selected address attributes.

The majority of your area is characterized by: Houses

**High Demand Routes**

- High Demand Walks - 0.000%
- Regular Walks - 100.000%

This chart shows you the percentage of High Demand Routes in your target area. They are identified in your Route Ranking Report in the "High Demand" column. In order to help protect the effectiveness and relevance of Unaddressed Admail™ as an advertising medium, mail targeted to these routes will be subject to a premium.

**You could save...**

At Canada Post, your business is our business, and we are always looking for new ways to help you maximize your return on investment. That's why we are introducing a **Seasonal Discount** of 10% during select periods throughout the calendar year (refer to the table below for applicable months). The discount will apply to mailings deposited during these timeframes.

<table>
<thead>
<tr>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
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<tbody>
<tr>
<td>10%</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
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<td>10%</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Did you know...**

We can help you discover and harvest untapped market potential? We do so by generating a list of additional high value routes, typically located just outside your selected trade area, that meet or exceed your targeting criteria. To take advantage of this offering, simply accept our high value walk suggestions within the online application or request this feature when having an analysis run by our team of geospatial analysts.
Access over thirteen million Canadian addresses

Are you missing the high potential prospects right next to your best customers? With Acquisition Admail™, you don’t have to. This impactful direct mail solution lets you zone in on prospects at the Postal Code™ level—using addresses only—while protecting your existing relationships by excluding current customers from your mailing. With over thirteen million home and business addresses available, we have your customer.

New movers are a diverse, highly responsive market of prospects that are eager to establish relationships with local businesses. Be the first to meet them with New Addresses and New Occupants, two premium new homeowner and renter selects from Acquisition Admail™. And by using our Hotline selects, you can even tailor your messaging and time the delivery of your mailing according to the recency of the move.

Ensure your mailing list is valid

Is bad address data hindering your campaign performance? Thanks to our Smart Data Cleaner, it doesn’t have to. This easy-to-use online tool lets you clean and update your customer and prospect mailing lists. Not sure if your list needs a scrub? Get a free diagnostic first.

Reach people by name and boost response

Unaddressed Admail™ is a powerful and effective marketing solution. To take your targeting to a whole new level use Addressed Admail™, and reach Canadians by name and address at their place of residence or work. Studies have shown that 87% of Canadians are likely to read mail that is addressed to them personally, and that addressed direct mail garners three times as much attention as unaddressed direct mail.

Turn your customer data into actionable insight with our Advanced Analytics Services

Data is the fuel that drives campaign performance, but it can sometimes be a challenge to analyze and take action on it. That’s where our dedicated team of analytics experts comes in. Through penetration analysis, location intelligence, segmentation, modeling and profiling, they can help enhance your response potential by identifying your highest potential prospects.

Want to learn more about our powerful Data & Targeting Solutions?

Visit our website: www.canadapost.ca/datatargetingsolutions

Or email us at: data.targetingsolutions@canadapost.ca

If you wish to speak with one of our Data and Targeting specialists, call us at 1-877-281-4137

Copyright © Canada Post Corporation, 2012
Source: Derived from Statistics Canada: 2006 Census Profile (94-569-X) and 2006 Census Dissemination Area Boundary File (91-169-X)
No confidential information about an individual, family, household, organization or business has been obtained from Statistics Canada.
Confidential: This report is provided for use in accordance with the terms of use available at http://www.canadapost.ca/corporate/personal/help/legal.jsp. Any other use is strictly prohibited. This report is provided "as is" and Canada Post disclaims any warranty whatsoever. All rights not expressly granted are reserved by Canada Post and its licensors. This report may be used only during the validity period noted above and must be destroyed following the expiry of such validity period.
1. **Address Attributes**: Describes the types of buildings present in your trade area, whether they are houses, apartments, farms, and/or businesses.

2. **All Points of Call**: The total number of physical locations (points of call) receiving your mailing on a given letter carrier’s route, which can be houses, apartments, farms and/or businesses based on your selection criteria.

3. **Average Value**: The average value (%) of the chosen Statistics Canada demographic variables that can be associated with the letter carrier’s route, which provides you with insight into your recipients.

4. **Cumulative Penetration**: The cumulative percentage of penetration associated with the letter carrier’s routes based on the selected demographic variables.

5. **Cumulative Points of Call**: The cumulative point of call count associated with the letter carrier’s routes, which has been calculated by adding the previous Delivery Mode rows in the report.

6. **Delivery Mode**: The area served by a letter carrier.

7. **Depot**: A postal facility established for the processing and delivery of mail. Example: Etobicoke, Ontario.

8. **Forward Sortation Area (FSA)**: The first three characters (alpha-numeric-alpha) of a Postal Code®, which represent a geographic area. Example: M9W

9. **High Demand (HD) Routes**: Some routes are in higher demand than others. High Demand Routes are defined as routes having more than 7.5 Unaddressed Admail™ items on average per address, per week. The volume on these routes poses a significant challenge for our mail processing network and for the delivery employees. A premium will be applied to better align volume with our operational capacity and to protect the overall effectiveness of the medium.

10. **Valid for Mailings From**: Due to monthly route restructures, the results found within this report are valid between these dates. Mailing outside of these dates could cause delivery problems or pose a risk of non-delivery.

11. **Postal Station Summary**: This report indicates which postal stations are responsible for your targeted routes. The count of each point of call type (houses, apartments, farms, and/or businesses) is displayed for each depot. The total point of call count, listed at the end of the report, denotes the number of houses, apartments, farms, and/or businesses associated with each postal station.

12. **Route ID**: This represents the identifier assigned to each letter carrier’s route. Its primary use is for the coordination of the mail delivery.

13. **Target Variables**: A report can have a minimum of one to a maximum of three Statistics Canada demographic variables selected. These variables are displayed in the value columns as a percentage (%) that can be associated with that entire Delivery Mode.

14. **Total**: This row represents the sum of each dwelling type (houses, apartments, farms, and/or businesses) within a depot.

15. **Total Points of Call**: The total number of houses, apartments, farms, and/or businesses (based on your selection) associated with the depot in your Postal Station Summary. This number indicates how many pieces are required for each depot.

16. **Value1**: The percentage (%) of the Statistics Canada demographic variable that can be associated with that entire Delivery Mode. Example: Income $100,000+

17. **Value2**: The percentage (%) of the Statistics Canada demographic variable that can be associated with that entire Delivery Mode. Example: Age 50+ Years Old

18. **Value3**: The percentage (%) of the Statistics Canada demographic variable that can be associated with that entire Delivery Mode. Example: Female
Appendix D

- Notice of Public Open House (Newspaper Advertisements)
Appendix E

- Public Open House (Panels)
Welcome!

St. Marys Cement
Application for Regular Use of
Low-Carbon Alternative Fuel (Woody Biomass)
(Environmental Compliance Approvals)

Public Open House
Thank you for coming!
Please sign in at the front desk.

Objectives of this Session:
• Share Information regarding the upcoming applications for approval for regular use of low-carbon alternative fuel (woody biomass).
• Answer questions about the Project and next steps.
• Receive the community’s input and feedback for consideration by the project team.
St Marys Project Objectives

- Maintain good relationships with the community, regulatory authorities and interested stakeholders.
- Sustain and control the quality of the cement products. Do not impact the core business.
- Reduce dependence on virgin/non-renewable sources of fuel by using post-consumer material.
- Reduce greenhouse gas emissions.
Bowmanville ECA Approvals Application

St Marys Cement is preparing Environmental Compliance Approval (ECA, formerly called Certificates of Approval) applications in order to substitute low-carbon (woody biomass) alternative fuel for conventional fuel on a regular basis.

The maximum amount of alternative fuel that would be consumed at the plant would be 100 tonnes a day. This requires ECA approval only.

Minimal changes are required at the Cement Plant to use this alternative fuel. St Marys proposes to install one or more buildings to manage the fuel, and equipment to feed the fuel to the cement kiln and calciner burners.

The applications will be submitted in the Spring of 2014.
Description of the Alternative Fuel

The low-carbon alternative fuel is a woody biomass derived from industrial and post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently disposed in landfills. When these materials are used in lieu of fossil fuels for energy, it results in a decrease in greenhouse gas emissions.

This kind of alternative fuel is similar to those commonly used across Canada and elsewhere.

The maximum amount of alternative fuel that would be consumed at the plant would be 100 tonnes a day.

Depending on the energy content of the fuel, it could provide around 3% of the energy required for the cement kiln.
Handling/Preparation of Alternative Fuel

Initial processing of the alternative fuel would be undertaken offsite by the fuel supplier.

Around 5 trucks a day would deliver the fuel to the plant in enclosed trailers.

Each truck and trailer would be weighed on arrival at the plant and directed to an alternative fuel building.

Prior to being fed into the fuel delivery system, the fuel would require additional preparation to ensure a homogenous stream of appropriately sized material. All storage, handling, preparation and fuel delivery activities will be enclosed.

Up to 500 tonnes of fuel could be stored in the alternative fuel buildings, which is enough to make sure that there is fuel on-hand for long-weekends and holidays.
Site Drawing: Bowmanville Plant

- Clinker Cooler/Main Kiln Burner
- Finish Mills 1, 2, 3
- Automatic Conveying Line
- Clinker Storage
- Kiln Stack
- Pre-Heater Tower
- Conventional fuel Building
- Kiln Feed Baghouse
- Raw Material Storage
- Potential locations for Alternative Fuels, Unloading, Storage Building(s)
Alternative Fuel Feed System

The alternative fuel would be fed into a pneumatic solid fuel delivery system.

St. Marys Cement will purchase and install a solid feed system from a manufacturer who specializes in the design and manufacture of bulk solid conveying systems.

The alternative fuel feed system will be interlocked with the plant control system, so that it will start/stop with the current fuel system. The control room operator will be able to set the feed rate for the alternative fuel based on system performance.
Alternative Fuel Quality

The low-carbon woody biomass fuel consists mainly of wood chips, with some fragments of plastic, shingles and other materials.

Testing indicates that this material has:
- Calorific value around 30% - 40% that of conventional fuel
- Lower sulphur content than conventional fuel
- Some trace metals
Alternative Fuel Quality

Conventional Fuels (coal or pet coke) normally make up around 10% of the total material used at the Bowmanville plant. The Alternative fuel will make up only 0.8% of the total input to the kiln.

The raw feed (not the fuel) dominates the mass balance of the kiln and air emissions from the facility.

Therefore: the potential change in the total inputs into the kiln when alternative fuel is substituted for a portion of conventional fuel, is very small.

The fuels would be tested for trace metals like cadmium, chromium, lead and mercury on a quarterly basis.

St Marys must ensure that the maximum off site concentrations of any inorganic compounds identified do not exceed the respective MOE limit under site wide maximum operating conditions.
Air Emissions

Off-site concentrations of trace metals and organic chemicals in the air will be below their respective current and future MOE Point of Impingement (POI) limits.

No statistically significant changes to air emissions are expected with the use of the proposed low carbon alternative fuel (woody biomass).

No change to plant dust and odour emissions are expected as the alternative fuel will always be enclosed either on the truck delivering the fuel, or inside the fuel building.

Levels of Dioxins and Furans are not expected to increase as a result of use of alternative fuel. The kiln system is designed to minimize the potential for dioxin and furan formation regardless of fuel type.

Very small amounts of trace metals (parts per million) are in the materials entering the cement plant, and most of these are in the raw materials (such as limestone), not the fuel. Over 99.8% of the trace metals in the raw materials and fuel are bound into the cement and are not emitted to the air.
## Air Emissions

<table>
<thead>
<tr>
<th>Substance</th>
<th>Averaging Period</th>
<th>POI Limit</th>
<th>Regulation Schedule #</th>
<th>% of POI Limit</th>
<th>Conventional Fuels</th>
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</tbody>
</table>
Estimated GHG Emissions Reductions

- Direct GHG Emission Reduction – from substitution for fossil fuel of over 40,000 tonnes* CO₂e per year.
- Avoided Landfill Emissions – around 71,000 tonnes CO₂e per year.
- Reduction in Transportation Emissions – over 2,500 tonnes CO₂e per year.
- Avoided Emissions from Fossil Fuel Production – over 52,000 tonnes CO₂e per year.

Overall potential – reduced emissions of around 167,000 tonnes CO₂e per year, equivalent to taking 34,000 passenger vehicles off the road for a year.

*Based on substituting 7% of conventional fuel with clean wood.
2011 Alternative Fuel Demonstration at the SMC Cement Plant in St. Marys, Ontario

A demonstration project was undertaken for a different alternative fuel at the SMC Cement Plant in St. Marys (near London), Ontario in 2011.

It was a time limited full-scale research undertaking that involved the receipt and use of alternative fuel to offset up to 30% of the conventional fuel (based on energy input) in the main kiln burner.

Monitoring and testing of the performance of the Plant when using the alternative fuel was completed during the demonstration to determine the air emission differences (if any) between the Cement Plant operating with conventional fuel and a fuel mixture including alternative fuel.

The demonstration indicated that were no statistically significant changes in stack emissions or ambient air quality when alternative fuel was used during the demonstration. The facility complied with MOE limits at all times.
2011 Alternative Fuel Demonstration at the SMC Cement Plant in St. Marys, Ontario

The raw feed and conventional fuel sampling program demonstrated that the input into the system from raw feed and conventional fuel was consistent across all operating conditions.

No operational or environmental problems were experienced during the course of the Demonstration.

The design and operations of the Alternative Fuel Demonstration successfully mitigated any risk of noise, dust, litter and odour that could result from the handling and use of alternative fuel.

While the alternative fuel was different, similar equipment is proposed for Bowmanville, which will also include a fuel handling process. The same type of result is expected from the regular use of the low carbon alternative fuel at the Bowmanville Cement Plant.
We Want to Hear from You!

The purpose of today's Public Information Session was to provide you with an overview of the application for regular use of low-carbon alternative fuel at the St. Marys Bowmanville Cement Plant.

We welcome your comments on this project!

Opportunities for Feedback:

- Pick up and fill out the comment form today.
- Visit: www.stmaryscement.com

Questions or Comments can also be addressed to the following:

**Martin Vroegh**  
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HDR Corporation  
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Appendix F

- Public Open House (Comment Sheet, FAQs, Key Facts Slides)
Alternative (Low-Carbon) Fuel Project

COMMENT SHEET

We want to hear from you!!

You are invited to provide comments on our plans to submit an application for an Environmental Compliance Approval to permit the regular use of up to 100 tonnes per day of alternative (low-carbon) fuel at the Bowmanville Cement Plant. The alternative (low carbon) fuel would substitute for a portion of the existing fossil fuel used at the plant. Please complete this comment sheet and leave it with us today or send it to the address below by March 26th, 2014 so that we can address them in our project documents.

St. Marys Cement Alternative Fuel Project
c/o HDR 100 York Boulevard, Suite 300, Richmond Hill, ON L4B 1J8

NAME:
ADDRESS:
TELEPHONE:
EMAIL:

Comment:


Under the Freedom of Information and Protection of Privacy Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this Project and will be released, if requested, to any person.
Environmental Compliance Approvals
For Regular Use of Alternative Fuel
St Marys Bowmanville Cement Plant

Frequently Asked Questions

St. Marys Cement is preparing an application (Environmental Compliance Approval) to the Ministry of the Environment to permit the regular use of up to 100 tonnes per day of alternative (low-carbon) fuel at the Bowmanville Cement Plant. The alternative (low carbon) fuel would substitute for a portion of the existing fossil fuel used at the plant. The proposed low carbon fuel is woody biomass, derived from industrial and post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently landfill disposed.

Frequently Asked Questions – About the Environmental Compliance Applications

Q. What is a “low carbon fuel”?
A. “Low Carbon” fuels include materials from biological origins like woody biomass. When these materials are used in lieu of fossil fuels for energy, it results in a decrease in greenhouse gas emissions.

Q. Why is St. Marys Cement interested in using the alternative (low-carbon) fuels?
A. St. Marys long term goals are to reduce dependence on fossil fuel by using material from industrial and post-consumer sources and to reduce greenhouse gas emissions.

Q. Why is St. Marys Cement applying for Environmental Compliance Approvals?
A. St. Marys Cement would like to substitute this alternative fuel for a portion of the conventional fuels used at the plant on a regular basis. This requires approval from the Ontario Ministry of the Environment.

Q. What types of low carbon fuels are proposed?
A. The proposed low carbon alternative fuel is a woody biomass derived from industrial and post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently disposed in landfills. This kind of alternative fuel is similar to those commonly used across Canada and elsewhere.

Q. How much of the proposed low-carbon alternative fuel would be used?
A. The maximum amount of alternative fuel that would be used at the plant would be 100 tonnes a day.

Q. What would happen to the proposed low-carbon alternative fuel when it arrives at the Plant?
A. The fuel which will have already undergone initial processing offsite would require a minimal amount of handling and preparation. The fuel would be received in a dedicated building. Following secondary preparation (size reduction) to ensure a homogenous stream of appropriately sized material, the fuel would then be fed through an enclosed pneumatic fuel delivery system directly into the kiln system.

Q. How will St. Marys make sure that the proposed low-carbon alternative fuel is suitable for use at the plant?
A. St Marys will implement a fuel quality management program, including fuel inspections, sampling and testing for operational and environmental parameters such as calorific content, and trace heavy metal content.
Q. Will the use of proposed low-carbon alternative fuel have an effect on air emissions from the plant?
A. With the exception of greenhouse gases, no statistically significant changes to local or regional air concentrations are expected. The proposed low-carbon alternative fuel will make up very small portion of the mass of materials processed at the plant.

Q. Will the use of the proposed low-carbon alternative fuel generate ash for disposal?
A. There will be no generation of ash for disposal. The ‘ash’ in the fuel description is just the mineral content in the fuel that will not burn like, calcium and silica. This material is incorporated into the cement product.

Q. How will dust and odour from the proposed low-carbon alternative fuel be managed?
A. There will be no change to dust and odour when the alternative fuel is being received and used as the proposed low-carbon alternative fuel will always be enclosed either on the truck delivering the fuel, or inside the fuel building and all air from the fuel building will be directed through the very high temperature kiln system.

Q. How will the proposed low-carbon alternative fuel be delivered to the plant? Will it affect local traffic?
A. Around 5 trucks per day will deliver alternative fuel to the plant from Monday to Friday each week. There will be minimal effect on local traffic.

Q. Will any of the proposed low-carbon alternative fuel be stored at the site? For how long would it be stored?
A. Up to 500 tonnes of material could be stored in the alternative fuel building at any one time, to make sure that over weekends and holiday periods, there is alternative fuel available at the site. Materials would be used within approximately one week of receipt at the site.

Q. When is St Marys going to make the submission for approvals?
A. St Marys Cement plans to submit the Environmental Compliance Approval applications later this Spring (2014).

Q. How can I get involved or get more information about the project?
A. For more information about the project, please contact:

**Martin Vroegh**
Director, Environmental Affairs,
St. Marys Cement
400 Waverly Road, South,
Bowmanville, ON L1C 3K3
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**Janine Ralph**
Project Manager,
HDR Corporation
100 York Blvd, Suite 300,
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Janine.Ralph@hdrinc.com
T: 905-380-8568

Information is also available on the St. Marys website at [www.stmaryscement.com](http://www.stmaryscement.com)
Frequently Asked Questions – About Alternative Fuel and the Environment

Q: Will emissions of metals like chromium and lead increase with the use of the proposed low-carbon alternative fuel than with the conventional fuel?
A: We do not expect any real difference in any emissions of any metals, including chromium and lead. Very small amounts of trace metals (parts per million) are in the materials entering the cement plant, and most of these are in the raw materials (such as limestone), not the fuel. Over 99% of the trace metals in our raw materials and fuel are bound into the cement and are not emitted to the air.

Q: What are the current dioxin emissions?
A: The current emissions of dioxins are extremely small:
   - The MOE standard is 5 pg TEQ/m³, which is 5 trillionths of a gram per m³.
   - The plant is emitting at only 0.05% of the standard when operating at its maximum capacity.

Q: What are the major sources of dioxins? Are cement plants a major source?
A: The single largest man made source of dioxins in the environment is open burning of household waste. Cement plants never operate as open burners and are NOT noted as a major source in Canada or the U.S.

Q: Will the level of dioxins and furans emitted increase with the use of the proposed low-carbon alternative fuel?
A: No, the levels are not expected to increase because the kiln system is specifically designed to minimize the potential for dioxin and furan formation regardless of fuel type.

Q: How is dioxin and furan formation controlled in a cement kiln?
A: Dioxins and furans can be emitted when any substance is burned, particularly if the temperatures are low and there is not enough air (e.g., residential barbeque). The key to controlling dioxins and furans is good combustion practice. Dioxin and furan formation is controlled during the cement making process because of good combustion practice and the operating conditions in the plant. High temperatures with long residence times destroy any organic chemicals in the incoming raw materials and fuels. High temperatures, long residence times and the oxidizing conditions in the cement making process, followed by rapid cooling through the temperature zone where dioxins and furans can form minimize the potential for dioxin and furan formation.

Q: Will the proposed low-carbon alternative fuel emit a broader range of toxins that will affect human health?
A: Health authorities in other countries have looked very carefully at this. Environmental and public health authorities, from the US Environmental Protection Agency to the UK Health Protection Agency, have routinely concluded that the co-processing of alternative fuels in cement manufacturing does not increase risk to the environment, or the public.
Q: Will an odour be emitted from the use of this fuel at the cement plant?
A: There would be no odour produced as a result of using alternative fuel as the fuel will be completely combusted at very high temperatures under controlled conditions.

Q: What are the differences between the current and proposed low-carbon alternative fuel?
A: In regards to fuel quality there are only small differences between current fossil fuel used at the plant (petroleum coke) and alternative fuel:
 • Moisture and inorganic content in the alternative fuel can be higher.
 • There is slightly more chlorine in the alternative fuel.
 • Some trace metals are a little higher and some a little lower.
 • The sulphur content of the alternative fuel is a lot lower.

Q: Will hazardous waste be used in the cement plant? There are a lot of web-sites that talk about the effect of using hazardous waste in cement kilns.
A: NO hazardous waste will be used. The proposed low-carbon alternative fuel would consist of woody biomass and is derived from post-consumer sources, for example, wood recovered from processing of construction and demolition waste that is currently disposed in landfills. These are not hazardous materials.

Q: What facilities are currently using similar alternative fuel as those proposed for St. Marys?
A: There are numerous facilities in Canada, United States, and Europe and around the world using low carbon alternative fuels similar those proposed for use at the St. Marys plant.

For more information please contact either of the following:

**Martin Vroegh**  
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T: 905-380-8568

Information is also available on the St. Marys website at www.stmaryscement.com
St. Marys Cement
Low Carbon Alternative Fuel Project

Q & A

Clarington Beech Centre
Bowmanville, Ontario
March 5th, 2014
Off-site Impact: Metals

Q: Will off-site concentrations of metals like chromium, mercury and lead increase with the use of the proposed low-carbon alternative fuel than with the conventional fuel?

A: We do not expect any real difference in ambient air concentrations of any metals including chromium and lead.

- Very small amounts of trace metals (parts per million) are in the materials entering the cement plant, and most of these are in the raw materials, not the fuel.
- Over 99% of the trace metals in our raw materials and fuel are bound into the product and are not emitted to the air.

We have looked at the composition of the alternative fuel and measured the potential change in concentrations of all trace metals and the changes are all extremely small, so small that the concentrations would be equivalent to drops of water in millions of swimming pools or seconds in millions of years. The next slides provide some examples.
Off-site Impact: Metals

For example in regards to lead concentrations in the air:

- The MOE standard* is 0.5 µg/m³ which is 0.5 millionths of a gram per m³. A gram is about 1/6 of one of the little packs of sugar you put in your coffee. This is around 0.06 parts per billion (ppb).
- The MOE standard is equivalent to around 2 drops of water in 10 swimming pools**.
- With current fuels the plant is at 1.9% of the standard (0.0001 ppb), or around 1 drop in a thousand swimming pools.
- With alternative fuels the plant would be at 2.5% of the standard. This is equivalent of 1.3 drops of water in a thousand swimming pools.

* 24 hour POI Limit, concentration
** assumes standard backyard pool filled with around 25,000 L of water
Off-site Impact: Metals

Some more examples are noted below

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<tr>
<th>Metal</th>
<th>24 hour POI Standard/ Guideline</th>
<th>Current Performance (percent of standard)</th>
<th>Performance with Alternative Fuel (percent of standard)</th>
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</thead>
<tbody>
<tr>
<td>Mercury</td>
<td>2 µg/m³ 0.22 ppb</td>
<td>0.03% 0.00005 ppb</td>
<td>0.03% 0.00005 ppb</td>
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<td>Chromium</td>
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<td>0.2 % 0.0015 ppb</td>
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<td>Cadmium</td>
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<td>0.80 % 0.0000436 ppb</td>
<td>0.84 % 0.0000458 ppb</td>
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Generation of ‘Ash’

Q: Will the use of the proposed low-carbon alternative fuel generate ash for disposal?
A: No. There will be NO generation of ash for disposal. The ‘ash’ in the fuel description is just the mineral content in the fuel that will not burn like, calcium and silica. This material is incorporated into the cement product.
Off-site Impact: Dioxins and Furans

Q: What are the current off-site concentrations of dioxins and furans (D&Fs) from the plant?

A: The current off-site D&Fs concentrations are extremely small:

- The current MOE standard is 5 pg TEQ/m³* which is 5 trillionths of a gram per m³.
- The MOE standard is equivalent to around 4 drops of water in 10 million swimming pools, or one second in over 80 million years*.
- The plant is contributing only 0.05 % of the current standard, equivalent to around 2.5 drops in 10 billion swimming pools, or 1.25 seconds in over 200 billion years.
Dioxins and Furans: Sources and Estimated Releases

Q: What are the major sources of dioxins and furans?

A: The single largest man made source of dioxins and furans in the environment is uncontrolled open burning of household waste. Cement plants are NOT noted as a major source in Canada or the U.S.
Dioxins and Furans: Alternative Fuels

Q: Will the level of dioxins and furans emitted increase with the use of the proposed low-carbon alternative fuel?

A: No, the levels are not expected to increase with the use of low-carbon alternative fuel (wood biomass).
Dioxins and Furans: Control in Cement Kiln

Q: How is dioxin and furan formation controlled in a cement kiln?

A: Dioxins and furans can be emitted when any substance is burned, particularly if the temperatures are low and there is not enough air (e.g. residential barbeque). The key to controlling dioxins and furans is good combustion practice. Dioxin and furan formation is controlled during the cement making process because of good combustion practice and the operating conditions in the plant including:

- High temperatures involved in the cement making process;
- Long residence time at high temperatures;
- Oxidizing conditions in the cement making process;
- Lime particles in system remove free chlorine (alkali environment);
- High volume/velocity of gases in the system; and,
- Rapid cooling through temperature zone for formation of organic molecules (250 to 400 °C).
Health Effects

Q: Will burning of alternative fuels produce a broader range of toxins that will affect human health?

A: Health authorities in other countries have looked very carefully at this. Environmental and public health authorities, from the US Environmental Protection Agency to the UK Health Protection Agency, have routinely concluded that the co-processing of alternative fuels in cement manufacturing does not increase risk to the environment, or to public health.
Health Effects

Some statements from the UK Health Protection Agency:

• “... assessments show a negligible impact, whether using conventional or substitute fuels, which would not be detectable through any currently available health surveillance method.”

• “This process environment means that substitute fuel is no more polluting to the environment than conventional fuels and for some key pollutants is actually less so.”
Health Effects

Numerous studies have shown kilns using alternative fuels easily meet emission standards and do not increase risk to the environment or the public.

Please refer to the following studies for more information:
• Cembureau: THE SUSTAINABLE USE OF ALTERNATIVE RESOURCES IN THE EUROPEAN CEMENT INDUSTRY, September 2004
Spills

Q: What is the likelihood of on and off-site spills?

A: The proposed low-carbon alternative fuel will always be enclosed and will be hauled to the site via closed transfer trailers. The proposed low-carbon alternative fuel will be stored and managed within a dedicated alternative fuel building. The likelihood for any type of “spill” is very minimal and will not endanger public nor environmental health.
If you missed the beginning of this slide show, please continue to watch. It will automatically restart.

Thank you for your interest.
Appendix G

- Detailed Fuel Analysis Table
- Detailed Kiln Stack Emission Comparison Table
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<th>Contaminant Name</th>
<th>CAS #</th>
<th>Kiln Stack Emission Rate</th>
<th>Change in Emission Rate (g/s)</th>
<th>Contribution from Kiln Stack</th>
<th>Change in POI Concentration (ug/m³)</th>
<th>Averaging Period (hr)</th>
<th>MOE POI Limit (ug/m³)</th>
<th>Limiting Effect</th>
<th>MOE POI Guideline</th>
<th>Regulation Schedule #</th>
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