REGIONAL MUNICIPALITY OF WATERLOO

WATERLOO REGION LANDFILL LIAISON COMMITTEE (WRLLC)

MEETING SUMMARY

DATE: Tuesday February 5, 2019
TIME: 7:00 P.M.
LOCATION: Waterloo Landfill Administration Building

Attendees
Neil & Trudy Haffner
Peggy Boettger
Peter & Deb Hayes
Rob Parent
John Strong
Trevor Mahoney
Harald Drewitz
Ernst Alge

Distribution
All Attendees – via email
David Hollinger
Judy Rys
Rick Wallace
Robert Milligan
Jessica Alessio
Eric Boyd
Garry Bezruki
Mark Burns
Judith Lodi
Paul Dietrich – The Boardwalk
H. Kayser
Fred Veller
Jivco Velimironii
Christine Sabourin
Nesib & Ljiliana Omerasevic
Aliya Malik
Mark Christensen
Jeremy Hetherington
Chris Spraakman
Dante Trigiani
Roger Crawford
Ajoy Opal
Pam Kaur
Greg Voisin

Wilf Ruland – Hydrogeology Consultant
Bridget Mills - BCX
John Deyoe – RWDI
Brad Bergeron – RWDI
Tim Ware – RMOW
Mike Greenhill – RMOW
Tracy Annett – RMOW
Linda Churchill – RMOW

Dale Ross
Anne Childs & Gary Hale
Henrik Noesgaard
Zahra Chughtai
Tony Lea
Celia Valente & John Tracey
Dave Barrett
Cheryl Madill
Gerry Wetlaufer
Holly Corrigan
Gert Hardman & Angus McCleod
James Jackson – Waterloo Chronicle
Jennifer Yessis
Dana Mohammed - MOE, Guelph
Elizabeth Clarke – RMOW Councillor
Westvale Comm. Assoc. – c/o Eric Boyd
Sean Strickland – RMOW Councillor
Thomas Schmidt - RMOW
Dave Hardy – Hardy Stevenson & Associates
Bil Ioannidis – City of Kitchener Councillor
Albert Hovingh – RMOW
Kaoru Yajima – RMOW, Water Services
Jorge Cavalcante – RMOW, Water Services
Brenna MacKinnon - RMOW
Introductions were made to start the meeting.

Brad Bergeron from RWDI presented on the ambient air quality and odour control program for the Waterloo Landfill. The ambient air quality program is mandated by the Ministry of Environment, Conservation and Parks (MECP) and was initiated in 2004. In response to comments from the WRLLC, additional sample sets have been added to cover the working areas at the site, in addition to the closed landfill areas. For the ambient air quality program, volatile organic compounds (VOCs) are tested upwind and downwind and the results are compared to MECP criteria. Brad showed trending over five years of several compounds. The results to date have shown the testing is well below the MECP criteria.

In addition there are walk over and community surveys as part of the odour control program. Walk over surveys identify areas on the landfill site that may be venting that require further assessment and potential repairs. Community surveys are conducted downwind from the landfill to identify off-site impacts. Neither of these are mandated by the MECP however they are a valuable tools used by the Region to identify impacts and potential point sources of odours.

RWDI is also working on a trial using drones to collect the walk-over survey information. A drone was used September 6, 2018, and collected data along with a walk-over survey. RWDI has the flight data and is correlating it with the field data and will prepare a technical memo on the trial.

For the 2019 program, RWDI will continue to collect additional ambient air quality samples, introduce categories for walk-over surveys which will be used to further assess the information collected, continue community surveys and submit a technical memo on the drone trial.

In addition, the Region is updating the 1994 Landfill Gas Action Plan which is the original basis for the landfill gas collection system at the site. With the new fill plan for the remainder of the south expansion area as well as from the site experience gained over the past 30 years, the updated plan will assess the current landfill gas collection at the site and address the design of the future collection system to enhance landfill gas collection at the site.

Peter Hayes asked if VOC samples were taken along with the off-site hydrogen sulfide measurements. Can it be determined if there is an odour, could there also be a VOC present? John said that we have not been co-collecting a VOC sample. However, historically, this was done at a residence in Westvale to look at this issue. A resident triggered a portable sampling unit which took a VOC sample, and then RWDI retrieved the sample. At that time the results for the VOCs showed there were trace amounts of VOCs measured during these resident triggered samples. Peter suggested that schools/parks should be added to the community surveys. John indicated that this could be easily accommodated.

Harald commented that with the warm weather over the past week, he could not detect odours near his home or when he was in the Boardwalk area. The Walmart parking lot does seem to be the worst area in general – likely due to the proximity to the active landfill area.

A copy of the presentation is attached to the minutes.
1. **Review of Previous Minutes & Business Arising**

There were no comments on the previous minutes from November 6, 2018.

Previous minutes and agendas can be found on the Region website.

2. **Complaints**

There have been nine communications from November 2018 to January 2019; all related to odours – most of them from November. In 2018, the Region received a total of 32 communications and of those 30 were odour complaints.

The summary of complaints is attached to the minutes.

3. **Submittals from Local Residents**

Wilf is completing his review of the 2017 Annual Progress Report and has proposed a meeting for February 12th at 2 pm, at the Waste Management Centre. In addition, Water Services will attend the meeting to discuss the status of Sanico Landfill and the proposed 1,4-dioxane guideline.

***** Subsequently this meeting was rescheduled due to inclement weather. Linda will send out a meeting notice to the committee regarding the new meeting time.

4. **MECP Submittals**

The South Boundary Groundwater Extraction System – Contingency Plan has been prepared by GHD and submitted to the MECP and Wilf Ruland on January 17.

Upcoming submittals include the Operations annual report due April 1 and the annual Stormwater report due April 30.

5. **Landfill Operations**

i. Linda presented the 2019 construction schedule for Waterloo Landfill. 2018 was a very busy year for construction and as such several projects need to be completed with respect to warmer weather work such as grading, erosion control and planting. New construction this year will include upgrades to the groundwater extraction buildings and leachate pump station 3 replacement.

In addition, there may be some preparation works around stormwater pond #2 such as tree removals as the Region is planning modifications to this pond in 2020. This pond is along the west limits of the site, along the ESPA (Environmentally Sensitive Policy Area).

Peter Hayes inquired if there would be an opportunity to conduct stream restoration utilizing the cool water discharge from the southern groundwater collection system as part of a red side face recovery initiative. The Region will look into this.

Neil asked if the Region is planning on planting additional tree cells this year. Linda was unsure if there are any planned for this year, she will check and update the committee at the May meeting.
The 2019 construction schedule is attached.

ii. The landfill gas control system ran at a monthly average flow of approximately 1100 cfm over the past 3 months. Attached are the tables showing the monthly average gas flows for 2018/2019.

iii. The leachate pumping rates are also presented on the gas flow sheet (attached) under the column PS3 monthly total flow. Pumped volumes have been within the typical range for this time of year.

iv. The south/east groundwater extraction system continues to operate with ten wells at a combined rate of approximately 2000 l/min. There are 7 wells operating on the east side at a combined flow rate of approximately 1300 L/min and 3 wells on the south side at a combined rate of approximately 600 L/min. The maximum approved rate is 3400 l/min. The Performance Management Plan for the system has been implemented. Tracy noted that the shallow interceptor sump EW347 has been impacted by the lag effect of precipitation recharging the aquifer. The 2018 pumping rates are available by request. They will also be incorporated into the annual progress report.

v. The SE4B cell construction is complete and waste was first placed in the cell on December 12th. The next cell is projected to be required in 2021 or 2022.

vi. SWMP5 has been completed and is functioning as intended except for the revegetation of the pond and surrounding area. The committee asked if the pond plantings were native vegetation and Tracy said that yes, only native plants were used and the plan was approved by the Grand River Conservation Authority.

6. Well Water Sample Results

Private well samples were taken in October and results distributed. The next samples will be taken in the spring.

7. Landfill Studies

Tracy reported that she anticipates she will have a treatability study to address impacts in the northwest corner by the May meeting. GHD is working on a tech memo on the work they are completing in the area.

8. Other Business

i. The agenda for the groundwater meeting will also include an update on the Sanico Landfill, microplastics research collaboration and the MECP proposed 1,4-dioxane limit. Wilf will then present on his review of the 2017 Annual Progress Report and the South Boundary Groundwater Extraction System Contingency Plan.

ii. There will be a six week closure of the Cambridge Transfer Station to replace the floor. The current floor has reached the end of its service life and as such needs to be replaced. It will be replaced with nine inches of concrete and a one inch urethane concrete top layer.
During this time, curbside garbage trucks will come directly to Waterloo instead of the tractor trailers currently used. This could increase traffic coming into the landfill. However, this work will be done mid August which is the “slowest” time of year for incoming waste to Waterloo in an effort to reduce the impact on traffic as much as possible. It is anticipated that the work will take about six weeks to complete.

Next Meeting: Tuesday, May 7, 2019 at 7:00 pm

Place: Waste Management Centre Administration Building  
925 Erb Street West  
Waterloo, Ontario

This meeting summary was prepared by Linda Churchill.
# Waterloo Waste Management Centre

## Communication Summary

January 01, 2018 to January 31, 2019

<table>
<thead>
<tr>
<th>Month</th>
<th>Dust</th>
<th>Landfill Cover</th>
<th>Litter</th>
<th>Noise</th>
<th>Odour</th>
<th>Vectors</th>
<th>Misc</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FEB</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MAR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>APR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MAY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>JUN</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>JUL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AUG</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SEP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>OCT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>NOV</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>DEC</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>30</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

## 2019

<table>
<thead>
<tr>
<th>Month</th>
<th>Dust</th>
<th>Landfill Cover</th>
<th>Litter</th>
<th>Noise</th>
<th>Odour</th>
<th>Vectors</th>
<th>Misc</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>FEB</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MAR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>APR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MAY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>JUN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>JUL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AUG</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SEP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NOV</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

Date Printed: Feb 01, 2019
<table>
<thead>
<tr>
<th>Month</th>
<th>Monthly Total Average Gas Flow</th>
<th>Monthly TEL Average Gas Flow</th>
<th>Flare 1, Flare 2 and Flare 3 Combined</th>
<th>Portable Flare total monthly flow</th>
<th>Average Methane concentration (%)</th>
<th>Average Oxygen concentration (%)</th>
<th>Total LFG Extracted* (cfm)</th>
<th>Average electricity generation* (kWh)</th>
<th>Total electricity generation per month* (MWh)</th>
<th>Reduction in Methane Emissions* (t, eCO2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1123</td>
<td>1120</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>53.14</td>
<td>0.83</td>
<td>1663984</td>
<td>4074</td>
<td>3031</td>
</tr>
<tr>
<td>February</td>
<td>1173</td>
<td>1173</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>52.12</td>
<td>1.04</td>
<td>1548277</td>
<td>4207</td>
<td>2827</td>
</tr>
<tr>
<td>March</td>
<td>1177</td>
<td>1176</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>50.93</td>
<td>1.10</td>
<td>1735930</td>
<td>4044</td>
<td>3509</td>
</tr>
<tr>
<td>April</td>
<td>1146</td>
<td>1139</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>52.77</td>
<td>0.54</td>
<td>1605282</td>
<td>4024</td>
<td>2897</td>
</tr>
<tr>
<td>May</td>
<td>1148</td>
<td>1135</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>52.69</td>
<td>0.59</td>
<td>1588805</td>
<td>3728</td>
<td>2774</td>
</tr>
<tr>
<td>June</td>
<td>1132</td>
<td>1095</td>
<td>23</td>
<td>0</td>
<td>0</td>
<td>50.23</td>
<td>1.31</td>
<td>1488157</td>
<td>3576</td>
<td>2574</td>
</tr>
<tr>
<td>July</td>
<td>1094</td>
<td>1094</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>48.74</td>
<td>0.63</td>
<td>1516924</td>
<td>3205</td>
<td>2383</td>
</tr>
<tr>
<td>August</td>
<td>1066</td>
<td>1058</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>48.09</td>
<td>0.71</td>
<td>1472926</td>
<td>3434</td>
<td>2555</td>
</tr>
<tr>
<td>September</td>
<td>1090</td>
<td>1082</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>49.12</td>
<td>0.76</td>
<td>1456996</td>
<td>3495</td>
<td>2516</td>
</tr>
<tr>
<td>October</td>
<td>1019</td>
<td>835</td>
<td>180</td>
<td>0</td>
<td>0</td>
<td>49.89</td>
<td>1.00</td>
<td>1462544</td>
<td>2786</td>
<td>2073</td>
</tr>
<tr>
<td>November</td>
<td>1020</td>
<td>1019</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>53.91</td>
<td>0.84</td>
<td>1417009</td>
<td>3643</td>
<td>2623</td>
</tr>
<tr>
<td>December</td>
<td>1119</td>
<td>1117</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>55.30</td>
<td>0.64</td>
<td>1609352</td>
<td>4122</td>
<td>3067</td>
</tr>
</tbody>
</table>

Projected total annual TEL cumulative flow estimate (m3)*: 16154974

- Monthly average
- Monthly total

* Estimate

Not included in "Monthly Total Average Gas Flow" (column B)