OVERVIEW

W12A LANDFILL SITE
ODOUR MANAGEMENT PROGRAM
# Table of Contents

Facility Description ..................................................................................................................................... 3  
Facility Operational Philosophy ................................................................................................................ 3  
Odour Management Strategy ..................................................................................................................... 3  
Staff Training and Awareness .................................................................................................................... 5  
Additional Odour Management Activities Undertaken ............................................................................. 5  
Odour Complaint Tracking and Reporting .................................................................................................. 6  
Engagement and Dialogue with Local Community Regarding Facility Management and Operation ........................................................................................................................................ 7
OVERVIEW – W12A LANDFILL SITE
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Facility Description

The W12A Landfill is located at 3502 Manning Drive in the City of London approximately 1.5 kilometres west of Wellington Road. The landfill is bounded by White Oak Road to the west, Manning Drive to the south and agricultural land to the north and east. All adjacent properties to the north and east of the landfill are owned by the City of London.

The landfill accepts waste for landfilling generated within the City of London the Municipality of Thames Centre, Lake Huron and Elgin Area Water Treatment Plants and the TRY Recycling Environmental Processing Centre on the northeast boundary of the city.

In addition, the W12A Landfill has a Household Special Waste (HSW) facility and a public drop-off depot for household garbage, appliances, blue box recyclables, brush, cardboard, electronics, scrap metal, tires and wood. The Household Special Waste Depot accepts waste from the City of London, the County of Middlesex (including First Nations Communities) and the County of Elgin.

The legal description of the landfill property is “Part Lots 18, 19, 20 in Concession 6 in the City of London and County of Middlesex designated as Parts 1, 2, 3, 4, 5, 6, 7, 8 and 9 on Expropriation Plan 42196”.

Facility Operational Philosophy

The City of London Solid Waste Management Division conducts operations under a philosophy of continuous improvement. In accordance with this, the City has previously undertaken design enhancement trials and continues to evaluate, review and initiate design and operational enhancements intended to improve the overall function and operation of the landfill.

Odour Management Strategy

The City of London Odour Management Strategy (Strategy) for the W12A Landfill Site (Site) is a site specific program that includes daily operational practices, engineering control elements and policies and programs endorsed by City Council. The strategy is not specifically listed as part of the Environmental Compliance Approvals (ECAs) for the Site however certain elements of the Strategy such as the various engineering controls (i.e. landfill gas collection and flaring system, and leachate collection and disposal system) are approved by the Ministry of the Environment, Conservation & Parks (MECP) via the Design and Operations Report and the ECAs for the Site.

The Strategy is comprised of three categories which are summarized in the following table with further description of the associated activities within each category.
<table>
<thead>
<tr>
<th>Odour Control Category</th>
<th>Activity</th>
<th>Intent</th>
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</table>
| Daily Operational Activities | • Daily Cover  
• Limit Size of Working Face  
• Standard Operating Protocols (SOPs) for Certain Wastes (Asbestos & Bioset) | • Minimize Potential for Localized Fugitive Emissions |
| Site Engineering Controls | • Landfill Gas Collection and Flaring System  
• Annual Surface Emission Survey  
• Leachate Collection and Disposal System | • Capture, Destroy and Prevent Odour from W12A       |
| Policies and Programs | • Community Enhancement and Mitigative Measures Program  
• W12A Land Strategy | • Establish, Maintain and Increase Land Buffer       |

Category 1 - Daily Operational Activities:

- Interim and Daily Cover - cover material is placed on all active and inactive tipping faces to control odour. Interim cover is placed on temporarily deactivated tipping faces, while daily cover is placed and removed from active tipping faces at the start and at the end of each day’s waste disposal activities.

- Final Capping – areas that have reached the maximum design elevation for waste disposal are capped with a combination of clay and top soil and then seeded. This is done to contain odours, and reduce the production of leachate.

- Standard Operating Protocols (SOPs) for Disposal of Certain Wastes (Asbestos and Bioset) – specific disposal requirements and the general nature of certain waste types have the potential for fugitive odour emissions as such SOPs have been developed to minimize the potential for emissions to occur and to ensure these waste types are handled consistently once received.

Category 2 – Site Engineering Controls:

- Landfill Gas Collection and Flaring System – the system consists of a series of landfill gas extraction wells connected to a flare. Landfill gas is collected via centrifugal fans that apply a vacuum to the extraction wells. The landfill gas that is collected is destroyed by burning it in the flare.

- Annual Surface Emission Survey - as part of the operation and maintenance of the Landfill Gas Collection and Flaring System (LGCFS) an annual surface emission survey is completed to ensure that the LGCFS is operating as designed and effectively controlling gas emissions.
Leachate Management – leachate is continuously removed from the Site through the leachate collection system and pumped via a forcemain system to the City’s Greenway wastewater treatment plant. Removal of leachate as it is generated limits the potential for odour generation.

Category 3 – Policies and Programs:

- Community Enhancement and Mitigative Measures Program – the program is part of the City’s overall efforts to reduce and address the negative effects of the Site on neighbouring properties and is comprised of the following three components:
  - Property Value Protection and Property Acquisition Plan (including Right of First Refusal payments to nearby neighbours);
  - Community Mitigative Measures (fund for projects and programs to enhance community around Site); and
  - Public Liaison Committee (forum for general community and Site neighbours to provide direct feedback to the City on the general operation of the Site).

- W12A Landfill Land Strategy – Council has endorsed a land strategy to establish and maintain an appropriate land buffer around the Site to limit encroachment of incompatible land uses.

Staff Training and Awareness

All management and supervisor staff have received training and are aware of the components of the Odour Management Strategy. In addition all current management and supervisory staff have attended an odour screening and training program (2012) designed and conducted by Ortech Environmental. The components of the program focused on the categories of odour detection and monitoring:

- Odour detection screening
- Odour intensity screening
- Odour characterization screening
- Odour survey training

The goal of the program was to determine if the staff undertaking screening and training were within acceptable tolerances (i.e. not overly or under sensitive to odour detection), and to be aware of the elements of completing odour survey’s.

Additional Odour Management Activities Undertaken

Over the last approximately 3.5 years the City has undertaken design enhancement trials of the landfill gas collection and flaring system as an attempt to enhance odour management measures at the Site. An overview of the design enhancements are provided below.
Increased Landfill Gas Extraction Well Density:
- The radius between landfill gas extraction wells was reduced to increase the gas extraction well density in newly capped areas. As of July 2018, there are 61 active gas extraction wells installed and 9 connections to maintenance holes. Map 13 in the 2017 Annual Status Report for the Site shows the extent of the landfill gas collection system installed at the site (provided at the end of this document).

Installation of Geomembrane over Leachate Collection System in Waste Disposal Cell 6 North Pilot Project:
- In October 2015, as a pilot project, a geomembrane was placed on the exposed leachate collection system on the west side of cell 6 north to prevent air from intruding into the leachate collection system. This in theory allows gas to be drawn for the three leachate collection clean-out pipes on the north end of cell 6 north. This increased gas flow in the landfill gas collection and flaring system. A picture of the installation is presented below.

Odour Complaint Tracking and Reporting

All odour complaints received by City staff where the complainant indicates that the source of odour is the landfill site are summarized and recorded each year in the Annual Status Report for the Site that is submitted to the MECP for review. Submission of the Annual Status Report is a requirement of the ECAs of the Site.

A copy of the Annual Status Report is also provided to the Chair of the W12A Public Liaison Committee (W12A PLC) for review. Odour complaints can be conveyed by the
general public to City staff (either Site operations staff or staff at other City offices) at any time via phone or email.

A summary of the odour complaints received and reported for the period of 2014 through to the end of June 2018 is presented in the graph below. This includes complaints brought directly to the attention of MECP and forwarded to the City of London.

![Graph showing odour complaints from 2014 to 2018]

**Engagement and Dialogue with Local Community Regarding Facility Management and Operation**

Through ongoing local resident engagement via the W12A PLC, the City has been able to maintain a constructive and informed relationship with the local community. In addition to the formalized information exchange of the W12A PLC, Site operations staff regularly correspond directly with individuals in the local community to address any questions or concerns.

Examples include requests for illegal dumping clean-ups, questions about general daily operations, and general Site use. This more frequent and informal interaction with the local community by Site operations staff suggests a degree of trust from the local community that any concerns or questions they have will be addressed appropriately and in a timely manner. The W12A PLC has met 47 times since its inception in 2010.
Notes:
1) Aerial Photography, April 2017
2) Site Features prepared by Callon Dietz Inc. LTD, October 19, 2016
3) Landfill gas collection system as-built information by Comcor February 6, 2017.