

Attachment 1

Odour Abatement Operations at Green Lane Landfill

Last Updated: February 16, 2021

There have been two comprehensive air quality monitoring programs at Green Lane Landfill conducted by qualified consultants, one completed in 2010¹ and the other in 2019². The programs did not monitor odour, however both confirmed that the ambient air emissions from Green Lane Landfill are not harmful to human health.

Odours from landfills generally cause temporary or intermittent nuisance effects. If very strong and prolonged, odours can have more adverse impacts. Odours may originate from refuse and/or landfill gas. Refuse odours may be caused by waste decomposition, or from types of waste that are inherently odorous, or both. Landfill gas is made up of about 50 percent carbon dioxide and 50 percent methane. These gases are colourless and non-odorous. However, landfill gas also contains trace amounts of odorous gas compounds such as hydrogen sulphide, ammonia and mercaptans. These gases can produce very strong odours at very low concentrations.

Process for Monitoring and Mitigating Odours at Green Lane Landfill

The current process for monitoring odours at Green Lane Landfill is for City and contracted staff to conduct daily tours of the vicinity around the site mainly during operating hours and to record any odour detected by nose. The daily odour tours assist staff in assessing and/or confirming any off-site odours. If odours are noted, a full, detailed description of intensity, type of odour (i.e. landfill gas, refuse, or a combination of both), and where these odours were detected, are recorded and shared amongst key staff at the Green Lane Landfill to ensure all staff are aware of an odour being detected.

In order to mitigate odour resulting from landfill gas, landfill gas collection infrastructure (i.e. horizontal collection trenches and vertical collection wells) is being installed at an aggressive rate at Green Lane Landfill in efforts to apply collection to as great an area of the landfill as possible. Currently, approximately 82 percent of the site has landfill gas collection infrastructure. Additional horizontal trenches and vertical wells are being installed during Q1 of 2021 with additional installations planned for later in 2021.

Interim clay cover, topsoil and vegetation is also applied to as much of the site as possible to assist in reducing the ambient emissions of uncollected landfill gas. This overlaying of the waste mound contains the gas thereby allowing the collection system to gather more gas versus resulting in more emissions.

The source of refuse odours is the active landfilling area. In order to mitigate these odours, the active area is maintained in as small a footprint as possible. The application of daily cover soils on newly placed waste and the application of cover soils to waste slopes also help to prevent the release of these types of odours.

Odour Complaints Received at Green Lane Landfill

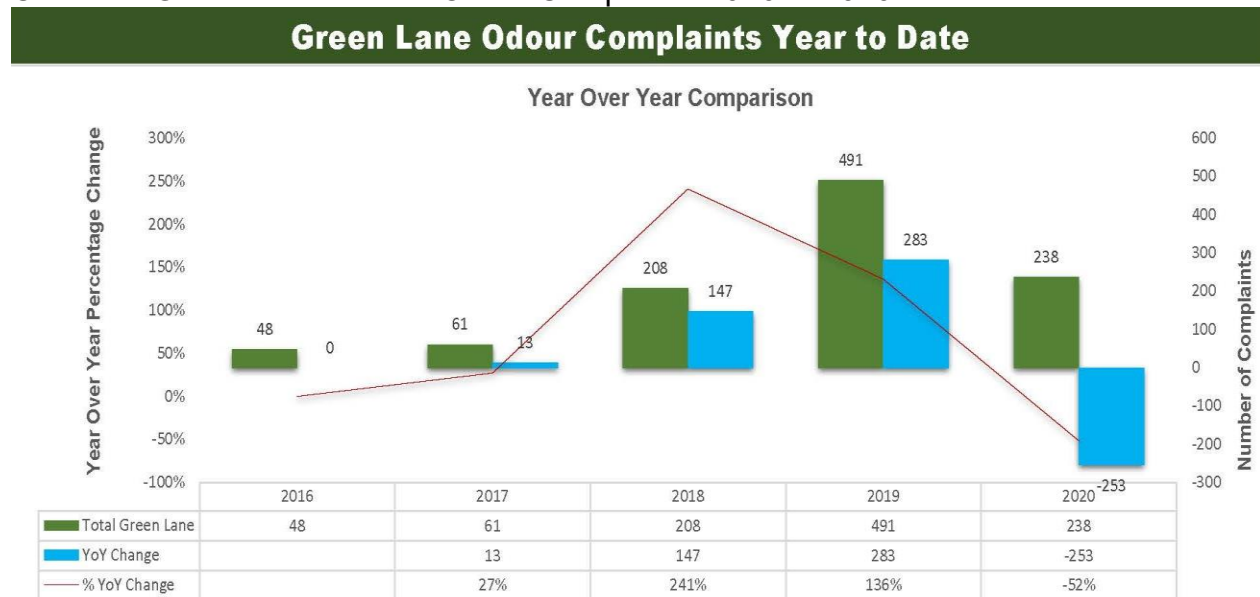
¹ Conestoga-Rovers & Associates (2010) *Air Quality Monitoring Report, Green Lane Landfill, City of Toronto*. Internal Solid Waste Management Services report: unpublished.

² Golder Associates Ltd. (2019) *Technical Memorandum, Air Quality Sampling Results - Green Lane Landfill, London, ON*. Internal Solid Waste Management Services report: unpublished.

All complaints received directly to Green Lane Landfill (in-person or through telephone), or through the Ministry are recorded, reported, investigated and responded to by City staff. If the complaint is received during standard operating hours, the location from where the complaint originated is visited and an odour tour conducted. Details of each complaint are compared against factors such as wind direction, weather conditions, and activities at Green Lane Landfill to attempt to assess and identify the source of reported odour. As required under the Green Lane Landfill Environmental Compliance Approval, all complaints are reported to the Ministry's Spills Action Centre as soon it is feasible to do so, as well as reported to the London District Office of the Ministry. All complaints received are also included in Annual Progress Reports submitted to the Ministry.

Chart 1 below provides a year over year comparison of odour complaints received in regards to Green Lane Landfill between 2016 and 2020. There were 491 complaints received in 2019 and 238 complaints received in 2020, demonstrating a reduction in total complaints of 52 percent.

Chart 1 – Green Lane Landfill Odour Complaints 2016 to 2020



The chart identifies an increase in complaints in 2018. There were increased odours in 2018 and 2019, mainly due to unforeseen weather conditions (i.e. excessive precipitation over long time periods) which caused a delay in the construction of a landfill cell in the western area of the site in 2018. This meant that waste had to be landfilled in increasingly confined areas and that landfill gas collection infrastructure could not be advanced, resulting in landfill gas odours. At this time, the City retained a consultant to conduct an odour study and provide recommendations. There were fifteen recommendations under the categories of waste handling and filling, odour response and tracking and landfill gas operation and construction, all of which have been implemented at Green Lane Landfill in efforts to mitigate off-site odours³. These odour concerns were eliminated in 2019 by completion of the cell in the western area, thereby

³ The City of Toronto, Solid Waste Management Services (2019) *Green Lane Landfill, Enhanced odour Control Strategy October 2019*. Internal Solid Waste Management Services report: unpublished.

providing alternative landfilling areas as contingency, for approximately the next four years. Significant time was required after completion of the cell to advance the landfill gas collection infrastructure, and to connect and collect the accumulated and added landfill gas quantities. To date, the frequency of reported complaints continues to decrease.