Fact Sheet

Barrier and Passive Venting System at the City of Barrie's Historic Waste Site 6

The Project

A landfill gas passive venting system is being constructed at the City of Barrie's Historic Waste Site 6, an inactive landfill located on the north side of Dyment's Creek at the west end of Frederick Street, between Innisfil Street and John Street. The system includes the following components:

- An **underground vertical barrier wall** (200 metres long and approximately 2.5 metres below grade) consisting of interlocking steel sheet piles that will be installed along the north and east border of the inactive landfill.
- A **venting system** to collect and vent the gas (methane) that gathers along the inactive landfill side of the barrier wall using three vent stacks (see Figure 1). Perforated tubing will run along the full length of the barrier wall and will connect to the vent stacks which will be placed in locations where they will be least visible from adjacent properties. Each vent stack will have a port covered with a removable steel plate to allow monitoring of landfill gas concentrations as required.

Figure 2 shows the location of the wall, the vent stacks and the historical landfill site boundaries.

Background Information

In 2017, the City of Barrie and their consultant, Golder Associates Ltd., undertook investigations to assess the risk of landfill gas migration to properties adjacent to the inactive landfill. The investigation included monitoring of landfill gas concentrations at gas probes installed along the boundary of the inactive landfill. The investigation indicated elevated methane concentrations along the north and east boundaries, and it was recommended that remediation be undertaken to limit risk of impacting off-site properties. A barrier and passive venting system was selected as the best alternative.

Figure 1: An example of the vent stacks that will be installed as part of the system.

Environmental Compliance Approval

The system requires an Environmental Compliance Approval for air emissions under Section 9 of the *Environmental Protection Act* to be granted by the Ministry of the Environment, Conservation and Parks (MECP). The Environmental Compliance Approval was issued by the MECP in June 2019. The studies conducted in support of the application demonstrated the air emissions from the historic landfill remain in compliance with the applicable limits.

Site Preparation and Rehabilitation

The site preparation for the installation of the barrier wall and venting system will include clearing and grubbing of trees along the alignment of the barrier wall. Tree trunks and branches will be cut on-site and transported to the City of Barrie Landfill.

Site rehabilitation will involve placement of topsoil and grass seed over the disturbed areas as well as planting of trees.

Construction

Construction of the system will occur during the fall of 2019 and will take approximately nine weeks. Hours of construction will be from **8:00 a.m. to 6 p.m., Monday to Friday.**

Along most of the barrier wall, the sheet piles will be installed in potentially contaminated silty sand fill. Waste fill materials and natural sand and peat materials are the primary soil conditions along the length of the wall. The loose nature of these materials, coupled with the fairly shallow depth of the barrier wall, will allow the sheet piles to be pushed into the ground using an excavator as opposed to driving the piles using a large impact hammer. This construction method will result in a quicker and less noisy installation.

An increase in ambient noise levels, construction traffic, heavy machinery and dust may be noticed by adjacent and nearby residents during construction activities. All work will comply with the City of Barrie Noise By-law, and efforts have been made as part of planning of the construction approach to minimize nuisance effects related to noise, dust and odour.

Public access to the historic landfill's open area will be restricted during construction.

How Does the System Help?

Once built, the barrier wall and venting system will prevent any potential movement of landfill gas onto neighbouring properties. It will run 24 hours a day, 365 days a year. The barrier wall will block potential gas movement and the three vent stacks will exhaust the gas passively (no motorized parts will be used to move the gas to the atmosphere). There will be minimal noise associated with the operation of the vent stacks. There may be an odour that comes from the stacks, but it's expected to be significantly below emission guidelines.

The wall and venting system is a precautionary measure to ensure landfill gas does not affect residents or their homes in the future. It is a proactive step to ensure the community meets or exceeds environmental compliance and regulations.

Landfill gas concentrations will continue to be monitored at existing gas probes on City-owned land to assess the effectiveness of the system and to determine if additional measures are required.

Contact Information

Project updates will be available at www.barrie.ca/HistoricLandfills. Any questions, comments or concerns regarding construction activities can be directed to:

- Jamie Bonany at 705-790-5666, or
- Frank Barone at 416-568-2812

All other inquiries can be directed to Sandra Brunet, Manager of Environmental Operations, City of Barrie, at sandra.brunet@barrie.ca or 705-739-4220 ext. 6140.