

2022 Annual Report, Former Ramsay Township Landfill



Provisional Certificate of Approval No. A451702

March 27, 2023

Prepared for:
The Municipality of Mississippi Mills

Cambium Reference: 10944-001

CAMBIUM INC.

866.217.7900

cambium-inc.com

Peterborough | Barrie | Oshawa | Kingston | Ottawa



Executive Summary

The Former Ramsay Township Landfill operated as a natural attenuation landfill until closure in 1996. The site is owned by the Municipality of Mississippi Mills and operates under Provisional Certificate of Approval No. A451702. The site is on east half of Lot 6, Concession IV, geographic township of Ramsay, Mississippi Mills, Lanark County, about 5 km west of the Town of Carleton Place. At the time of closure, the existing limit of waste was 1.3 ha within a total site area of 4.68 ha. The Municipality owns contaminant attenuation zones to the north, west, and south of the waste mound.

This report presents the results of the 2022 activities that were completed at the Former Ramsay Township Landfill. The report and activities have been completed and reported on in general conformance with the November 2010 Ministry of the Environment Technical Guidance Document entitled *Monitoring and Reporting for Waste Disposal Sites – Groundwater and Surface Water*. The Monitoring and Screening Checklist is provided in Appendix A.

Groundwater flow in the bedrock is toward the north and west, with a minor component of flow to the south in both the contaminant attenuation zone and the east portion of the landfill. Although overburden groundwater flow is radial from the mound, it is predominantly toward the north and west, and topography restricts migration of leachate impacted groundwater in these directions. Overall, the horizontal hydraulic gradients on-site are very minor indicating a mostly flat-water table that is susceptible to minor shifts in direction due to seasonal variations.

A groundwater leachate plume exists beneath the waste mound. The primary leachate migration in the overburden is to the north and west where it discharges to surface or migrates down into the fractures in the bedrock unit.

Natural attenuation is occurring at the site as concentrations decrease with distance from the waste mound. Outside sources such as wetland environments and road de-icing activities are influencing the water quality at many monitoring wells. No site related impacts were present at the farthest down-gradient off-site monitoring wells to the north.



Historical exceedances of compliance criteria continued to the east of the site in 2022. The Municipality continued to investigate options to acquire additional land and/or groundwater rights to increase the contaminant attenuation zone and thereby address these groundwater compliance issues.

Exceedances in the surface water north/northwest of the waste mound were attributed to high sediment content associated with heavy rainfall events in the spring. The surface water trigger was not activated in 2022.

All landfill gas measurements at the perimeter monitoring wells were less than 2.5% methane by volume in 2022.

The Municipality managed the Former Ramsay Township Landfill in compliance with the Provisional Certificate of Approval in 2022.

Recommendations have been made regarding the future monitoring of the site and work to be completed in 2023.

Respectfully submitted,

Cambium Inc.

Stephanie Reeder, P.Geo., C.E.T.
Senior Project Manager/Hydrogeologist

