



# SUMMARY OF RESULTS

DATE: March 17, 2025  
MEMO TO: Kerstin Vroom  
FROM: Tim McBride  
RE: 2024 Annual Monitoring Report, Chapman Waste Disposal Site, Magnetawan, Ontario  
PINCHIN FILE: 225335.008

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Pinchin Ltd. (Pinchin) was retained by the Corporation of the Municipality of Magnetawan (Client) to prepare the 2024 annual groundwater and surface water monitoring report for the Chapman Waste Disposal Site (the Site) to assess the hydraulic media for contaminants of concern as a compliance requirement under the Site Certificate of Approval (CofA) Number **A521202** and the applicable regulatory requirements.

As per previous annual monitoring events, groundwater and surface water was sampled twice annually by Pinchin during 2024, in the spring and fall.

Seven overburden groundwater monitoring wells have historically been utilized at the Site (BH1, BH2, BH3, BH4, BH5-II, BH6-II and BH7-II). As part of the leachate management plan study completed by Pinchin, several additional monitoring wells were installed at the Site during September 2018 to support the existing monitoring well network. This included the addition of two new background wells (BH11 and BH3-II) to replace the previously destroyed BH3, one cross-gradient well (BH10-I), deeper nested wells at two existing monitoring locations which are consistently dry (BH4-II and BH6-III) and two additional downgradient wells (BH8-I and BH9-I). Additionally, four surface water locations were monitored for the Site (SW1, SW2, SW3 and SEEP).

All wells were inspected during 2024 and found to be in good condition. No wells displayed evidence of a condition non-compliant with Ontario Regulation 903. During the fall 2024 monitoring event, Pinchin modified monitoring wells BH1 and BH3-II which had PVC riser too tall to close the casing lid.

The Site currently operates as a typical natural attenuation waste disposal facility. No liner or other leachate collection/management system is in place at the Site. The 2019 Leachate Management Plan Study report indicated that a leachate-impacted groundwater seep/spring had been identified in a downgradient area (east of the Site, upstream from SW3 and in the vicinity of well BH9) resulting in the discharge of said waters to an adjacent surface water feature. This discharge essentially short circuits the natural attenuation process and has the potential to have negative effects on the surface water feature. The Corporation of the Municipality of Magnetawan initiated a proactive approach to leachate management and retained Pinchin to complete the Leachate Management Plan Study. The surface water quality data collected for the study indicated that an impact



from the leachate seep is being observed in the two adjacent creeks, and it was recommended that steps should be taken to eliminate the seep.

These steps include infilling the incised valley and relocating the creek to eliminate the seep, creating an extended CAZ boundary for additional leachate attenuation to occur prior to discharge to surface water bodies.

As part of the 2019 Leachate Management Study Report completed by Pinchin in April 2019, a trigger level monitoring program and contingency plan was proposed for the Chapman Waste Disposal Site which is to be implemented at the Site following the elimination of the seep. The proposed Trigger Level Monitoring Program is a three-tiered program that includes routine monitoring (i.e., the semi-annual monitoring program), compliance monitoring and confirmation monitoring. While this trigger level monitoring program has been developed following industry standard/best management practices, it is subject to revision. The trigger level program is in the process of being developed as a stand-alone document in consultation with the MECP.

Site compliance was evaluated based on the MECP's Guideline B-7 criteria. Based on the results obtained from the existing groundwater monitoring wells and surface water monitoring locations, Pinchin has not identified any significant landfill related impacts at the Site. Concentrations of pH, TDS, iron, nitrate, DOC, aluminum and manganese parameters within the groundwater samples analyzed at the furthest downgradient monitoring locations (BH5-II, BH6-III, BH7-II, BH8-I and BH9-I) which exceeded the Guideline B-7 criteria are likely attributed to either naturally occurring conditions within the shallow unconfined aquifer on-site, or from temperate impacts from leachate sourced from the waste deposits at the Site.

All exceedances of the Guideline B-7 RUC are related to operational guidelines and/or aesthetic objectives associated with drinking water systems set by the ODWQS and are not considered to be an immediate significant human health or environmental concern originating from the Site with the exception of nitrate which is a health-related parameter. The elevated concentrations of nitrate are only quantified in some downgradient wells and often fluctuate throughout the historical record; seasonal fluctuations are also observed with higher concentrations quantified during the fall events. These concentrations are generally stable or decreasing, but should be confirmed during the next monitoring period. Furthermore, concentrations of nitrate quantified at the downgradient groundwater wells are not interpreted to be impacting the surface water quality at the Site as nitrate concentrations are observed to be at low levels at downstream monitoring locations SW3 (near-field) and SW2 (far-field).

Based on a review of the existing dataset and regulatory requirements to date, Pinchin recommends the following:

- Continue with routine monitoring of all the available groundwater monitoring wells and surface water monitoring locations during the spring and fall. Groundwater and surface water monitoring shall be completed with analyses for the parameters identified in the historical monitoring record. Monitoring well BH4-II should also be analyzed for mercury and VOCs. Considering the dataset completed thus far, it is Pinchin's opinion that sampling should continue in 2025 before the adequacy of the monitoring program can be fully evaluated;



- Surveyed elevations at monitoring wells BH1 and BH3-II will require adjustment for the 2025 groundwater elevation calculations by reducing the survey elevation by the measured length of cut PVC;
- Rehabilitation of the SEEP should be initiated in order to address the potential associated impacts to the adjacent surface water receptor; and
- The Client should continue to ensure that the requirements as specified in the CofA are complied with.