SUMMARY OF RESULTS

DATE: February 6, 2023

MEMO TO: Kerstin Vroom

FROM: Tim McBride

RE: 2022 Annual Monitoring Report, Croft Waste Disposal Site, Magnetawan, Ontario

PINCHIN FILE: 225335.006

Pinchin Ltd. (Pinchin) was retained by the Corporation of the Municipality of Magnetawan (Client) to prepare the 2022 annual groundwater and surface water monitoring report for the Croft 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 **A7034002** and the applicable regulatory requirements.

The current groundwater monitoring well network at the Site consists of eight bedrock groundwater monitoring wells (BH1, BH8, BH9, BH10, BH11, BH12, BH13, and BH14) and three drive point monitors (DP7, DP8, and DP9). All wells were inspected in 2022 and found to be in good condition. No wells displayed evidence of a condition non-compliant with Ontario Regulation 903. Additionally, three surface water locations were monitored for the Site (SW1, SW2 and SW3).

As per previous annual monitoring events, groundwater and surface water was sampled twice annually by Pinchin during 2022, in the spring and fall.

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. Elevated concentration parameters within the groundwater samples analyzed at the furthest downgradient monitoring locations (i.e. BH8, BH9, BH12, BH13, and BH14) 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 at the downgradient wells considered representative of the property boundary 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. The elevated concentrations of boron are only quantified in the immediate vicinity of the waste deposits within well BH10. These concentrations are interpreted to attenuate with further distance from the Site. In summary, the current 2022 groundwater monitoring data collected from the historical monitoring network, and further supported by the newly installed (i.e., 2019) groundwater monitoring wells installed near the property boundary, indicate that the Site is continuing to effectively operate as designed, as a

natural attenuation type facility, with any landfill derived groundwater impacts attenuated to acceptable levels prior to the downgradient property boundaries.

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. Groundwater and surface water monitoring shall be completed with analyses for the parameters identified in the historical monitoring record. It is recommended that groundwater and surface water monitoring be completed during the spring and late fall to generate a baseline data set, to evaluate trends, and to determine the need and scope of a long-term monitoring program for the Site. Considering the dataset completed thus far, it is Pinchin's opinion that sampling should continue in 2023 before the adequacy of the monitoring program can be fully evaluated;
- The Client should continue to ensure that the requirements as specified in the CofA are complied with;
- In the future, the component of the surface water samples identified for the analysis of aluminum should be filtered prior to analysis, in order to provide a clay free sample (as per the requirements of the PWQO); and
- It is recommended that the drive point well locations DP7, DP8, and DP9 be removed from the sampling program as these locations have consistently been found to have insufficient volume to sample. It is recommended that these wells should be retained as water level only monitoring locations to supplement the groundwater elevation monitoring for the Site; however, the drive point monitors should be equipped with appropriate lockable caps to ensure representative water level data is obtained.