ANNEX F9 INVESTIGATION REPORTS OF ENVIRONMENTAL QUALITY LIMIT EXCEEDANCE

Investigation Report of Environmental Quality Limit Exceedance	
Project	South East New Territories (SENT) Landfill Extension
Date	5 February 2025
Time	MWX-7: 11:35 MWX-8: 11:22
Monitoring Location	MWX-7, MWX-8
Parameter	MWX-7: Chemical Oxygen Demand (COD) MWX-8: Ammoniacal-nitrogen
Limit Level	COD: MWX-7: >36 mg /L Ammoniacal-nitrogen: MWX-8: >15.85 mg /L
Measured Level	COD: MWX-7: 39 mg /L Ammoniacal-nitrogen: MWX-8: 16.4 mg /L
Possible reason	Groundwater contaminated with leachate is commonly characterized by high ammoniacal-nitrogen and COD levels as a result of degradation of organic matters in the waste. The ammoniacal-nitrogen monitoring result at groundwater monitoring wells MWX-7 (5.0 mg/L) and the COD monitoring results of the groundwater monitoring wells adjacent to MWX-7 (MWX-6: 37 mg/L and MWX-8: 48 mg/L) are well within the respective limit levels. The ammoniacal-nitrogen monitoring results of the groundwater monitoring wells adjacent to MWX-8 (MWX-9: 0.54 mg/L) is well within the respective limit levels. Hence, there are a low possibility of the elevation of ammoniacal-nitrogen level at MWX-8 and the elevation of COD level at MWX-7 are due to leachate contamination from SENTX operation or at least they are not conclusive to base on these results to demonstrate exceedances were due to leachate contamination. In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 3 March 2025 to confirm findings. Ammoniacal-nitrogen concentration of 13.7 mg/L (below the Limit Level) was measured at MWX-8 and COD concentration of 34 mg/L (below the Limit Level) was measured at MWX-7 during the sampling event, which demonstrate no consecutive groundwater quality impact at the monitoring locations. According to the findings of the desktop review commissioned by GVL and EPD (the Employer) in May 2021 to investigate the potential sources of the elevated methane levels at the perimeter landfill gas monitoring wells at SENTX, pockets of organic matters are identified in the fill materials of the SENTX site upon review of the historical site investigation borehole logs at the Project Site area. It is possible that the elevated ammoniacal-nitrogen at MWX-8 and COD concentration measured at MWX-7 on 5 February 2025 could be due to localised organic matters within or around the monitoring well and background fluctuation.

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	Due to the presence of influencing factor from non-project source, there is no adequate evidence showing that the ammoniacal-nitrogen measured at MWX-8 and COD level exceedances measured at MWX-7 on 5 February 2025 should be deemed as Project-related activities. It should also be noted that although the COD level exceeded the limit level of the EM&A programme, it is still well within the WPCO effluent discharge limit of COD (80 mg/L) and the standard for effluents discharged into the inshore waters of the Junk Bay Water Control Zone as stipulated under Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (80 mg/L). The slight exceedance of ammoniacal-nitrogen at MWX-8 and COD at MWX-7 on 5 February 2025 will not cause adverse water quality impact to the Junk Bay Water Control Zone.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Levels. ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.
Remarks	-

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