

Annex F6

Investigation Reports of
Environmental Quality
Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	11 April 2022
Time	MWX-4: 14:52 MWX-5: 14:30 MWX-6: 10:02
Monitoring Location	MWX-4, MWX-5, MWX-6
Parameter	Chemical Oxygen Demand (COD)
Limit Levels	MWX-4: >36 mg /L MWX-5: >30 mg /L MWX-6: >46 mg /L
Measured Level	MWX-4: 40 mg /L MWX-5: 43 mg /L MWX-6: 60 mg /L
Possible reason	<p>Groundwater contaminated with leachate is commonly characterized by high COD and ammoniacal-nitrogen levels as a result of degradation of organic matters in the waste. The groundwater quality (ammoniacal-nitrogen) monitoring results at MWX-4 (5.20 mg/L), MWX-5 (4.71 mg/L) and MWX-6 (4.14 mg/L) are well within the respective limit levels (MWX-4: 7.63 mg/L, MWX-5: 5.00 mg/L, MWX-6: 5.00 mg/L). Hence, there is a low possibility that the elevation of COD level at MWX-4, MWX-5 and MWX-6 are due to leachate contamination from SENTX operation or at least it is not conclusive to base on these results to demonstrate exceedances were due to leachate contamination.</p> <p>In accordance with Table 4.5b of the updated EM&A Manual, repeat measurement was conducted on 11 and 18 May 2022 to confirm findings. COD concentrations of 24 mg/L, 15 mg/L and 44 mg/L (below the respective Limit Level) were measured at MWX-4, MWX-5 and MWX-6, respectively during the sampling event, which demonstrate no consecutive groundwater quality impact at the monitoring locations.</p> <p>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 COD concentrations measured at MWX-4 (with detection of elevated levels of methane (up to 11.6% v/v)), MWX-5 (with detection of elevated levels of methane (up to 2.5% v/v)) and MWX-6 (with detection of elevated levels of methane (up to 12.2% v/v) and in close proximity to LFG13, which shows elevated methane levels continuously) on 11 April 2022</p>

	<p>could be due to localised organic matters within or around the monitoring wells and background fluctuation.</p> <p>Due to the presence of influencing factor from non-project source and the subsequent month monitoring results at MWX-4, MWX-5 and MWX-6 did not show any exceedances, there is no adequate evidence showing that the COD level exceedances measured at MWX-4, MWX-5 and MWX-6 on 11 April 2022 were deemed to Project-related activities.</p> <p>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 exceedances of COD at MWX-4, MWX-5 and MWX-6 on 11 April 2022 will not cause adverse water quality impact to the Junk Bay Water Control Zone.</p>
Action Taken / Action to be Taken	<p>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.</p> <p>ET will continue to closely monitor the groundwater quality monitoring results and collect additional data for investigation and further review, if necessary.</p>
Remarks	-

Prepared by: Abbey Lau
 Designation: Environmental Team
 Date: 7 June 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	25 May 2022
Time	14:46 and 14:58 (Duplicate)
Monitoring Location	DP4
Parameter	Surface Water (Suspended Solids (SS))
Limit Level	>20 mg/L
Measured Level	DP4: 31.8 mg /L DP4 (Duplicate): 30.9 mg /L
Possible reason	<p>From the on-site rainfall record of May 2022, heavy rainfall events were recorded on 22 to 24 May 2022 before the sampling event.</p> <p>No works which may lead to potential SS increase (e.g. active stockpiling and excavation works) was conducted in the vicinity of surface water channel leading to DP4 on the sampling day based on on-site observations and construction activities described by the Contractor.</p> <p>Site surface runoff at DP4 channel was treated by the Wetsep prior to discharge. Yet during the weekly site inspection in the morning and the sampling event, it was observed that the Wetsep was not functioning properly with reference to the on-site checking of the treated water at the outlet of the processing chamber of the Wetsep.</p> <p>During the sampling event, no raining was recorded and no other sources (e.g. Clearwater Bay Country Park, other project sites) was identified in the vicinity of surface water channel leading to DP4T which might cause the SS exceedance at DP4. Contaminated runoff from the unpaved areas during the previous rainfall events could also be the potential source of SS contributing to the exceedance. The SS exceedance at DP4 was therefore deemed to Project-related activities.</p>
Action Taken / Action to be Taken	<p>The monitoring frequency shall be increased to weekly in accordance with Table 4.5b of the updated EM&A Manual until no exceedance of Limit Level.</p> <p>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.</p> <p>In addition, the Contractor shall review the efficiency of the Wetsep near sediment trap and monitor the Wetsep operation regularly to ensure it is functioning properly at all times.</p>

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Prepared by: Abbey Lau

Designation: Environmental Team

Date: 20 June 2022

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	30 June 2022
Time	11:15
Monitoring Location	DP4
Parameter	Surface Water (Suspended Solids (SS))
Limit Level	>20 mg/L
Measured Level	28.2 mg /L
Possible reason	<p>From the on-site rainfall record of June 2022, heavy rainfall events were recorded on 29 and 30 June 2022 before the sampling event.</p> <p>No works which may lead to potential SS increase (e.g. active stockpiling and excavation works) was conducted in the vicinity of surface water channel leading to DP4 on the sampling day based on on-site observations and construction activities described by the Contractor.</p> <p>Site surface runoff at DP4 channel was treated by the Wetsep prior to discharge. During the sampling event, no raining was recorded and no other sources (e.g. other project sites) was identified in the vicinity of surface water channel leading to DP4 which might cause the SS exceedance at DP4. Contaminated runoff from the unpaved areas during the previous rainfall events could be the potential source of SS contributing to the exceedance. The SS exceedance at DP4 was therefore deemed to Project-related activities.</p> <p>It should be noted that although the measured SS level exceeded the limit level of the EM&A programme, it is still within the WPCO effluent discharge limit of SS for the Junk Bay Water Control Zone (30 mg/L). The discharge of surface water with this SS level from DP4 will not cause adverse water quality impact to the Junk Bay Water Control Zone.</p>
Action Taken / Action to be Taken	<p>Weekly surface water quality monitoring (SS) shall be continued at DP4 until no exceedance of Limit Level in accordance with Table 4.5b of the updated EM&A Manual.</p> <p>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.</p> <p>In addition, the Contractor shall review the efficiency of the Wetsep near sediment trap and monitor the Wetsep operation regularly to ensure it is functioning properly at all times.</p>

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Prepared by: Abbey Lau

Designation: Environmental Team

Date: 19 July 2022