

Annex D7

Investigation Reports of
Environmental Quality
Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

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| Project | South East New Territories (SENT) Landfill Extension |
| Date | 14 October 2022 |
| Time | 12:09 – 12:39 |
| Monitoring Location | Landfill Gas Flare 1 (F601) |
| Parameter | Sulphur Dioxide (SO ₂) |
| Limit Levels | >0.22 g/s |
| Measured Level | 0.26 g/s |
| Possible reason | <p>As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (NO₂, CO, Benzene, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 14 October 2022 were well within the respective limit levels. It is possible that the slight exceedance of SO₂ limit level measured on 14 October 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event and excess SO₂ was formed from the oxidation of trace quantities of sulphur compounds in the landfill gas. Hence, the SO₂ exceedance at Landfill Gas Flare 1 (F601) on 14 October 2022 is considered to be Project related.</p> <p>In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 17 November 2022 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 6 December 2022) to confirm findings. Exceedance of SO₂ Limit Level was recorded at Landfill Gas Flare 1 (F601) (1.27 mg/L) during the sampling event. Landfill Gas Flare 1 (F601) showed consecutive exceedance of the landfill gas flare stack emission limit (SO₂).</p> <p>It should be noted that although the measured SO₂ level exceeded the limit level of the EM&A programme (which was set based on the stack design parameters), the slight exceedance of SO₂ on 14 October 2022 will not cause adverse air quality impact to the identified ASRs as the anticipated SO₂ concentrations at the identified ASRs will still be well below the respective AQO criteria with reference to the findings of the operational air quality impact assessment of the SENTX Environmental Review Report.</p> |
| 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 closely monitoring the operating conditions of the |

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| | flare to avoid any exceedance of the Limit Levels. The Contractor is also reminded to adjust the inlet flow and quality of the LFG during the routine gas well monitoring to ensure complete oxidation of the sulphur compounds (e.g. H ₂ S) in the landfill gas during LFG flaring. |
| Remarks | - |

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 27 December 2022

Investigation Report of Environmental Quality Limit Exceedance

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| Project | South East New Territories (SENT) Landfill Extension |
| Date | 17 November 2022 |
| Time | 13:25 – 13:55 |
| Monitoring Location | Landfill Gas Flare 1 (F601) |
| Parameter | Sulphur Dioxide (SO ₂) |
| Limit Levels | >0.22 g/s |
| Measured Level | 1.27 g/s |
| Possible reason | <p>As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (NO₂, CO, Benzene, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 17 November 2022 were well within the respective limit levels. It is possible that the slight exceedance of SO₂ limit level measured on 17 November 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event and excess SO₂ was formed from the oxidation of trace quantities of sulphur compounds in the landfill gas. Hence, the SO₂ exceedance at Landfill Gas Flare 1 (F601) on 17 November 2022 is considered to be Project related.</p> <p>In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 13 December 2022 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 9 January 2023) to confirm findings. The SO₂ concentration (0.16 g/s) measured on 13 December 2022 is well below Limit Level. There is no consecutive exceedance of SO₂ concentrations in the flue gas emission of Landfill Gas Flare 1 (F601).</p> |
| 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 closely monitoring the operating conditions of the flare to avoid any exceedance of the Limit Levels. The Contractor is also reminded to adjust the inlet flow and quality of the LFG during the routine gas well monitoring to ensure complete oxidation of the sulphur compounds (e.g. H ₂ S) in the landfill gas during LFG flaring. |
| Remarks | - |

Prepared by: Abbey Lau
 Designation: Environmental Team
 Date: 10 January 2023

Investigation Report of Environmental Quality Limit Exceedance

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|-----------------------------------|---|
| Project | South East New Territories (SENT) Landfill Extension |
| Date | 13 December 2022 |
| Time | 13:24 - 13:54 |
| Monitoring Location | Landfill Gas Flare 1 (F601) |
| Parameter | Benzene |
| Limit Levels | >0.000414 g/s |
| Measured Level | 0.000661 g/s |
| Possible reason | <p>As confirmed by the Contractor, Landfill Gas Flare 1 (F601) was under normal operating conditions during the sampling event. The landfill gas flare emission monitoring results (SO₂, NO₂, CO, Vinyl chloride, gas combustion temperature, exhaust temperature and exhaust gas velocity) at Landfill Gas Flare 1 (F601) on 13 December 2022 were well within the respective limit levels. It is possible that the slight exceedance of benzene limit level measured on 13 December 2022 could be due to some short-term system instability (e.g. insufficient air, short gas residence time or ineffective mixing of landfill gas and air during the combustion) during the sampling event. Hence, the benzene exceedance at Landfill Gas Flare 1 (F601) on 13 December 2022 is considered to be Project related.</p> <p>In accordance with Table 3.8b of the updated EM&A Manual, repeat measurement was conducted on 17 January 2023 (it should be noted that the turnaround time of the laboratory analysis of the flue gas sample is 3 weeks and the results were available on 9 February 2023) to confirm findings. The benzene concentration (<0.000180 g/s) measured on 17 January 2023 is well below Limit Level. There is no consecutive exceedance of benzene concentrations in the flue gas emission of Landfill Gas Flare 1 (F601).</p> |
| 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 closely monitoring the operating conditions of the flare to avoid any exceedance of the Limit Levels. |
| Remarks | - |

Prepared by: Abbey Lau
 Designation: Environmental Team
 Date: 20 February 2023