Annex F4

Investigation Reports of Environmental Quality Limit Exceedance

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	8 May 2019
Time	15:20
Monitoring Location	DP6
Parameter	Surface Water (pH)
Action / Limit Levels	Action level: >8.39 Limit level: >9.40
Measured Level	DP6: 9.24 & 9.29
Possible reason	According to the site record on 8 May 2019 provided by the Contractor, concrete for bar bending yield, which might be a potential source of pH increase, and excavation for temporary drainage channel near DP6 channel were carried out in the vicinity of DP6. However, during the sampling event, no construction works in the vicinity of DP6 and no potential surface water discharge or overflow to DP6 channel were observed. A temporary trench and berm were constructed along the DP6 channel to collect the surface runoff which was further treated by the Wetsep prior to discharge. Wetsep near DP6 was functioning properly with reference to the Wetsep operation record on 8 May 2019. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. In addition, part of the DP6 channel was relocated to hill side and the construction of this part of DP6 channel was completed on 15 April 2019. The concrete of the relocated DP6 channel should have been well settled on the sampling day which shall not be the potential source leading to the increase of pH of the surface water. Based on the above, there is no adequate evidence showing that the pH exceedance at DP6 was deemed to Project-related activities. The exceedance might be caused by other influencing factors from the upstream areas. The nearest weekly site inspection was carried out on 9 May 2019 to audit the site practices and mitigation measures, where applicable mitigation measures on surface water quality were found implemented yet with deficiencies. The Contractor was reminded to review the drainage system near DP6 to avoid accumulation of stagnant water and ensure the Wetsep is functioning at all times.
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 Level.

	In addition, the Contractor shall review (i) the efficiency, treatment capacity and the number of the Wetsep at DP6, and (ii) the drainage system of the whole site to avoid potential direct discharge or overflow of site water to DP6 channel.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 5 June 2019

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	8 May 2019
Time	15:20
Monitoring Location	DP6
Parameter	Surface Water (Suspended Solids (SS))
Action / Limit Levels	Action level: >11.7 mg/L Limit level: >12.7 mg/L
Measured Level	DP6: 70.8 mg/L
Possible reason	According to the site record on 8 May 2019 provided by the Contractor, concrete for bar bending yield and excavation for temporary drainage channel near DP6 channel, which might be a potential source of SS increase, were carried out in the vicinity of DP6. However, during the sampling event, no construction works in the vicinity of DP6 and no potential surface water discharge or overflow to DP6 channel were observed. A temporary trench and berm were constructed along the DP6 channel to collect the surface runoff which was further treated by the Wetsep prior to discharge. Wetsep near DP6 was functioning properly with reference to the Wetsep operation record on 8 May 2019. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. Based on the above, there is no adequate evidence showing that the SS exceedance at DP6 was deemed to Project-related activities. The exceedance might be caused by other influencing factors from the upstream areas (e.g. Clearwater Bay Country Park). The nearest weekly site inspection was carried out on 9 May 2019 to audit the site practices and mitigation measures, where applicable mitigation measures on surface water quality were found implemented yet with deficiencies. The Contractor was reminded to review the drainage system near DP6 to avoid accumulation of stagnant water and ensure the silt removal facility is functioning at all times.
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 Level. In addition, the Contractor shall review (i) the efficiency, treatment capacity and the number of the Wetsep at DP6, and (ii) the drainage system of the whole site to avoid potential direct discharge or overflow of site water to DP6 channel. The

	Contractor shall also review the design of the DP6 channel near the hillside (e.g. maintain sufficient set back from the site boundary and proper trapezoidal channel structure) to minimize the potential surface runoff to DP6 channel from the Country Park.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 5 June 2019

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	23 May 2019
Time	DP3: 14:39 and 15:02 (Duplicate) DP4T: 15:55 DP6: 15:35
Monitoring Location	DP3, DP4T and DP6
Parameter	Surface Water (pH)
Action / Limit Levels	DP3: Action level: >8.88 Limit level: >9.28 DP4T and DP6: Action level: >8.39 Limit level: >8.40
Measured Level	DP3: 9.96 & 9.98 DP3 (Duplicate): 9.78 & 9.79 DP4T: 10.92 & 10.80 DP6: 9.65 & 9.60
Possible reason	DP3: No construction works were carried out at the SENT Landfill restored area (i.e. catchment of DP3 within the Project boundary) and in the vicinity of DP3 with reference to the site record on 23 May 2019. The absence of works might suggest that the pH exceedance at DP3 is deemed to activities that are not related to the Project. The exceedance might be caused by other influencing factors from the upstream areas (e.g. existing SENT Landfill and Clearwater Bay Country Park). DP4T: Concreting work was observed being carried out at the sediment trap area, which might be a potential source of pH increase. The concrete at the sediment trap area may not be well settled and washed off on the sampling day due to the rainy weather which might be a potential source leading to the increase of pH of the surface water. The surface water at the sediment trap area was observed to be further pumped to a temporary holding area at Cell 2 and discharged to the DP4T channel. The water was not treated by the Wetsep prior to discharge to the DP4T. Based on the above, the pH exceedance at DP4T was deemed to Project-related activities. DP6: According to the site record on 23 May 2019 provided by the Contractor, the works in the vicinity of DP6 channel included filling up at western perimeter bund and stockpile at Cell 1X, erection of formwork and repair of footing at GVL building &

	leachate treatment plant areas, which were not potential sources of pH increase. During the sampling event, no construction works in the vicinity of DP6 was observed. Besides, weekly site inspection was carried out in the morning of the same day of sampling event to audit the site practices and mitigation measures, where applicable mitigation measures on surface water quality were found implemented. Yet during the sampling event (occurred after the rainfall), it was observed that not all surface runoff discharged to the channel leading to DP6 was treated by the Wetsep due to insufficient capacity of the Wetsep near DP6. The Contractor was reminded to review the treatment capacity and the number of the Wetsep at DP6. Since there was no potential source leading to pH increase from the Project-related activities and with applicable mitigation measures implemented, there is no adequate evidence showing that the pH exceedance at DP6 was deemed to Project-related activities. The exceedance might be caused by other influencing factors.
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 Level. In addition, the Contractor shall review (i) the drainage system of the whole site to avoid potential direct discharge or overflow of contaminated surface water runoff to DP4T channel, and (ii) the treatment capacity and the number of the Wetsep at DP6.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 12 June 2019

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	23 May 2019
Time	DP3: 14:39 and 15:02 (Duplicate) DP4T: 15:55 DP6: 15:35
Monitoring Location	DP3, DP4T and DP6
Parameter	Surface Water (Suspended Solids (SS))
Action / Limit Levels	DP3: Action level: >209.3 mg/L Limit level: >217.0 mg/L DP4T and DP6: Action level: >11.7 mg/L Limit level: >12.7 mg/L
Measured Level	DP3: 858 mg/L DP3 (Duplicate): 838 mg/L DP4T: 191 mg/L DP6: 696 mg/L
Possible reason	DP3: No construction works were carried out at the SENT Landfill restored area (i.e. catchment of DP3 within the Project boundary) and in the vicinity of DP3 with reference to the site record on 23 May 2019. The absence of works might suggest that the SS exceedance at DP3 is deemed to activities that are not related to the Project. The exceedance might be caused by other influencing factors from the upstream areas (e.g. existing SENT Landfill and Clearwater Bay Country Park). DP4T: During the weekly site inspection in the morning, muddy water was observed at the sediment trap area which was pumped to a temporary holding area for retention at Cell 2 and further discharged to the DP4T channel. The water was not treated by the Wetsep prior to discharge. This is a potential source of SS to the surface water at DP4T. Based on the above, the SS exceedance at DP4T was deemed to Project-related activities. DP6: During the sampling event, no construction works in the vicinity of DP6 was observed. However, two stockpiles of dusty materials was observed to be placed at the hill side of the DP6 channel and exposed soil was observed next to the DP6 channel (not being covered by impermeable sheet or the runoff in the area will pass through any

	silt trap). These are the potential sources of SS increase in the surface water. Besides, during the sampling event (occurred after the rainfall), it was observed that not all muddy surface runoff discharged to the channel leading to DP6 was treated by the Wetsep due to insufficient capacity of the Wetsep near DP6. Based on the above, the SS exceedance at DP6 was deemed to Project-related activities.
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 Level. In addition, the Contractor shall (i) remove/cover the stockpiles of dusty materials and exposed soil areas near DP6, (ii) review the treatment capacity and the number of the Wetsep at DP6, and (iii) review the drainage system of the whole site to avoid potential direct discharge or overflow of muddy surface runoff to DP4T and DP6 channels.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 12 June 2019

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	30 May 2019
Time	DP4T: 15:48 DP6: 15:19
Monitoring Location	DP4T and DP6
Parameter	Surface Water (pH)
Action / Limit Levels	DP4T and DP6: Action level: >8.39 Limit level: >8.40
Measured Level	DP4T: 8.84 & 8.90 DP6: 8.68 & 8.71
Possible reason	DP4T: During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should be carried out. From the on-site rainfall record of May 2019, consecutive days (25 – 29 May 2019) of rainfall were recorded before the sampling event on 30 May 2019. Heavy rainfall events were recorded on 23 & 28 May 2019 and site staff of the Contractor reported that during these events, backflow of muddy water from downstream well passed DP4T along the channel. The site rainfall record showed that there was little rainfall on 30 May 2019. It is therefore a high possibility that the high level of water observed at DP4T was due to backflow water from the TKO Fill Bank. The sample taken at DP4T on the day might not represent the surface water runoff from SENTX and further upstream. In addition, after checking the site record of 30 May 2019 provided by the Contractor, the works in the vicinity of surface water channel leading to DP4T included erecting formwork and kicker and ratification to the scaffolding system at sediment trap, which are not potential sources of pH increase. Due to presence of the influencing factor from the downstream and no potential source leading to pH increase from the Project-related activities, there is no adequate evidence showing that the pH exceedance at DP4T was deemed to Project-related activities. DP6: During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should

	be carried out. From the on-site rainfall record of May 2019, consecutive days (25 – 29 May 2019) of rainfall were recorded before the sampling event on 30 May 2019. Heavy rainfall events were recorded on 23 & 28 May 2019 and site staff of the Contractor reported that during these events, backflow of muddy water from downstream well passed DP6 along the channel. The site rainfall record showed that there was little rainfall on 30 May 2019. It is therefore a high possibility that the high level of water observed at DP6 was due to backflow water from the TKO Fill Bank. The sample taken at DP6 on the day might not represent the surface water runoff from SENTX and Clearwater Bay Country Park. In addition, after checking the site record of 30 May 2019 provided by the Contractor, the works in the vicinity of the channel leading to DP6 included stockpiling at Cell 1X (which was also observed during the sampling event) and lifting operation and cleaning to fixed steel at leachate treatment plant areas, which are not potential sources of pH increase. Due to presence of the influencing factor from the downstream and no potential source leading to pH increase from the Project-related activities, there is no adequate evidence showing that the pH exceedance at DP6 was deemed to Project-related activities.
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 Level. In addition, the Contractor shall review (i) review the drainage system of the site and discuss the drainage issues of the TKO Fill Bank with CEDD so that there will be no backflow of surface water runoff from TKO Fill Bank to the SENTX boundary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 19 June 2019

Investigation Report of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	30 May 2019
Time	DP4T: 15:48 DP6: 15:19
Monitoring Location	DP4T and DP6
Parameter	Surface Water (Suspended Solids (SS))
Action / Limit Levels	DP4T and DP6: Action level: >11.7 mg/L Limit level: >12.7 mg/L
Measured Level	DP4T: 32.2 mg/L DP6: 244 mg/L
Possible reason	DP4T: During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should be carried out. From the on-site rainfall record of May 2019, consecutive days (25 – 29 May 2019) of rainfall were recorded before the sampling event on 30 May 2019. Heavy rainfall events were recorded on 23 & 28 May 2019 and site staff of the Contractor reported that during these events, backflow of muddy water from downstream well passed DP4T along the channel. The site rainfall record showed that there was little rainfall on 30 May 2019. It is therefore a high possibility that the high level of water observed at DP4T was due to backflow water from the TKO Fill Bank. The sample taken at DP4T on the day might not represent the surface water runoff from SENTX and further upstream. In addition, after checking the site record of 30 May 2019 provided by the Contractor, the works in the vicinity of surface water channel leading to DP4T included erecting formwork and kicker and ratification to the scaffolding system at sediment trap, which are not potential sources of SS increase. During the weekly site inspection in the morning of the same day of sampling event, muddy water was observed at the sediment trap area which was pumped to a temporary holding area for retention at Cell 2 before further discharged to the DP4T channel. Due to presence of the influencing factor from the downstream and no potential source leading to SS increase from the Project-related activities, there is no adequate evidence showing that the SS exceedance at DP4T was deemed to Project-related activities.

	DP6: During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should be carried out. From the on-site rainfall record of May 2019, consecutive days (25 – 29 May 2019) of rainfall were recorded before the sampling event on 30 May 2019. Heavy rainfall events were recorded on 23 & 28 May 2019 and site staff of the Contractor reported that during these events, backflow of muddy water from downstream well passed DP6 along the channel. The site rainfall record showed that there was little rainfall on 30 May 2019. It is therefore a high possibility that the high level of water observed at DP6 was due to backflow water from the TKO Fill Bank. The sample taken at DP6 on the day might not represent the surface water runoff from SENTX and Clearwater Bay Country Park. In addition, after checking the site record of 30 May 2019 provided by the Contractor, the works in the vicinity of the channel leading to DP6 included stockpiling at Cell 1X (which was also observed during the sampling event) and lifting operation and cleaning to fixed steel at leachate treatment plant areas, which are not potential sources of SS increase. However, environmental deficiencies were observed. During the sampling event, a stockpile of dusty materials was observed placing at the hill side of the channel leading to DP6 and exposed soil was observed next to the channel (not being covered by tarpaulin sheet or the muddy runoff in the area did pass through any silt trap). Besides, during the sampling event, it was observed that not all muddy surface runoff discharged to the channel leading to DP6 was treated by the Wetsep due to insufficient capacity of the Wetsep near DP6. The Contractor was reminded to review the channel design and drainage system, remove/cover and minimize the stockpiles and exposed soil, and review the treatment capacity and the number of the Wetsep at DP6. Due to presence of the influencing factor from the downstream, there is no adequate evidence showing that the SS exceedance at DP6 was only deemed to Project-related activities.
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 Level.

	In addition, the Contractor shall (i) review the channel design and drainage system, (ii) remove/cover and minimize the stockpiles and exposed soil, (iii) review the treatment capacity and the number of the Wetsep at DP6, and (iv) discuss the drainage issues of the TKO Fill Bank with CEDD so that there will be no blackflow of surface water runoff from TKO Fill Bank to the SENTX boundary.
Remarks	-

Prepared by: Abbey Lau
Designation: Environmental Team
Date: 19 June 2019