

Investigation Report for Exceedances of Limit Levels of Water Quality Monitoring on 19 April 2023

Investigation was carried out in response to exceedances of limit levels during the water quality monitoring on 19 April 2023. The following table summarizes details of the exceedances.

Environmental Team for Hung Shui Kui/ Ha Tsuen New Development Area Stage 1 Works – Site Formation and Engineering Infrastructure								
Date	Station	Parameter (Unit)	Depth-averaged Measured Value	Action Level	Limit Level	Exceedance		Project Related (Y/N)
						AL	LL	
19/04	TKW1	Turbidity (NTU)	212.0	27.9	29.2		✓	N
	TKW		282.0	24.2	24.6		✓	N
	HT		60.9	32.3	32.6		✓	N
	TKW1	Suspended Solids (SS) (mg/L)	37.5	16.0	18.4		✓	N
	TKW		66.5	19.8	21.6		✓	N
	SW		11.5	9.7	9.9		✓	N

Construction activities carried out at Road D1 during the investigation period	<p>According to the information provided by the engineer representative (RE), the construction works carried out on 19 April 2023 include:</p> <ul style="list-style-type: none"> • Dewatering • Erection of formwork for box culvert wall and top slab • Demolition and removal of the existing temporary access road to Hung Shui Kiu Community Isolation Facility • General site clearance
Possible reason for Action or Limit Level Non-compliance:	<p>A site inspection was carried out by the ET on 20 April 2023. The effluent discharge license was under application. No direct effluent discharge from the site was observed during the site inspection.</p> <p>Construction works carried out on 19 April 2023 were located away from the water quality monitoring stations HT, SW, TKW1 and TKW; no water-based construction activity was conducted on 19 April 2023.</p> <p>According to the records of the Hong Kong Observatory, about 5 to 20 mm rainfall was recorded over Hung Shui Kiu on 19 April 2023, which may lead to river water with high turbidity/ suspended solids levels due to surface runoff from the catchment.</p>

	<p>As observed during the site inspection, the Contractor had implemented mitigation measures on site to control site runoff, including sump, WetSep and portable pumps for temporary storage of surface water. No evidence was found to indicate that the exceedances on 19 April 2023 were related to the site activities.</p> <p>In conclusion, the exceedances recorded on 19 April 2023 were considered non-project related.</p>
<p>Action taken / to be taken:</p>	<ol style="list-style-type: none"> 1. Repeated in-situ measurement was carried out to confirm the turbidity levels measured at TKW, TKW1 and HT. Repeated in-situ measurement was not applicable for laboratory measurement of SS level. 2. The source of impact may be related to rainfall at Hung Shui Kiu recorded on 19 April 2023, and surface runoff and effluent discharges from workshops, open storages, warehouse, private toilet(s) and/ or residential dwellings along the catchment downstream of the site. 3. A notification of exceedances has been issued to the IEC, the Contractor, and the EPD. 4. Duplicate water samples were collected at the monitoring stations and in-situ measurement was repeated. The monitoring data were checked and confirmed. All plant, equipment and the Contractor's working methods were checked during the site inspection. No non-compliance was observed. 5. As no evidence was found to indicate that the exceedances on 19 April 2023 were affected by the site activities, no additional mitigation measure was discussed with the IEC, RE and the Contractor. 6. During the site inspections, the Contractor had implemented on site measures to control site runoff. The Contractor was reminded to implement/ maintain the following mitigation measures: <ol style="list-style-type: none"> a. No direct discharge of treated/ untreated wastewater is allowed before the effluent discharge license is obtained. b. The Contractor will provide sump(s) near the WetSep to temporary store site runoff prior to treatment. c. Channels/ earth bunds/ sandbag barriers will be properly provided on site to direct site runoff to the sump(s). <p>Following the site inspection on 25 May 2023, the IEC advised that water diversion measure (which separates the upstream river water from the site runoff and effluent discharge) before passing through the box culvert should be implemented to facilitate the source identification in exceedance investigation for the water quality monitoring stations U1 and SW. The RE had also issued a reminder to the Contractor to implement the measure on 17 June 2023. The RE and ET will audit the Contractor's progress in implementation and maintenance of this and other measures during the regular weekly site inspection.</p> 7. The frequency of monitoring was not increased as the exceedance was considered non-project related.

Site Photos on 19 April 2023 provided by the Engineer

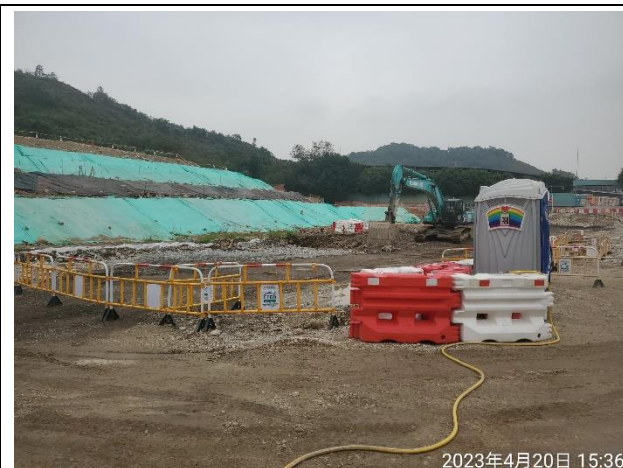


Works areas on both sides of the access road
(R1)



Works area near the box culvert (R2)

Photo Records of Site Investigation held by the ET on 20 April 2023



(P1)

Slopes and stockpiles of dusty materials were covered properly to avoid generation of muddy runoff. No muddy surface runoff and no direct effluent discharge were observed during the site inspection. No direct effluent discharge was observed during the site inspection.



(P2)

Site runoff and upstream river water were collected and pumped to WetSep on site for temporary storage and treatment. No muddy surface runoff and direct effluent discharge was observed during the site inspection.



2023年4月20日 15:28

(P3)

Surface runoff was directed to the sump pit for temporary storage. No muddy surface runoff and direct discharge of ground water was observed.



2023年4月20日 14:16

(P4)

Surface runoff and site effluent was collected and diverted to sump pit and WetSep for temporary storage and treatment before the water was reused for fugitive dust suppression on site. No direct effluent discharge was allowed.

Figure 1 Rainfall Record from Hong Kong Observatory

Total rainfall on 19-Apr-2023 (based on raingauges and radar data)

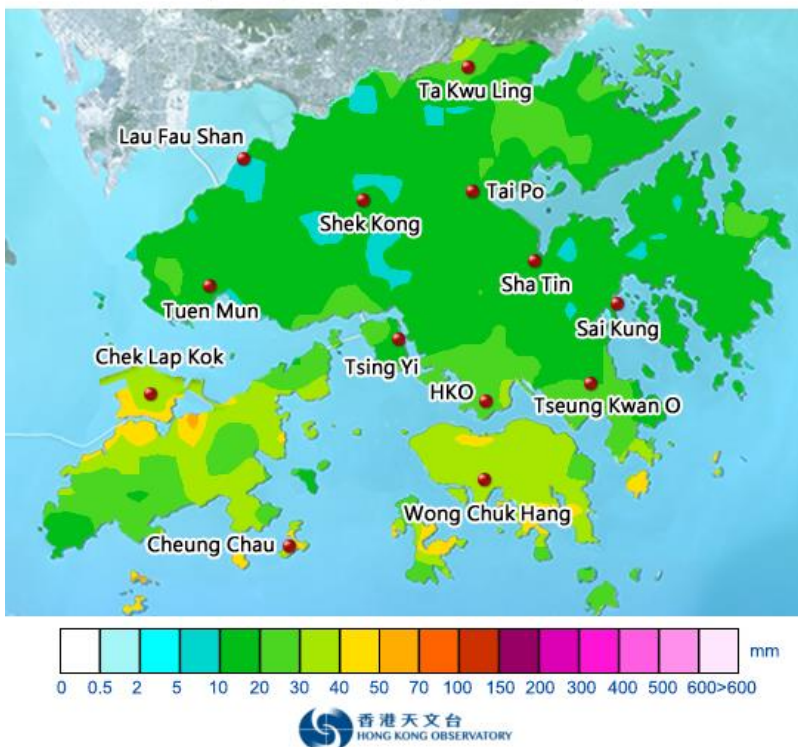
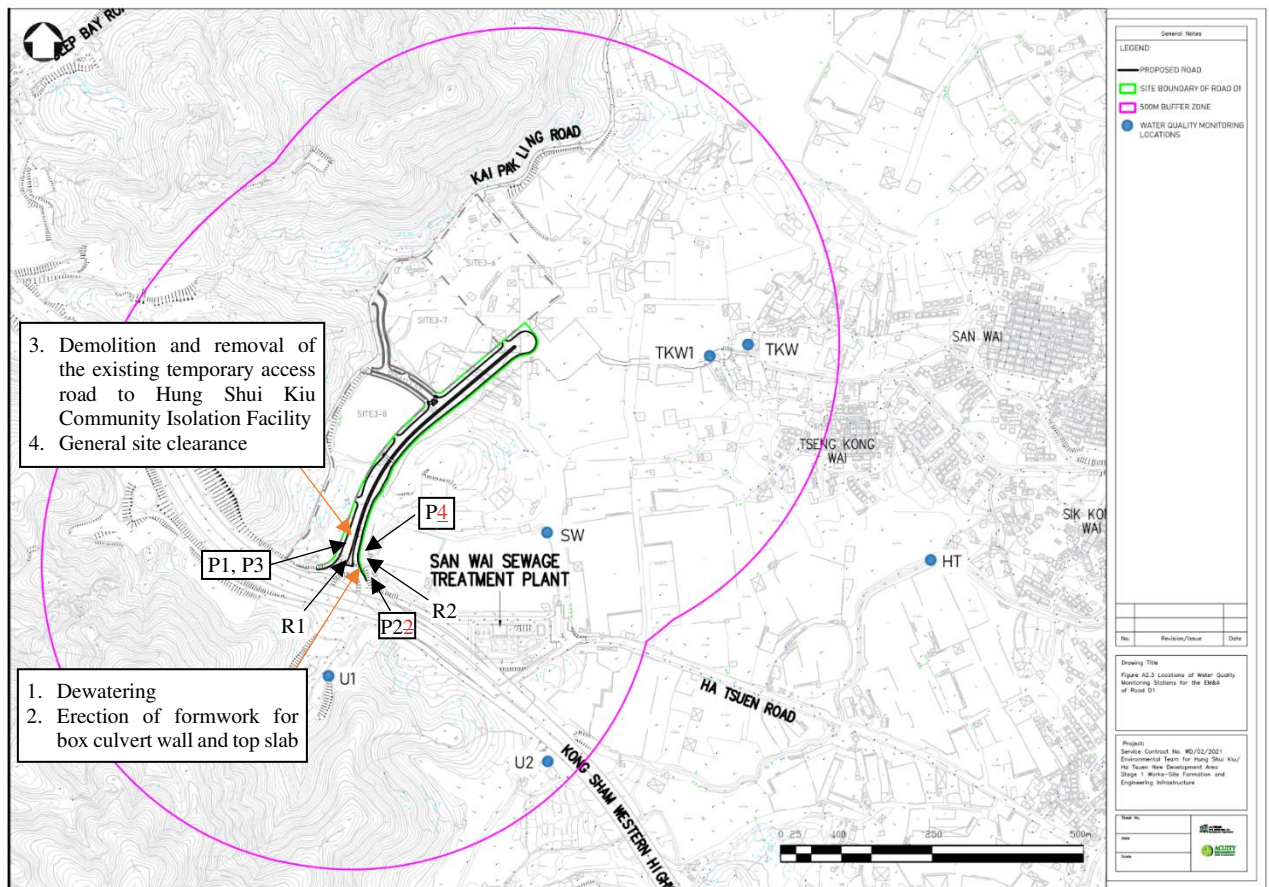


Figure 2 Location Plan of Impact Water Quality Monitoring Stations (Site activities held on 19 April 2023 were reported in text boxes)



Prepared by: Howard Chan

Certified by: F. C. Tsang

Designation: Environmental Team Member

Designation: Environmental Team Leader

Signature: 

Signature: 

Date: 25 June 2023

Date: 25 June 2023

Investigation Report for Exceedance of Limit Level of Water Quality Monitoring on 21 April 2023

Investigation was carried out in response to exceedance of limit level during the water quality monitoring on 21 April 2023. The following table summarizes details of the exceedance.

Environmental Team for Hung Shui Kui/ Ha Tsuen New Development Area Stage 1 Works – Site Formation and Engineering Infrastructure								
Date	Station	Parameter (Unit)	Depth-averaged Measured Value	Action Level	Limit Level	Exceedance		Project Related (Y/N)
						AL	LL	
21/04	TKW1	Suspended Solids (SS) (mg/L)	27.0	16.0	18.4		✓	N

Construction activities carried out at Road D1 during the investigation period	<p>According to the information provided by the engineer representative (RE), the construction works carried out on 21 April 2023 include:</p> <ul style="list-style-type: none"> • Dewatering • Casting concrete for box culvert wall and top slab • Demolition and removal of the existing temporary access road to Hung Shui Kiu Community Isolation Facility • General site clearance
Possible reason for Action or Limit Level Non-compliance:	<p>Site inspections were carried out by the ET on 20 and 28 April 2023. During the site inspections, no direct effluent discharge from the site was observed.</p> <p>Construction works carried out on 21 April 2023 were located away from the water quality monitoring station TKW1. No water-based construction activity was conducted on 21 April 2023.</p> <p>According to the Hong Kong Observatory, about 10 to 20 mm rainfall was recorded at Hung Shui Kiu on 21 April 2023, which may lead to river water with high SS level due to surface runoff from the catchment.</p> <p>As observed during the site inspections, the Contractor had implemented on site measures to control site runoff, including sump, WetSep and portable pumps for temporary storage of surface water. No evidence was found to indicate that the exceedance on 21 April 2023 was affected by the site activities.</p> <p>In conclusion, the exceedance recorded on 21 April 2023 was considered non-project related.</p>

<p>Action taken / to be taken:</p>	<ol style="list-style-type: none"> 1. Repeated in-situ measurement was not applicable for laboratory measurement of SS level. 2. The source of impact may be related to rainfall at Hung Shui Kiu recorded on 21 April 2023 and also surface runoff and effluent discharges from workshops, open storages, warehouse, and private toilet(s) along the catchment downstream of the site. 3. A notification of exceedance has been issued to the IEC, the Contractor, and the EPD. 4. Duplicate water samples were collected at the monitoring stations. The monitoring data were checked and confirmed. All plant, equipment and the Contractor’s working methods were checked during the site inspections. No non-compliance was observed. 5. As no evidence was found to indicate that the exceedance on 21 April 2023 was affected by the site activities, no additional mitigation measure was discussed with the IEC, RE and the Contractor. 6. During the site inspection, the Contractor had implemented on site measures to control site runoff. The Contractor was reminded to implement/ maintain the following mitigation measures: <ol style="list-style-type: none"> a. No direct discharge of treated/ untreated wastewater is allowed before the effluent discharge license is obtained. b. The Contractor will provide sump(s) near the WetSep to temporary store site runoff prior to treatment. c. Channels/ earth bunds/ sandbag barriers will be properly provided on site to direct site runoff to the sump(s). d. The Contractor should divert the upstream river water to bypass the site so that the river water would not mix with the site runoff within the site, hence reducing the amount of water detained within the site for temporary storage and treatment by WetSep prior to reuse on site. <p>Following the site inspection on 25 May 2023, the IEC advised that water diversion measure (which separates the upstream river water from the site runoff and effluent discharge) before passing through the box culvert should be implemented to facilitate the source identification in exceedance investigation for the water quality monitoring stations U1 and SW. The RE had also issued a reminder to the Contractor to implement the measure on 17 June 2023. The RE and ET will audit the Contractor’s progress in implementation and maintenance of this and other measures during the regular weekly site inspection.</p> 7. The frequency of monitoring was not increased as the exceedance was considered non-project related and no further exceedances of action or limit level of SS at TKW1 was detected on the subsequent water quality monitoring in April 2023.
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Site Photos on 21 April 2023 provided by the Engineer



Works area next to the access road/ Site 3-8
(R1)



Works at the box culvert (R2)

Photo Records of Site Investigations held by the ET

20 April 2023



(P1)

Slopes and stockpiles of dusty materials were covered properly to avoid generation of muddy runoff. No muddy surface runoff was observed during the excavation of the site inspection. No direct effluent discharge was observed during the site inspection.



(P2)

Site runoff and upstream river water was collected and pumped to WetSep on site for temporary storage and treatment. No muddy surface runoff and direct effluent discharge was observed during the site inspection.



2023年4月20日 15:28

(P3)

Surface runoff was directed to the sump pit for temporary storage. No muddy surface runoff and direct discharge of ground water was observed.



2023年4月20日 14:16

(P4)

Surface runoff and site effluent were collected and diverted to sump pit and WetSep for temporary storage and treatment before the water was used for fugitive dust suppression on site. No direct effluent discharge was allowed.

28 April 2023



2023年4月28日 10:41

(P5)

Stockpile of dusty materials was covered properly to avoid generation of muddy runoff. No muddy surface runoff was observed during the inspection.



2023年4月28日 10:44

(P6)

Surface runoff and site effluent were collected and diverted to sump pit and WetSep for temporary storage and treatment before the water was reused for fugitive dust suppression on site.



(P7)

Surface runoff was directed to sump pit for temporary storage. No muddy surface runoff and no direct discharge of ground water were observed.

Figure 1 Rainfall Record from Hong Kong Observatory

Total rainfall on 21-Apr-2023 (based on raingauges and radar data)

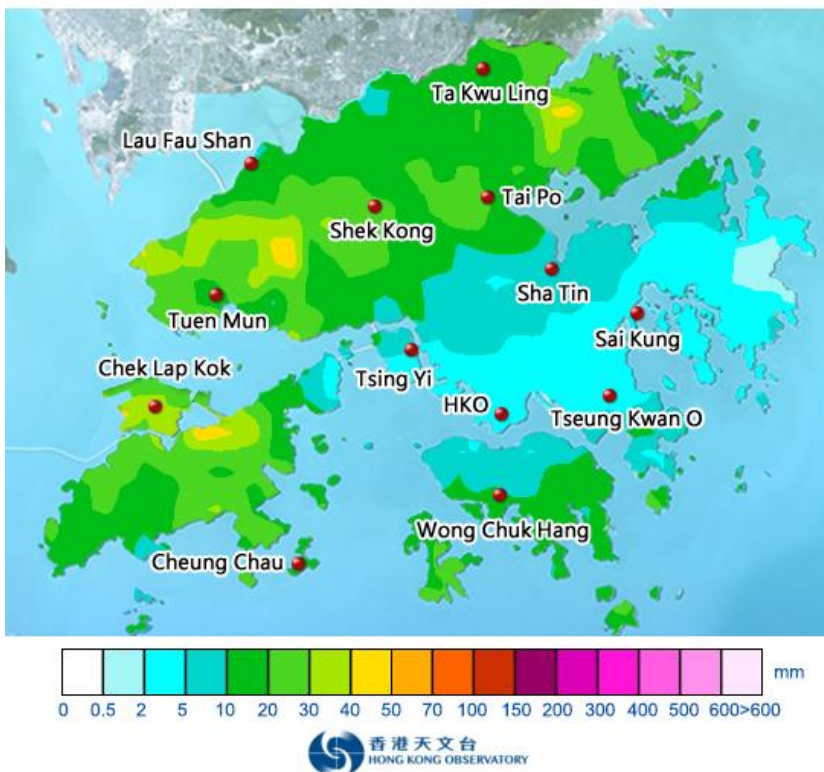
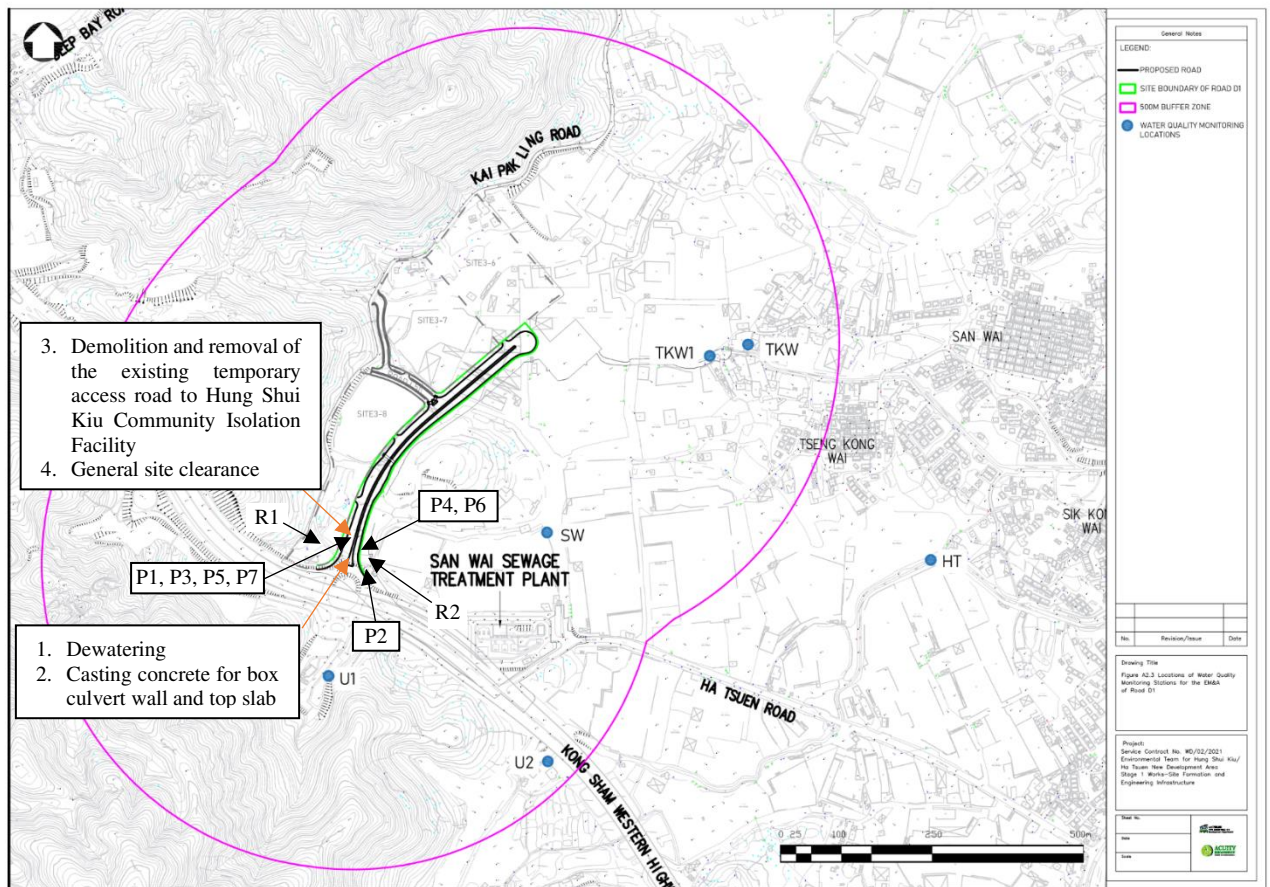


Figure 2 Location Plan of Impact Water Quality Monitoring Stations (Site activities held on 21 April 2023 were reported in text boxes)



Prepared by: Howard Chan

Certified by: F. C. Tsang

Designation: Environmental Team Member

Designation: Environmental Team Leader

Signature:

Signature:

Date

25 June 2023

Date:

25 June 2023

Investigation Report for Exceedances of Limit Level of Water Quality Monitoring on 27 April 2023

Investigation was carried out in response to exceedances of limit level during the water quality monitoring on 27 April 2023. The following table summarizes details of the exceedances.

Environmental Team for Hung Shui Kui/ Ha Tsuen New Development Area Stage 1 Works – Site Formation and Engineering Infrastructure								
Date	Station	Parameter (Unit)	Depth-averaged Measured Value	Action Level	Limit Level	Exceedance		Project Related (Y/N)
						AL	LL	
27/04	TKW1	Turbidity (NTU)	47.0	27.9	29.2		✓	N
	TKW		48.2	24.2	24.6		✓	N

Construction activities carried out at Road D1 during the investigation period	<p>According to the information provided by the RE, the construction works carried out on 27 April 2023 include:</p> <ul style="list-style-type: none"> • Dewatering • Make good temporary road • Fill tie bolt hole
Possible reason for Action or Limit Level Non-compliance:	<p>A site inspection was carried out by the ET on 28 April 2023. During the site inspection, no direct effluent discharge from the site was observed.</p> <p>Construction works carried out on 27 April 2023 were located away from the water quality monitoring station TKW1 and TKW. No water-based construction activity was conducted on 27 April 2023.</p> <p>As observed during the site inspection, the Contractor had implemented on site measures to control site runoff, including sump, WetSep and portable pumps for temporary storage and treatment of surface water and site effluent. No evidence was found to indicate that the exceedance on 27 April 2023 was affected by the site activities.</p> <p>No further exceedance of action or limit level of turbidity at TKW and TKW1 was detected during the water quality monitoring on 29 April 2023 and 2 May 2023.</p> <p>In conclusion, the exceedances recorded on 27 April 2023 were considered non-project related.</p>
Action taken / to be taken:	<p>1. Repeated in-situ measurement was carried out to confirm the turbidity levels measured at TKW and TKW1.</p>

	<p>2. As no further exceedance of action or limit level of turbidity at TKW and TKW1 was detected during the water quality monitoring on 29 April and 2 May 2023, it is considered that the source of impact may be related to surface runoff and effluent discharges from workshops, open storages, warehouse, private toilet(s), and/ or residential dwellings along the catchment downstream of the site.</p> <p>3. A notification of exceedance has been issued to the IEC, the Contractor, and the EPD.</p> <p>4. Duplicate water samples were collected at the monitoring stations and in-situ measurement was repeated. The monitoring data were checked and confirmed. All plant, equipment and the Contractor's working methods were checked during the site inspections. No non-compliance was observed.</p> <p>5. As no evidence was found to indicate that the exceedances on 27 April 2023 were affected by the site activities, no additional mitigation measure was discussed with the IEC, RE and the Contractor.</p> <p>6. During the site inspection, the Contractor had implemented on site measures to control site runoff. The Contractor was reminded to implement/ maintain the following mitigation measures:</p> <ul style="list-style-type: none">a. Surface run-off from construction sites shall be discharged at the designated discharge point as indicated in the effluent discharge license via adequately designed sand/ silt removal facilities.b. The Contractor will provide sump(s) near the WetSep to temporary store site runoff prior to treatment.c. Channels/ earth bunds/ sandbag barriers will be properly provided on site to direct site runoff to the sump(s).d. Water (either upstream river water or site runoff) detained behind the box culvert will be treated by the WetSep on site prior to discharge. <p>Following the site inspection on 25 May 2023, the IEC advised that water diversion measure (which separates the upstream river water from the site runoff and effluent discharge) before passing through the box culvert should be implemented to facilitate the source identification in exceedance investigation for the water quality monitoring stations U1 and SW. The RE had also issued a reminder to the Contractor to implement the measure on 17 June 2023. The RE and ET will audit the Contractor's progress in implementation and maintenance of this and other measures during the regular weekly site inspection.</p> <p>7. The frequency of monitoring was not increased as the exceedance was considered non-project related and no further exceedances of action or limit level of turbidity at TKW and TKW1 was detected on the following water quality monitoring on 29 April 2023 and 2 May 2023.</p>
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Site Photos on 27 April 2023 provided by the Engineer



Works area next to the access road/ Site 3-8
(R1)



Works area near the box culvert (R2)

Photo Records of Site Investigation held by the ET on 28 April 2023



(P1)

Stockpile of dusty materials was covered properly to avoid generation of muddy runoff. No muddy surface runoff was observed during the inspection.



(P2)

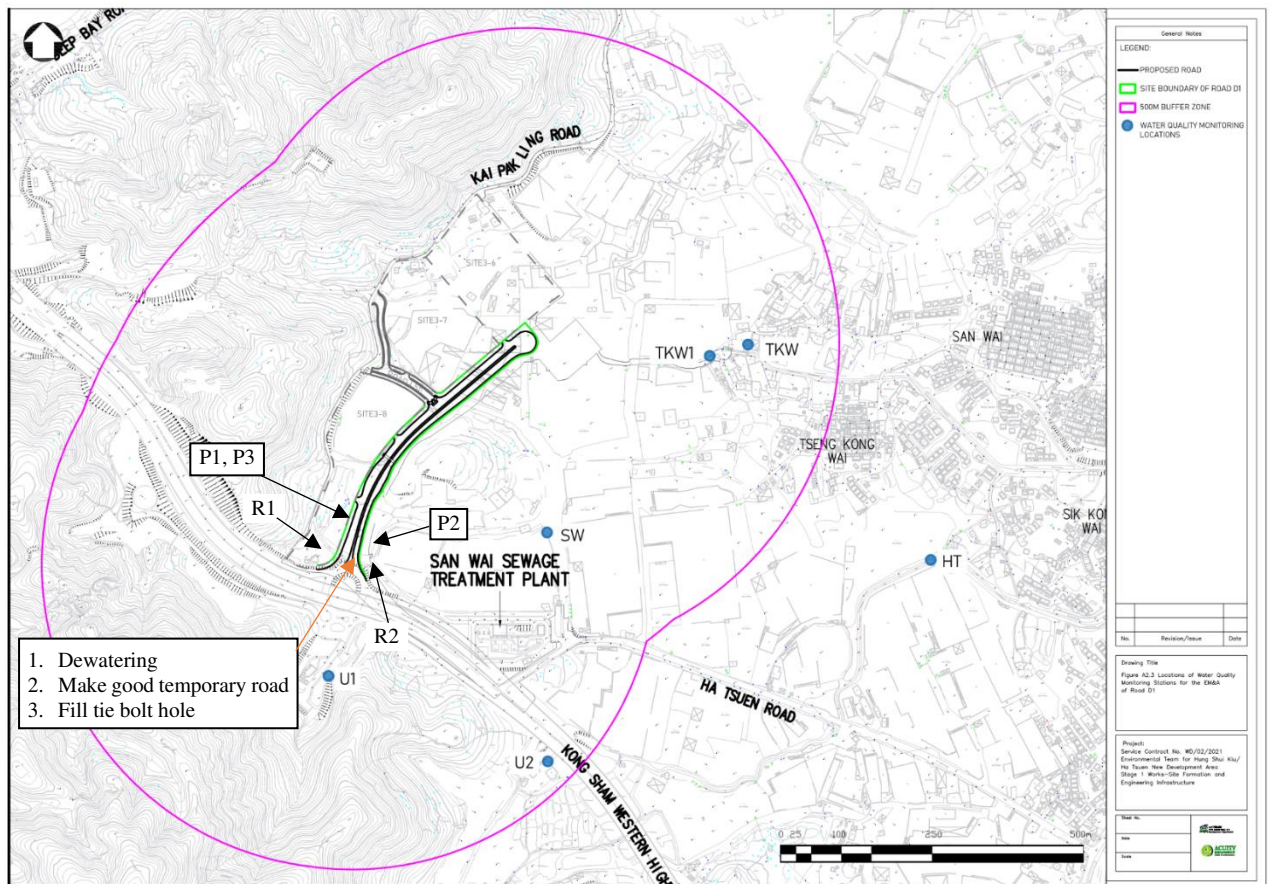
Surface runoff and site effluent were collected and diverted to the WetSep for temporary storage and treatment before the water was reused for fugitive dust suppression on site.



(P3)

Surface runoff was directed to sump pit for temporary storage. No muddy surface runoff and no direct discharge of ground water were observed.

Figure 1 Location Plan of Impact Water Quality Monitoring Stations (Site activities held on 27 April 2023 were reported in text boxes)



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