

Investigation Report for Exceedances of Limit Level of Water Quality Monitoring on 18 July 2023

Investigation was carried out in response to exceedances of limit level during the water quality monitoring on 18 July 2023. The following table summarizes details of the exceedances.

Environmental Team for Hung Shui Kiu/ 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	
18/07	TKW1	Turbidity (NTU)	121.5	27.9	29.2		✓	N
	TKW		122.5	24.2	24.6		✓	N
	TKW1	Suspended Solids (SS) (mg/L)	44.0	16.0	18.4		✓	N
	TKW		44.5	19.8	21.6		✓	N

Construction activities carried out at and adjacent to Road D1 during the investigation period:	<p>According to the information provided by the engineer representative (RE), the construction works carried out within the site area of Road D1 (Designated Project (DP)) on 18 July 2023 include:</p> <p><u>Site 3-8 (Road D1) at Portion B7</u></p> <ul style="list-style-type: none"> No construction activity. <p>The construction works carried out at adjoining non-DP works area on 18 July 2023 include:</p> <p><u>Site 3-6 and Site 3-7 at Portion B2</u></p> <ul style="list-style-type: none"> No construction activity. <p><u>Site 3-7 (near Bee Bee Garden) at Portion A2</u></p> <ul style="list-style-type: none"> No construction activity. <p><u>Site 3-7 (near gate B) at Portion A2</u></p> <ul style="list-style-type: none"> Installation of steel re-bar cage sonic tube. Tidy up the site after typhoon. <p><u>Site 3-7 and Site 3-8 at Portion B6</u></p> <ul style="list-style-type: none"> No construction activity. <p><u>Site 3-8 (Box Culvert) at Portion B7</u></p> <ul style="list-style-type: none"> No construction activity. <p><u>Site 3-8 (Hung Wan) at Portion B7</u></p> <ul style="list-style-type: none"> No construction activity.
Possible reason for Action or Limit Level Non-compliance:	<p>According to the records of the Hong Kong Observatory, about 50 to 100 mm and 10 to 20 mm rainfalls were recorded over Hung Shui Kiu on 17 and 18 July 2023, respectively, which led to river</p>

	<p>runoff with high turbidity/ SS levels due to surface runoff from the catchment, effluent discharges from workshops, open storages, warehouse, and/ or private toilet(s) along the catchment downstream of the site.</p> <p>As observed during the site inspections on 19 July 2023, the Contractor had implemented on site measures to control site runoff from Site 3-8 and Road D1, including sump, WetSep and portable pumps for temporary storage and treatment of surface water and site effluent. As no effluent discharge licence was applied for Site 3-6 and Site 3-7, no direct discharge from the sites was allowed. Effluent and surface runoff at Site 3-6 and Site 3-7 were collected and diverted to retention ponds on-site for ground infiltration.</p> <p>No evidence was found to indicate that the exceedances on 18 July 2023 were affected by the site activities. The non-compliances at TKW1 and TKW 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>No further exceedance of action or limit levels of SS and turbidity at TKW1 and TKW was detected during the water quality monitoring on 19 and 20 June 2023.</p> <p>In conclusion, the exceedances recorded on 18 July 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 level measured at TKW and TKW1. 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 17 and 18 July 2023 and also 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. Notifications of exceedances have been issued to the IEC, the Contractor, and the EPD. 4. Duplicate water samples were collected on site, 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 18 July 2023 were affected by the site activities, no additional mitigation measure was discussed with the IEC, the 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:

Site 3-8 and Road D1

- a. The WetSep and other accessories shall be maintained regularly to minimise malfunction.
- b. Surface run-off from construction sites shall be discharged at the designated discharge point as indicated in the effluent discharge licence for Site 3-8 via adequately designed sand/silt removal facilities.
- c. The Contractor will provide sump/ detention pond at Site 3-8 to temporary store site runoff prior to treatment (Figure 3).
- d. Channels/ earth bunds/ sandbag barriers will be properly provided on site to direct stormwater to the sump(s).
- e. Any site runoff detained behind the box culvert will be treated by the WetSep at Site 3-8 prior to discharge.

Site 3-6, Site 3-7, and Contaminated Soil Treatment Area

- f. As no effluent discharge licence is applied for Site 3-6 and Site 3-7, no direct discharge of surface runoff or construction effluent is allowed from the sites.
 - g. Impervious canvases are deployed to cover the stockpiles at the contaminated soil treatment area to minimise contaminated surface runoff (Figure 3).
 - h. Perimeter channels, sump pits and leachate collection tanks are installed at the contaminated soil treatment area to collect and store leachate from the stockpiles of excavated materials to eliminate untreated leachate escaped from the treatment area.
 - i. A retention pond is set up at Site 3-6 (Portion B1) to store effluent and surface runoff from Site 3-6 and Site 3-7 (Figure 3).
 - j. Another retention pond is also set up near the contaminated soil treatment area for the discharge chamber workfront to collect effluent and surface runoff (Figure 3).
7. The frequency of monitoring was increased to daily at TKW1 and TKW from 19 July 2023. No further action or limit level exceedances of SS and turbidity at TKW and TKW1 were recorded on 19 and 20 July 2023. Daily monitoring was therefore ceased after 20 July 2023. The following table summarizes the monitoring results of SS and turbidity at TKW, TKW1 on 19 and 20 July 2023.

Date	19 July 2023		20 July 2023	
Parameters	SS (mg/L)	Turbidity (NTU)	SS (mg/L)	Turbidity (NTU)
TKW1	3.3	16.7	5.7	17.6
TKW	2.6	20.5	8.9	17.6

Photo Records of Site Inspection held by the ET on 19 July 2023

Site 3-8 and Road D1



(P1)

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



(P2)

Surface runoff and site effluent were collected and diverted to the WetSep for temporary storage and treatment before the water was used for fugitive dust suppression on site or discharged at designated location under the requirement of effluent discharge licence.



(P3)

Surface runoff was directed to the sump/detention pond for temporary storage. No muddy surface runoff and no direct discharge of construction effluent was observed.

Contaminated Soil Treatment Area (Portion B2) (Non-DP area)



(P4)

Contaminated materials were stocked on site pending for decontamination.



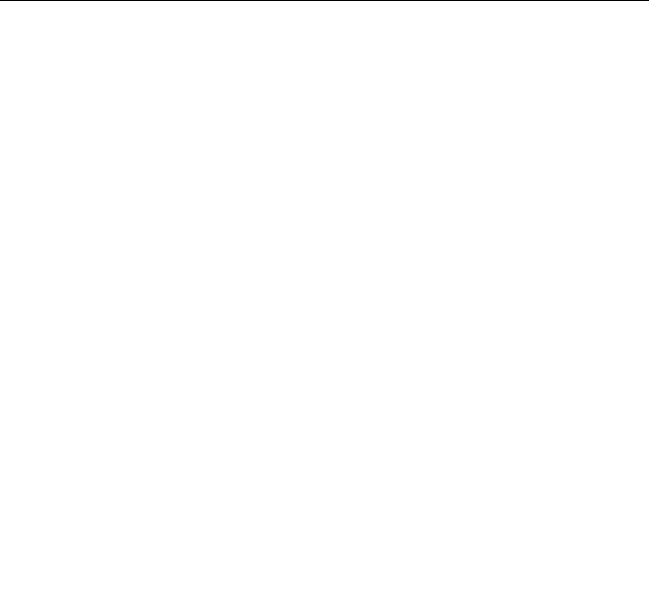
(P5)

Stockpiles within the contaminated soil treatment area were covered by impervious canvases. Leachate collection tanks were also in place.



(P6)

Perimeter channels installed outside the contaminated soil treatment area.



Site Photos on 18 July 2023 provided by the RE

Site 3-8 and Road D1 (Portion B7)



(R1)

Sump formed next to the finished box culvert.

Site 3-8 (Portion B6) (Non-DP area)



(R2)

No activity was carried out at Site 3-8 (Portion B6). No effluent discharge was observed.

Contaminated Soil Treatment Area (Portion B2) (Non-DP area)



(R3)

Sloping surfaces of stockpiles within the contaminated soil treatment area were covered by impervious canvas. No surface runoff or effluent was leaked from the contaminated soil treatment area during the site inspection.

Site 3-6 (Portion B1) (Non-DP area)



(R4)

No effluent discharge from the site was observed.

Site 3-7 (Portion A2)



(R5)

No effluent discharge from the site was observed.

Site Observation Photos around Water Quality Monitoring Stations taken by the ET on 18 July 2023



(W1)

Water Quality Monitoring Station: TKW



(W2)

Water Quality Monitoring Station: TKW1

Figure 1 Rainfall Records from the Hong Kong Observatory

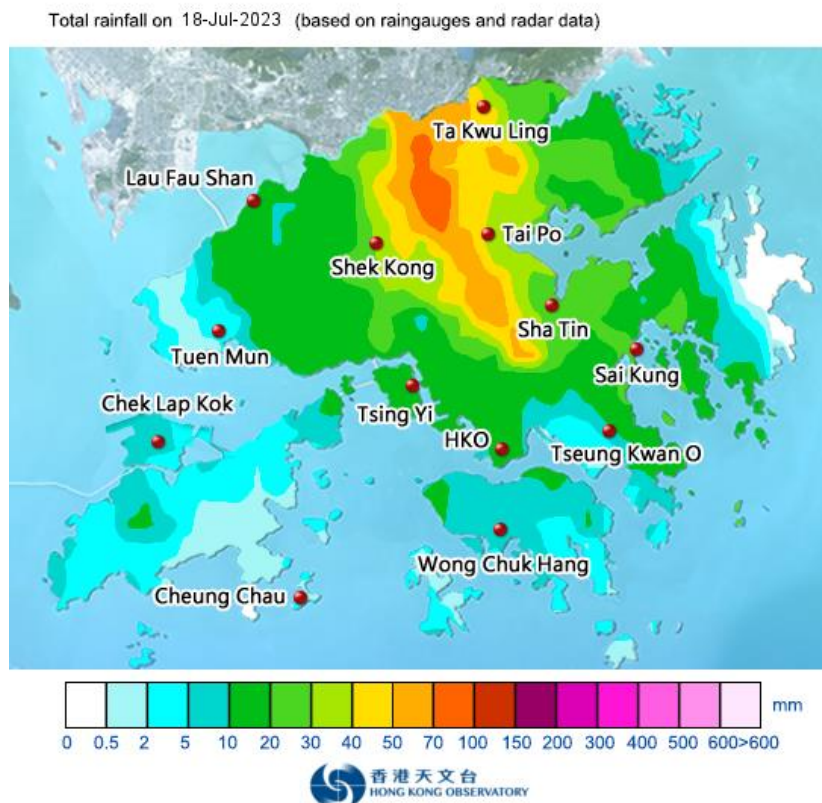
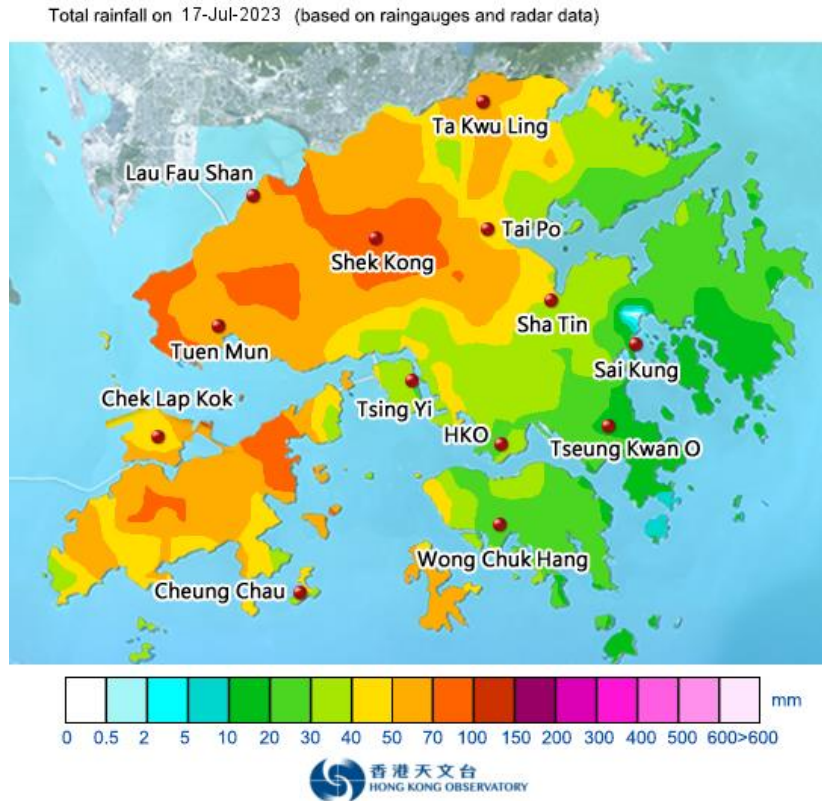
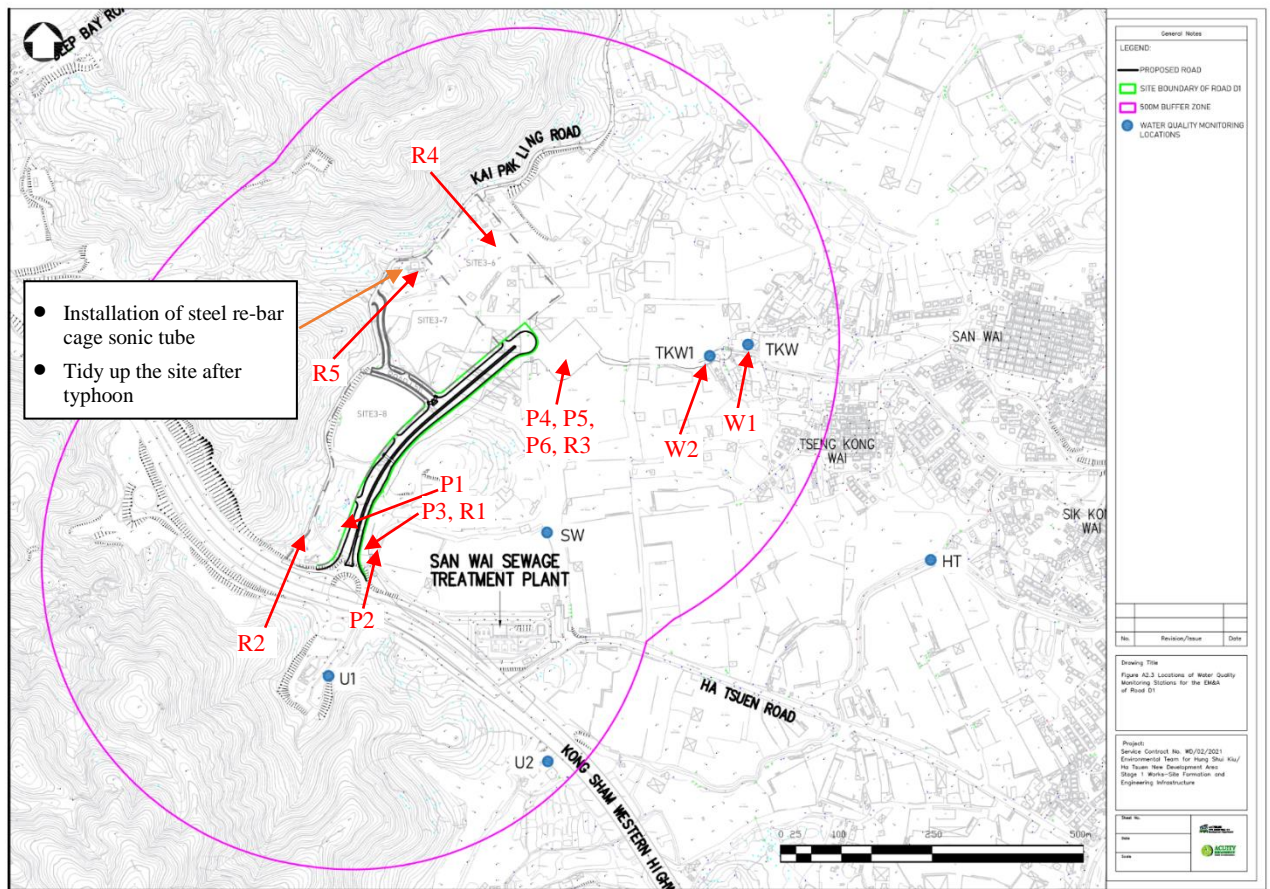
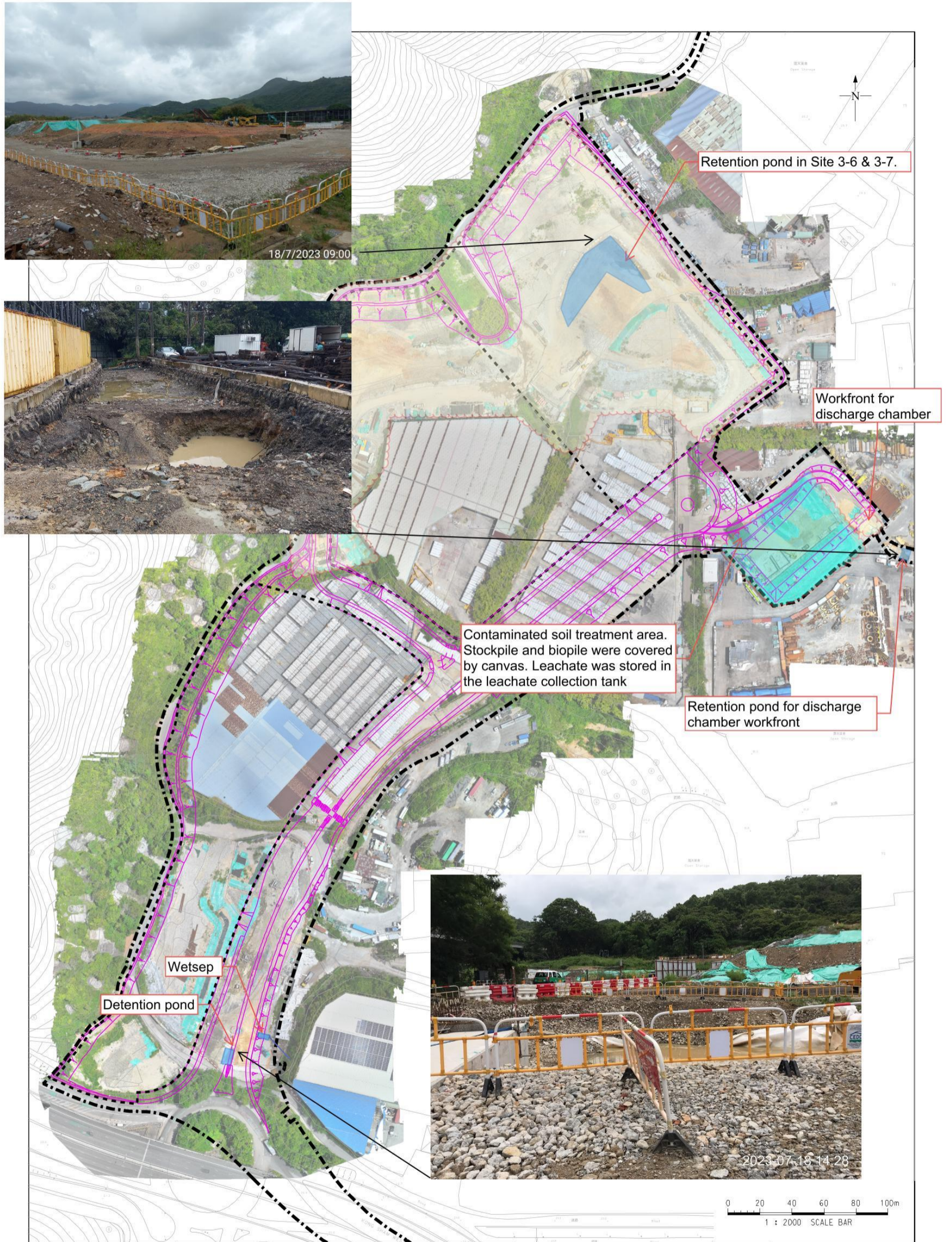


Figure 2 Location Plan of Impact Water Quality Monitoring Stations (Site activities held on 18 July 2023 were reported in text boxes)





M MOTT MACDONALD	CONTRACT NO. YL/2020/03	Water quality pollution control measures implemented at Site 3-6 and Site 3-7	SCALE	1:2000 @ A3	DATE	13-JUL-23
	HUNG SHUI KIU/HA TSUEN NEW DEVELOPMENT AREA STAGE 1 WORKS		CHECK		Figure 3 380288/SK0050	
		JOB NO.	SK0050	SKETCH NO.		
						30

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Signature:		Signature:	
Date:	28 July 2023	Date:	28 July 2023