



**Monthly EM&A Report  
(March 2023)**

**Contract No.** : DPW 01/2020  
**Contract Name** : Environmental Team for Drainage  
Improvement Works at Ngong Ping  
(Contract No. DC/2019/06)  
**Report No.** : 0118/20/ED/0585A  
**EP No.** : EP-456/2013/B

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Environmental Team Leader

Our Ref: PL-202304020

Drainage Services Department  
45/F, Revenue Tower,  
5 Gloucester Road,  
Wan Chai, Hong Kong

Attention: Mr. Dave CHOI (Engineer/ Drainage Projects 14)

19 April 2023

Dear Dave,

**Drainage Improvement Works at Ngong Ping**  
**Monthly EM&A Report for March 2023**

I refer to the email concerning the captioned. I have no adverse comment on the Monthly Environmental Monitoring and Audit Report for March 2023 (Rev. A) with report number 0118/20/ED/0585A and verify the report according to Conditions 1.9 and 4.4 of Environmental Permit with permit number EP-456/2013/A.

Yours faithfully,



F.C. Tsang  
Independent Environmental Checker

cc. ETL – Calvin Leung

## Document Control

### Document Information

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### Client Information

Client	Drainage Services Department
Client Address	45/F, Revenue Tower, 5 Gloucester Road, Wan Chai, Hong Kong
Client Contact	Mr. Dave Choi

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## EXECUTIVE SUMMARY

- i. This is the 27<sup>th</sup> monthly EM&A Report which summaries the results and findings of the EM&A programme required for the Project from 1 March to 31 March 2023.

### **Breaches of Action and Limit Levels**

#### Noise

- ii. No Action or Limit Level Exceedance of monitoring was recorded in the reporting period.

#### Water Quality

- iii. 1 Limit Level Exceedance of Total suspended solid was recorded on 28 March 2023 at WS6-I6. The exceedance case on 28 March 2023 was considered as project non-related. Exceedance summary and investigation report are shown in Section 6.1.2 and Appendix I2 respectively.

### **Complaint log**

- iv. No Complaint was recorded in the reporting period.

### **Notifications of Summons and Successful Prosecutions**

- v. No notifications of Summon and Successful Prosecution was recorded in the reporting period.

### **Reporting Change**

- vi. There was no reporting change required in the reporting period.

### **Future Key Issues**

- vii. During the next three month reporting period, the principal work activities within the site included:

#### **Portion A**

- Receiving Pit excavation
- TBM operation

#### **Portion B**

- Excavation of box culvert
- Launching pit excavation
- TBM operation

- viii. The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirements. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

# 1. INTRODUCTION

## 1.1 Background

- 1.1.1 To enhance the capacity of the trunk drainage system and reduce the flood risk in Ngong Ping, long term drainage improvement works are proposed to be implemented under "PWP Item No. 4163CD – Drainage Improvement Works at Ngong Ping" (hereafter referred to as "the Project").
- 1.1.2 The Project is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap.499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual (hereafter referred to as the "approved EM&A Manual") (Register No. AEIAR-169/2013 was prepared for the Project and approved by Environmental Protection Department (EPD) on 21 April 2013. A Variation of an Environmental Permit (Application No. VEP-599/2021) EP-456/2013/B was issued on 26 August 2021 and it is the current permit for the Project. These documents are available through the EIAO Register.
- 1.1.3 Fugro Technical Services Limited (FTS) has been appointed as the Environmental Team (ET) by Drainage Services Department (DSD) to implement the EM&A programme in accordance with the EP No. EP-456/2013/B and the approved EM&A Manual.
- 1.1.4 The construction phase and EM&A programme of the Project commenced on 2 January 2021.
- 1.1.5 This is the 27<sup>th</sup> monthly EM&A Report which summaries the results and findings of the EM&A programme required for the Project from 1 March to 31 March 2023.

## 1.2 Project Organization and Management Structure

- 1.2.1 The environmental Project Organization and Management Structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone
Drainage Services Department, HKSAR (DSD)	Engineer	Mr. Dave Choi	2594 7348
Acuity Sustainability Consulting Limited (ASC)	IEC	Mr. F.C. Tsang	2698 8060
Contractor (Ming Hing)	Environmental Officer	Mr. Jason Wong	9744 2390
Fugro Technical Services Limited (FTS)	ET Leader	Mr. Calvin Leung	3565 4441

## 1.3 Construction Programme and Activities

- 1.3.1 The construction phase of the Project under the EP commenced on 2 January 2021.
- 1.3.2 The construction programme of the Project is shown in Appendix B1.

## **1.4 Works Undertaken During the Month**

1.4.1 During this reporting period, the principal work activities within the site included:

### **Portion A**

- Receiving Pit excavation
- TBM operation

### **Portion B**

- Excavation of box culvert
- Launching pit excavation
- TBM operation

1.4.2 Illustrations of works undertaken during the reporting period are shown in Appendix B2.

## **1.5 Waste Management Status**

1.5.1 The amount of wastes generated within the Project during the reporting period is shown in Appendix B4.

## 2. ENVIRONMENTAL STATUS

### **EP No. EP-456/2013/B Conditions**

2.1.1 Status of EP No. EP-456/2013/B Conditions are summarized in Appendix C1.

### **Mitigation Measures Implementation**

2.1.2 Implementation of environmental mitigation measures are summarized in Appendix C2.

### **Environmental Licences, Notification and Permits**

2.1.3 A summary of the relevant permits, licences and/or notifications on environmental protection for this Contract is presented in Table 2.1.

Table 2.1 Environmental Licences, Notification and Permits Summary

<b>Permit / Notification / License</b>	<b>Ref No</b>	<b>Valid From</b>	<b>Valid Till</b>
Environmental Permit	EP-456/2013/B	26/08/2021	N/A
Wastewater Discharge License	EP/RS0000458474	23/9/2022	30/9/2027
Notification pursuant to Air Pollution (Construction Dust) Regulation	462432	01/12/2020	N/A
Billing Account	7038098	26/08/2020	N/A
Chemical Waste Producer	5213-941-M2935-04	05/05/2021	N/A

### **Project Area, Environmental Sensitive Receivers and Locations of Monitoring and Control Stations**

2.1.4 Project location, Environmental sensitive receivers and locations of the monitoring and control stations are shown in Figure 1, 2a-2c.

### 3. SUMMARY OF EM&A REQUIREMENTS

#### 3.1 Monitoring Parameters

3.1.1 Detailed of monitoring parameters are shown in Section 5.3.

#### 3.2 Environmental Quality Performance Limits (Action and Limit Levels)

3.2.1 The monitoring parameters action and limit levels are shown in Appendix D.

#### 3.3 Event and Action Plans

3.3.1 The Event and Action Plans are shown in Appendix E.

#### 3.4 Environmental Mitigation Measures as Recommended in the EIA Report

3.4.1 Implementation of environmental mitigation measures are summarized in Appendix C2.

#### 3.5 Environmental Requirements in Contract Documents

3.5.1 In order to ensure the works are in compliance with the contractual requirements, all method statements of major works should be submitted by the Contractor to the Engineer and the ET for vetting so as to ensure whether sufficient environmental protection and pollution control measures have been incorporated. Detailed ET's vetting contract documents in reporting period are summarized in Table 3.1:

Table 3.1 ET's vetting Contract Documents Summary

<b>ET's vetting Contract Documents</b>	<b>Status</b>
NIL	

### 3.6 Site Inspection

3.6.1 Site inspections should be conducted regularly to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented for the construction works activities associated with the drainage improvement works at Ngong Ping.

3.6.2 A summary of the ET's site inspection in the reporting period is presented in Table 3.2.

Table 3.2 Site Inspection Date Summary

Inspection Date
<b>Weekly Site Inspection</b>
07/03/2023
14/03/2023
21/03/2023
28/03/2023
<b>Landscape and Visual</b>
07/03/2023
21/03/2023
<b>Cultural Heritage</b>
28/03/2023
<b>Post-transplantation Works</b>
--
<b>Floral Protection Measures</b>
14/03/2023

3.6.3 Detailed site inspections summary is presented in Appendix C3.

### 3.7 Ecology

3.7.1 The EIA has recommended that an EM&A for ecology is undertaken during the construction and operational / post-construction phases of the project. Certain construction phase mitigation measures and EM&A, such as surveys and subsequent transplantation of floral species would need to be undertaken in the pre-construction phase, or baseline phase of the works.

3.7.2 The construction phase ecological audit is concerned with checking the effectiveness of the implementation of the ecology transplantation/translocation and protection measures, together with auditing the effectiveness of the overall ecological site mitigation.

3.7.3 Refer to the EM&A Manual Table 5.2, the EM&A requirement in construction phase are summarized as below:

- ~ Weekly audit of Enhancement planting and construction run-off.
- ~ Monthly audit of the implementation of Floral Protection Plan.
- ~ Monthly audit of the transplanted species for the first 12 months after the transplantation.
- ~ Quarterly audit the transplanted species between months 12 to 24 after the transplantation.



- 3.7.4 A summary of the ET's site inspection in the reporting period is presented in Table 3.2 and the detailed site inspections is presented in Appendix C3.
- 3.7.5 To avoid uprooting and washing away of remaining transplanted floral species of conservation importance during adverse weather, preventive measure such as enhanced visual checking of the soil stability during advance notice of adverse weather conditions (i.e. Typhoon Signal Nos. 8 to 10 and Black, Red, and Yellow Rainstorm) is recommended.
- 3.7.6 Implementation of environmental mitigation measures are summarized in Appendix C2.

### **3.8 Landscape and Visual Impact**

- 3.8.1 The EIA has recommended that EM&A for landscape and visual resources is undertaken during the construction and operational phases of the project. The design, implementation and maintenance of landscape mitigation measures is a key aspect of this and should be checked to ensure that they are fully realised and that potential conflicts between the proposed landscape measures and any other project works and operational requirements are resolved at the earliest possible date and without compromise to the intention of the mitigation measures. In addition, the implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.
- 3.8.2 Site inspections should be undertaken at least once every two weeks throughout the construction period and once every two months during the operational phase.
- 3.8.3 A summary of the ET's site inspection in the reporting period is presented in Table 3.2 and the detailed site inspections is presented in Appendix C3.
- 3.8.4 Implementation of environmental mitigation measures are summarized in Appendix C2.

### **3.9 Cultural Heritage**

- 3.9.1 The EIA has recommended that the EM&A for cultural heritage resources is undertaken during the construction phase of the project. Implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.
- 3.9.2 All measures undertaken by the Contractor during the construction phase in the vicinity of the six heritage resources shall be audited by a qualified building surveyor, as a member of the Environmental Team (ET), on a monthly basis to ensure compliance with the intended aims of the recommended mitigation measures.
- 3.9.3 A summary of the ET's site inspection in the reporting period is presented in Table 3.2 and the detailed site inspections is presented in Appendix C3.
- 3.9.4 Crack monitoring devices was installed at NP-10 and NP-11.
- 3.9.5 Implementation of environmental mitigation measures are summarized in Appendix C2.

### **3.10 Waste Management**

- 3.10.1 With the proper handling, storage and disposal of wastes arising from the construction works as recommended in the Environmental Mitigation Implementation Schedule in Appendix A of this EM&A Manual, the potential for adverse environmental impacts would be minimised. During site inspections, the Engineer and ET should pay special attention to the issues relating to the waste management and check whether the Contractor has implemented the recommended good site practices and other mitigation measures.
- 3.10.2 The amount of wastes generated within the Project during the reporting period is shown in Appendix B4.
- 3.10.3 A summary of the ET's site inspection in the reporting period is presented in Table 3.2 and the detailed site inspections is presented in Appendix C3.
- 3.10.4 Implementation of environmental mitigation measures are summarized in Appendix C2.

## 4. IMPLEMENTATION STATUS

- 4.1.1 The implementation status of environmental protection and pollution control/ mitigation measures as recommended in the EIA report/ EM&A Manual in the reporting period were updated and shown in Appendix C2.

## 5. MONITORING RESULTS

### 5.1 Monitoring Methodology

#### **Noise**

- 5.1.1 The monitoring methodology and the QA/QC procedures are as follows:

- The monitoring station will set at a point 1m from the exterior of the sensitive receivers building façade and set at a position 1.2m above the ground.
- The battery condition will check to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time will set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - measurement time : continue 5 minutes interval
- Prior to and after noise measurement, the meter will be calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement will be considered invalid and repeat of noise measurement is required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station will check with the portable wind meter. Noise monitoring shall be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
- Noise measurement shall be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
- The supplementary information for data auditing and statistical results (e.g. L10 and L90), shall be obtained for reference.

#### Maintenance / Calibration

- The microphone head of the sound level meter and calibrator should be cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory or the manufacturer.

- 5.1.2 The weather conditions during the reporting period are shown in Appendix J.

**Water Quality**

- 5.1.3 In accordance with the recommendations of the EIA, construction phase water quality EM&A is required. Water quality parameters comprising: (i) suspended solids (SS); (ii) turbidity in Nephelometric Turbidity Units (NTU); (iii) dissolved oxygen (DO) in mg/L; and (iv) pH, shall be measured by the Environmental Team (ET) at locations which are within the potential influence of construction works at least three times per week to ensure that any deteriorating water quality could be readily detected and timely action be taken to rectify the situation. The first parameter, SS, shall be determined in the laboratory, with the other parameters measured in-situ using direct reading instrumentation.
- 5.1.4 In association with the water quality parameter measurements, relevant data shall also be measured, including the monitoring location/position, time, water depth, water temperature, salinity, DO saturation, weather conditions if appropriate, and any special phenomena and work underway at the construction site.
- 5.1.5 Only one sampling depth will be required for the streams, which shall be collected at mid depth. Replicates (2 samples) in-situ from each independent sampling event are required for all parameters to ensure a robust statistically interpretable data set.
- 5.1.6 In addition, duplicated water samples for suspended solid analysis shall be collected at all the above stations and delivered to the HOKLAS accredited laboratory for analysis. Results for suspended solids shall be received back from the laboratory within 24hour of the receipt of the samples.
- 5.1.7 The Impact Monitoring shall be taken at the designated monitoring stations when construction works in the relevant Works Sections, designated working area (WA) and stockpiling area (SA) is ongoing. The monitoring shall be conducted at least 3 times a week and the interval between two sets of monitoring shall not be less than 36 hours. The parameters to be monitored, the monitoring procedures and equipment shall be the same as the Baseline Monitoring. The Impact Monitoring at a particular Works Section shall not be ceased with the ER, IEC and EPD agreement.
- 5.1.8 The weather conditions during the reporting period are shown in Appendix J.

**5.2 Laboratory and Equipment Used and Calibration**

**Noise**

5.2.1 Table 5.1a summarizes the noise monitoring equipment model used for this project.

Table 5.1a Noise Monitoring Equipment

<b>Manufacturer/ Brand</b>	<b>Model</b>	<b>Equipment</b>	<b>Quantity</b>
Casella	CEL-63X Series	Sound Level Meter	3
	CEL-120/1	Sound Calibrator	3

5.2.2 Relevant calibration certificates are provided in Appendix F1.

**Water Quality**

5.2.3 Analysis of suspended solids was carried out in HOKLAS environmental testing laboratory (Registration No.: HOKLAS 015) to this parameter.

5.2.4 Table 5.1b summarizes the water quality monitoring equipment model used for this project.

Table 5.1b Water Quality Monitoring Equipment

<b>Manufacturer/ Brand</b>	<b>Model</b>	<b>Equipment</b>	<b>Quantity</b>
In-Situ	YSI EXO-3	Multi-parameter Water Quality Meter	1

5.2.5 Relevant calibration certificates are provided in Appendix F2.

**5.3 Parameters, Monitoring Date, Time, Frequency and Duration**

**Noise**

5.3.1 Table 5.2 presents the noise monitoring parameters, frequencies and period.

Table 5.2 Monitoring Parameters and Frequencies of Noise Monitoring

<b>Parameter</b>	<b>Frequency and Period</b>
LAeq (30 min) in normal weekdays and (L <sub>10</sub> and L <sub>90</sub> will be recorded for reference)	0700-1900 on normal weekdays at a frequency of once a week

5.3.2 The schedule of noise monitoring in reporting period is provided in Appendix G.

**Water Quality**

5.3.3 In accordance with the recommendations of the EIA, water quality parameters comprising: (i) suspended solids (SS); (ii) turbidity in Nephelometric Turbidity Units (NTU); (iii) dissolved oxygen (DO) in mg/L; and (iv) pH, shall be measured by the Environmental Team (ET).

5.3.4 In association with the water quality parameter measurements, relevant data shall also be measured, including the monitoring location/position, time, water depth, water temperature, salinity, DO saturation, weather conditions if appropriate, and any special phenomena and work underway at the construction site.

5.3.5 The Impact Monitoring shall be taken at the designated monitoring stations when construction works in the relevant Works Sections, designated working area (WA) and stockpiling area (SA) is ongoing. The monitoring shall be conducted at least 3 times a week and the interval between two sets of monitoring shall not be less than 36 hours. The parameters to be monitored, the monitoring procedures and equipment shall be the same as the Baseline Monitoring. The Impact Monitoring at a particular Works Section shall not be ceased with the ER, IEC and EPD agreement.

5.3.6 The schedule of water quality monitoring in reporting period is provided in Appendix G.

## 5.4 Monitoring Locations

### Noise

5.4.1 The noise monitoring locations are summarised in Table 5.3 and shown in Figure 2a-2b.

Table 5.3 Noise Monitoring Locations and Type of Measurement

NSRs*	Monitoring Location	Type of Measurement#
NSR1	Columbarium of Po Lin Monastery	Free-field
NSR5	Village House No. 49A	Free-field
NSR8	Village House No. 34	Façade

\* NSRs: Noise Sensitive Receivers

#For Free-field measurement, +3dB(A) should be added to the measured results.

### Water Quality

5.4.2 The water quality monitoring locations are shown in Table 5.4 and Figure 2c.

Table 5.4 Water Quality Monitoring Locations

Station	Type	Easting	Northing	Relevant Works Section*	Remark
WS1-R1	Upstream reference	808664	813130	WS1/SA1	R2 in EIA
WS1-I1	Downstream impact	808535	813094	WS1/SA1	
WS1-R2	Upstream reference	808524	813134	WS1	W2 in EIA
WS1-I2	Downstream impact	808528	813101	WS1	
WS4-R3	Upstream reference	808214	813003	WS4/SA2	
WS4-I3	Downstream impact	808196	813042	WS4/SA2	
WS5-R4	Upstream reference	808096	813076	WS5/SA3	
WS5-I4	Downstream impact	808055	813115	WS5/SA3	
WS6-R5	Upstream reference	807983	813158	WS6/WA3	
WS6-I5	Downstream impact	807919	813155	WS6/WA3	
WS6-C1	Intermediate Control	807813	813214	WS6/SA4	W8 in EIA
WS6-R6	Upstream reference	807727	813249	WS6/WA4	
WS6-I6	Downstream impact	807762	813285	WS6/WA4	W9 in EIA

\* Please refer to Figures 2.9a-2.9g of the EIA Report for the relevant Works Section (WS), and/or designated works area (WA) and stockpiling area (SA).

## 5.5 Results and Observations

### Noise

5.5.1 The monitoring data are summarized in Table 5.5. Detailed monitoring data and graphical presentations are shown in Appendix H1.

Table 5.5 Summary of Noise Monitoring Results

NSR	Monitoring Results (Range) <sup>(2)(3)</sup>	Action Level	Limit Level <sup>(1)</sup>
NSR1 Columbarium of Po Lin Monastery	52.7 - 66.1 dB(A)	When one documented complaint is received.	70 dB(A)
NSR5 Village House No. 49A	53.4 - 62.7 dB(A)		75 dB(A)
NSR8 Village House No. 34	52.6 - 55.4 dB(A)		75 dB(A)

Note:

- (1) 75 dB(A) for residential premises and 70 dB(A) for educational institutions, kindergartens, nurseries and all others where voice communication.
- (2) Leq<sub>(30min)</sub> in dB(A), 0700-1900 hrs in normal weekdays.
- (3) Free-field correction applied at NSR1 & NSR5.

### Water Quality

5.5.2 The monitoring data are summarized in Table 5.6. Detailed monitoring data and graphical presentations are shown in Appendix H2.

Table 5.6 Summary of Water Quality Monitoring Results

Parameter(s)	DO in mg/L				Turbidity in NTU				pH				Suspended Solids in mg/L			
	Min	-	Max	( Mean )	Min	-	Max	( Mean )	Min	-	Max	( Mean )	Min	-	Max	( Mean )
Station(s)																
WS1-R1																
WS1-I1	8.17	-	8.52	( 8.35 )	1.30	-	2.70	( 2.00 )	7.50	-	7.90	( 7.70 )	3.00	-	3.00	( 3.00 )
WS1-R2	7.45	-	9.14	( 8.16 )	0.17	-	1.63	( 0.80 )	6.30	-	7.10	( 6.79 )	1.00	-	6.50	( 2.38 )
WS1-I2																
WS4-R3																
WS4-I3																
WS5-R4																
WS5-I4																
WS6-R5																
WS6-I5																
WS6-C1	3.30	-	7.00	( 5.32 )	0.50	-	3.40	( 1.96 )	6.20	-	7.10	( 6.69 )	1.00	-	5.00	( 1.90 )
WS6-R6	6.70	-	6.70	( 6.70 )	2.30	-	2.30	( 2.30 )	6.90	-	6.90	( 6.90 )	3.50	-	3.50	( 3.50 )
WS6-I6	6.60	-	6.60	( 6.60 )	2.20	-	2.20	( 2.20 )	6.60	-	6.60	( 6.60 )	42.00	-	42.00	( 42.00 )

Remark:

- 1) Monitoring location dried up and detailed refer to Appendix H2.

**Other factor influencing the monitoring results**

**Noise**

5.5.3 There were no other noticeable external factors generally affecting the monitoring results in this reporting period.

**Water Quality**

5.5.4 The monitoring results may influence by the vicinity of the monitoring station or changes in the ambient conditions (e.g. rainstorms in the wet season).

**5.6 Comparisons of Monthly EM&A Data with the EIA Predictions**

**Noise**

5.6.1 The EM&A data was compared with the EIA predictions as summarized in Tables 5.7.

Table 5.7 Comparison of Noise Monitoring Data with EIA Predictions

NSR	Predicted Mitigated Construction Noise Levels <sup>(1)</sup>		Monitoring Results (Range)		
NSR1 Columbarium of Po Lin Monastery	55 - 70	dB(A)	52.7	- 66.1	dB(A)
NSR5 Village House No. 49A	48 - 86	dB(A)	53.4	- 62.7	dB(A)
NSR8 Village House No. 34	51 - 73	dB(A)	52.6	- 55.4	dB(A)

Note

(1) Predicted Mitigated Construction Noise Levels refer to EIA Report Table 4.11.

5.6.2 The monitoring results in the reporting period in NSR1, NSR5 and NSR8 were within or below the ranges of the predicted mitigated construction noise levels in the EIA Report.

**Water Quality**

5.6.3 As no water quality prediction in EIA report, the ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirements. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.



## 6. NON-COMPLIANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

### 6.1 Non-compliance (Exceedances)

#### **Noise**

6.1.1 No Action or Limit Level Exceedance of monitoring was recorded in the reporting period.

#### **Water Quality**

6.1.2 1 Limit Level Exceedance of Total suspended solid was recorded on 28 March 2023 at WS6-I6. Reference to the observation of the sampling point, the possible reason of reaching the limited level included the heavy rainfall recorded before the sampling day and stagnant water. Hence, the dirt and soil were flushed down the stream and trapped at the sampling point. Also, according to the Contractor, only formwork erection was conducted, no excavation works nor water discharge which might cause pollution of the stream was conducted near WS6-I6 on the sampling day. Hence, this exceedance is concluded as project non-related. The investigation report are shown in Appendix I2.

### 6.2 Complaints Received

6.2.1 No complaints, were received in the reporting period.

### 6.3 Notification of Summons and Successful Prosecution

6.3.1 No notification of summons or successful prosecutions were received in the reporting period.

6.3.2 The Cumulative exceedances, complaint log, notification of summons and successful prosecutions are presented in Appendix I.

## 7. FUTURE KEY ISSUES

### 7.1 Construction Works for Next Three Month

7.1.1 During the next three month reporting period, the principal work activities within the site included:

#### **Portion A**

- Receiving Pit excavation
- TBM operation

#### **Portion B**

- Excavation of box culvert
- Launching pit excavation
- TBM operation

7.1.2 The anticipated impact of principal work activities within the site and the recommended mitigation measures are shown in Appendix B3.

### 7.2 Monitoring Schedules for Next Three Month

7.2.1 The tentative schedules for environmental monitoring for next three month are provided in Appendix G.

## 8. COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

### **Effectiveness and Efficiency of Mitigation Measures**

- 8.1.1 The regularly site inspections and environmental impact monitoring ensured that all the environmental mitigation measures recommended in EM&A Manual were effectively implemented. Despite the deficiencies found during site audits, the Contractor had taken appropriate actions to rectify deficiencies within a reasonable timeframe, and no exceedance related to the project was observed. Therefore, the effectiveness and efficiency of the mitigation measures were considered satisfactory for most of the time.

### **Improvement in the EM&A Programme**

- 8.1.2 The EM&A programme was considered successfully and adequately conducted in the reporting period.

### **Conclusions**

- 8.1.3 This is the 27<sup>th</sup> monthly EM&A Report which summaries the results and findings of the EM&A programme required for the Project from 1 March to 31 March 2023.

#### Noise

- 8.1.4 No Action or Limit Level Exceedance of monitoring was recorded in the reporting period.

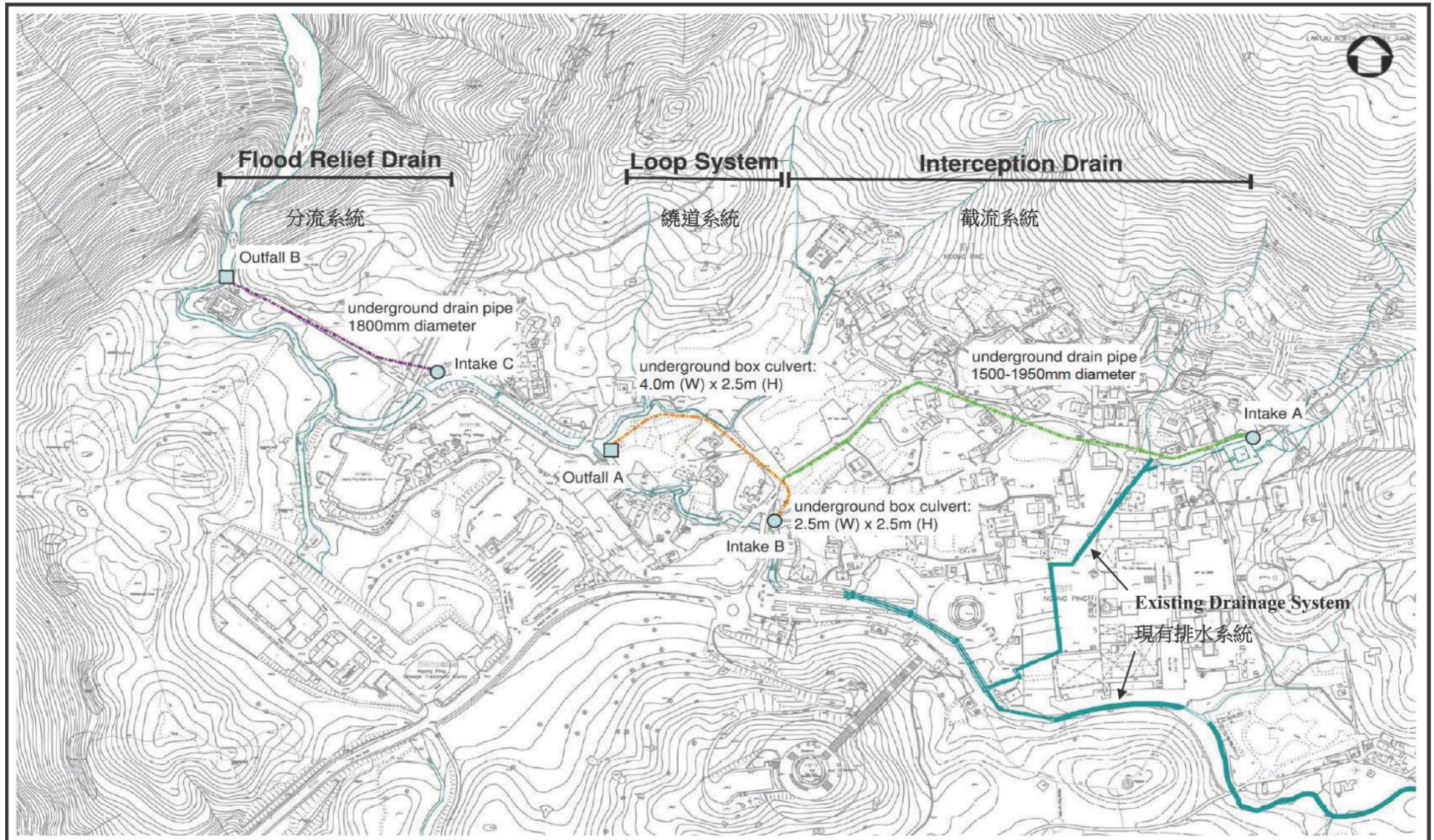
#### Water Quality

- 8.1.5 1 Limit Level Exceedance of Total suspended solid was recorded on 28 March 2023 at WS6-I6. The exceedance case on 28 March 2023 was considered as project non-related. Exceedance summary and investigation report are shown in Section 6.1.2 and Appendix I2 respectively.

#### Complaint, Notifications of Summons and Successful Prosecutions

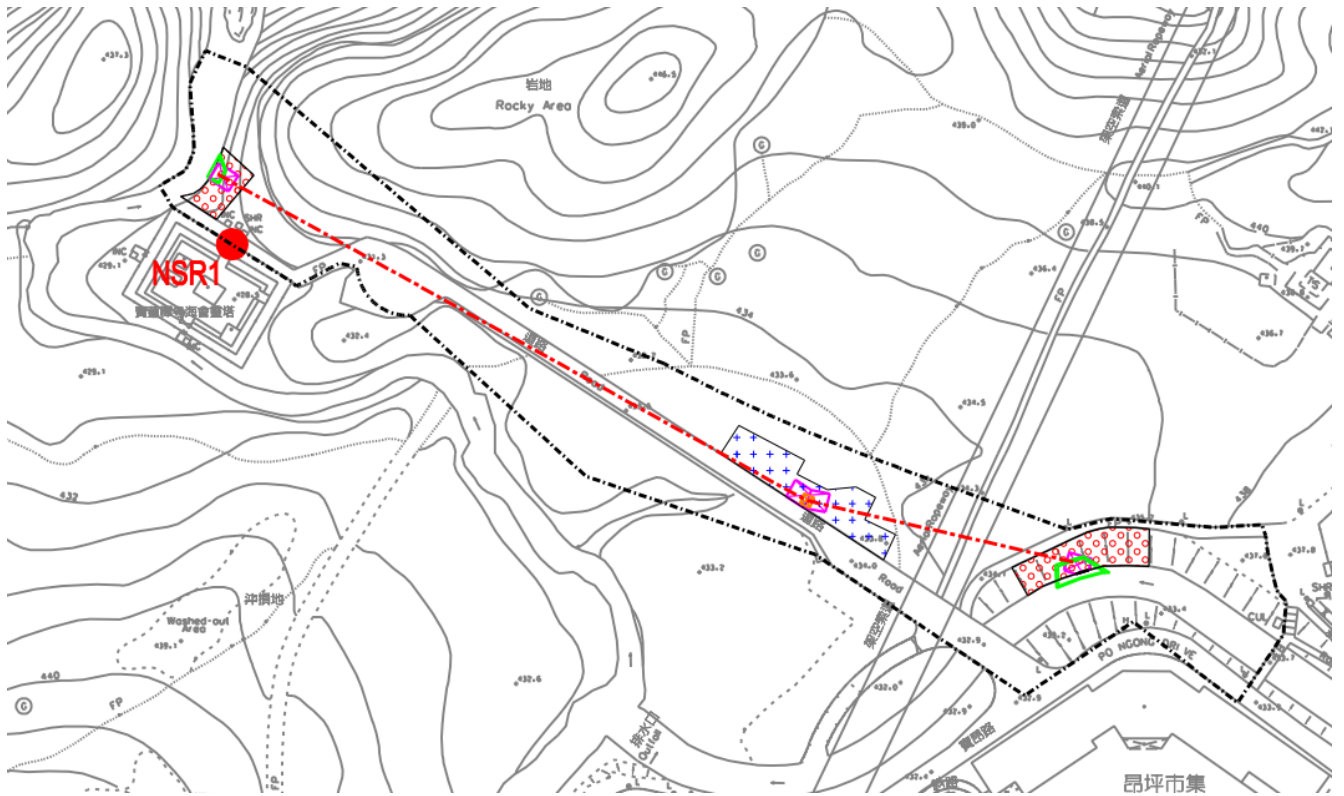
- 8.1.6 No complaints were received in the reporting period.
- 8.1.7 No notification of summons or successful prosecutions were received in the reporting period.
- 8.1.8 There was no reporting change required in the reporting period.
- 8.1.9 Potential environmental impacts due to the construction activities will be monitored or reviewed. The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirements. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

Figure 1 Project Location

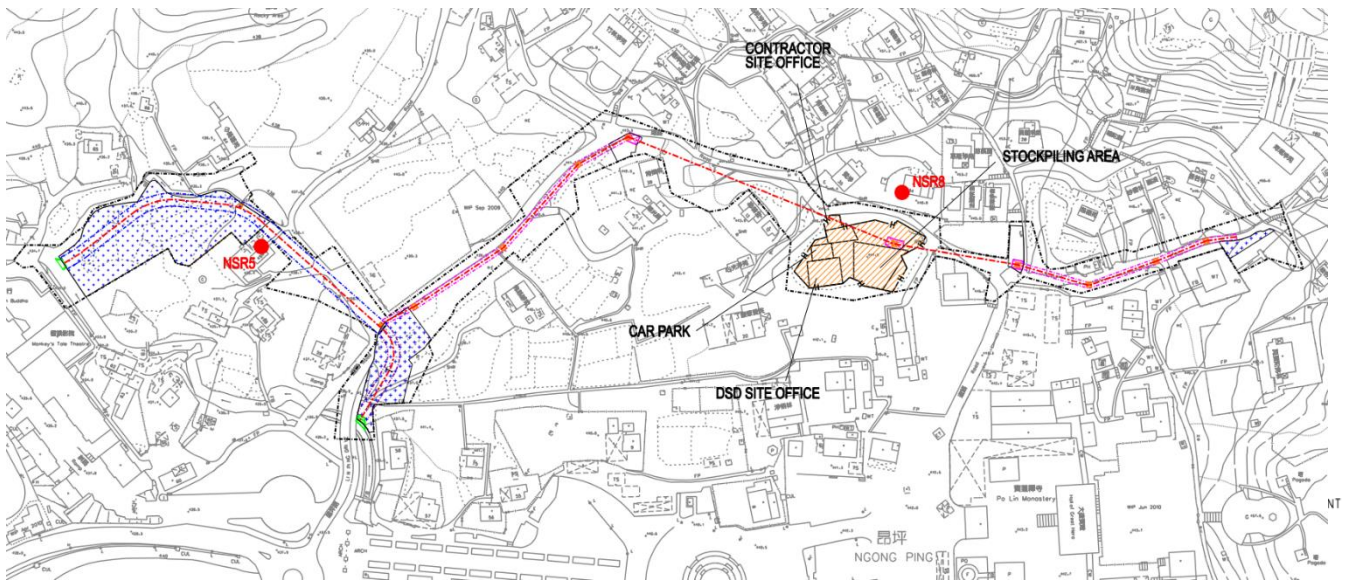




**Figure 2a Noise Monitoring Locations (Part 1)**



**Figure 2b Noise Monitoring Locations (Part 2)**

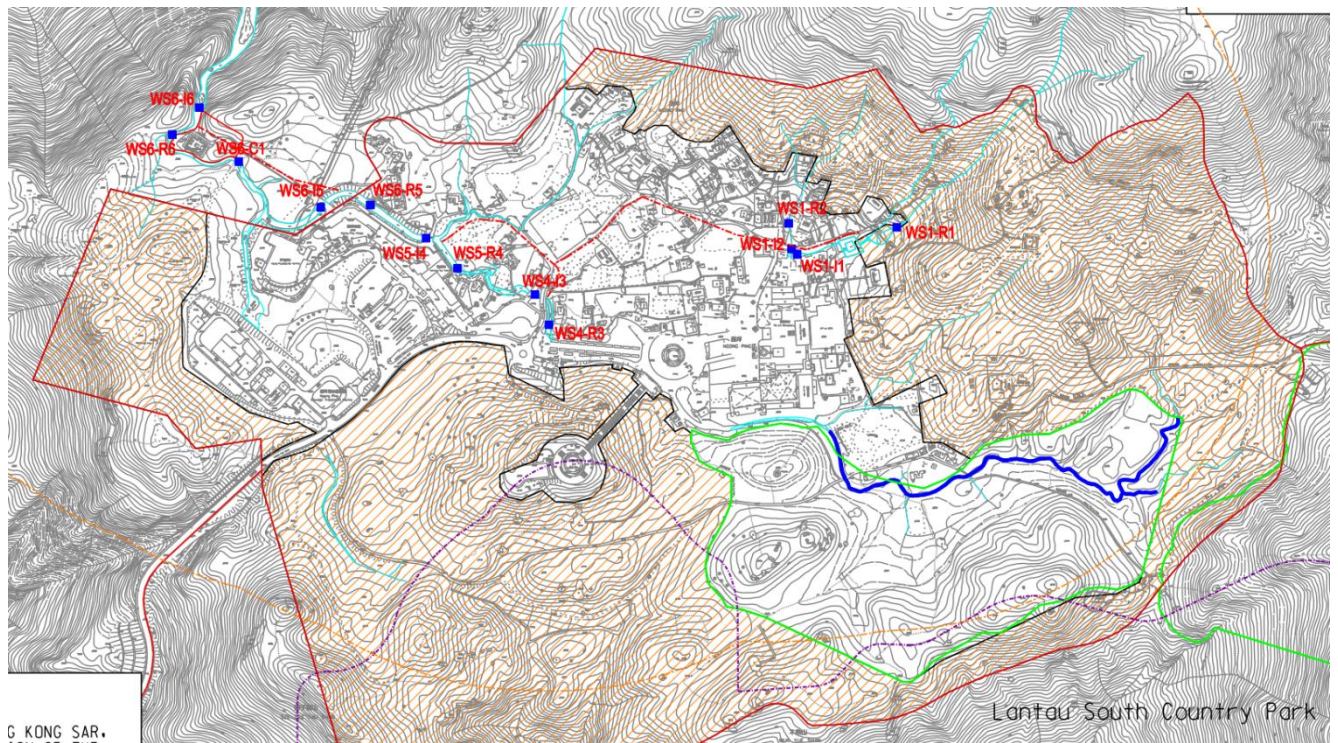


NSRs*	Monitoring Location	Type of Measurement#
NSR1	Columbarium of Po Lin Monastery	Free-field
NSR5	Village House No. 49A	Free-field
NSR8	Village House No. 34	Façade

\* NSRs: Noise Sensitive Receivers

# For Free-field measurement, +3dB(A) should be added to the measured results.

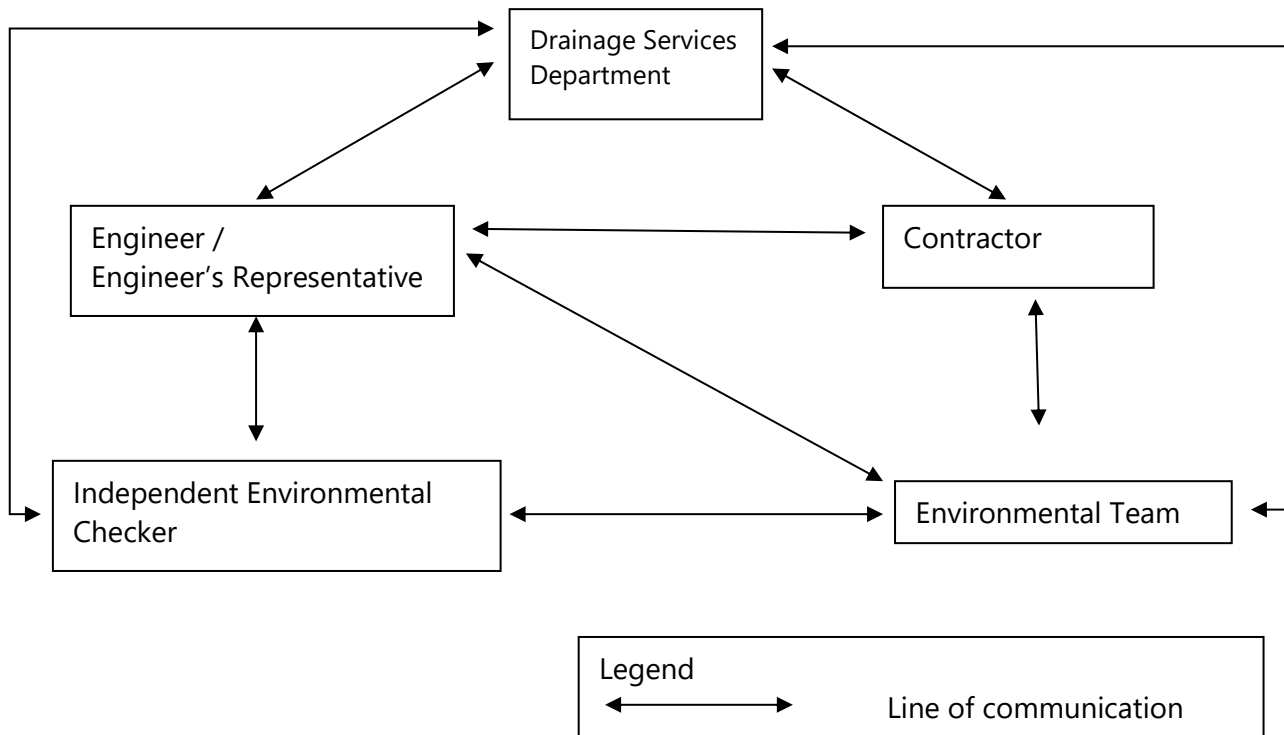
**Figure 2c Water Quality Monitoring Locations**



Station	Type
WS1-R1	Upstream reference
WS1-I1	Downstream impact
WS1-R2	Upstream reference
WS1-I2	Downstream impact
WS4-R3	Upstream reference
WS4-I3	Downstream impact
WS5-R4	Upstream reference
WS5-I4	Downstream impact
WS6-R5	Upstream reference
WS6-I5	Downstream impact
WS6-C1	Intermediate Control
WS6-R6	Upstream reference
WS6-I6	Downstream impact



### Appendix A Project Organization and Management Structure



Note: Detailed key personnel contact names and telephone numbers refer to Table 1.1.

## **Appendix B1 Construction Programme**



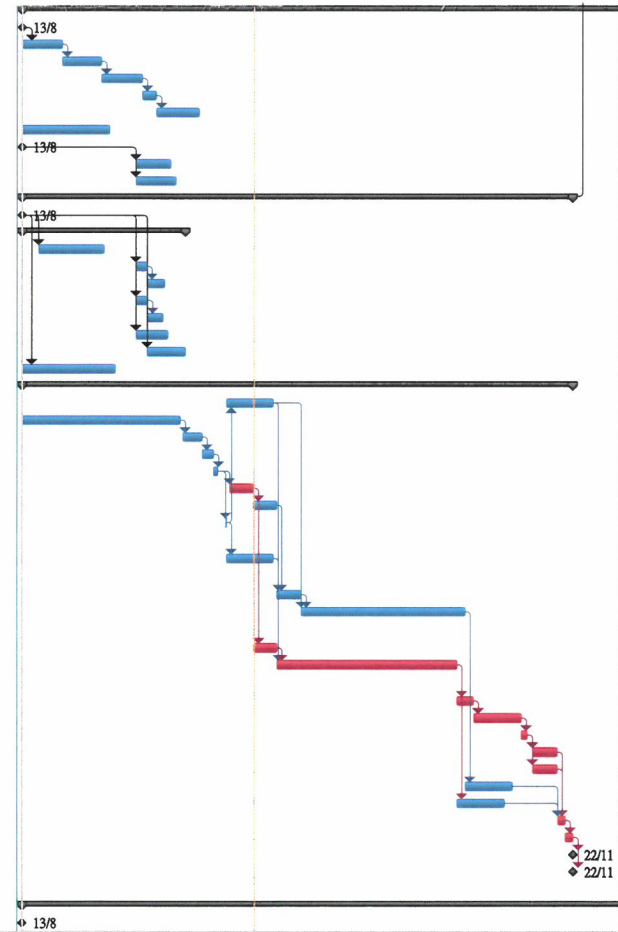
識別碼	Task Name	工期	開始時間	完成時間	前置任務	後繼任務	後半年		前半年		後半年		前半年		後半年		前半年					
							第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季	第二季			
1	DC/2019/06 Revised Programme of 13 Apr 2021 (Submitted DSD)	1038 days	13/8/2020	11/2/2024			[Gantt bar for task 1]															
2	CONTRACT KEY DATES	1038 days	13/8/2020	11/2/2024			[Gantt bar for task 2]															
3	Clause X5 Sectional Completion Date Data	1038 days	13/8/2020	11/2/2024			[Gantt bar for task 3]															
4	DC/2019/06 Starting Date	0 days	13/8/2020	13/8/2020			[Gantt bar for task 4]															
6	Duration of Sectional Works in Calendar Days After Starting Date	1038 days	13/8/2020	11/2/2024			[Gantt bar for task 6]															
7	Works Duration of Section 1 (Portion 3A)	520 days	13/8/2020	18/5/2022			[Gantt bar for task 7]															
8	Works Duration of Section 2 (Portion 3B & 3C)	672 days	13/8/2020	17/11/2022		597SS+225 days	[Gantt bar for task 8]															
9	Works Duration of Section 3 (Portion 1C, 1D, 1E & 1F)	593 days	13/8/2020	13/8/2022			[Gantt bar for task 9]															
10	Works Duration of Section 4 (Portion 1A & 1B)	445 days	13/8/2020	12/2/2022			[Gantt bar for task 10]															
11	Works Duration of Section 5 (Portion 2A & 2B)	1038 days	13/8/2020	11/2/2024			[Gantt bar for task 11]															
12	Completion Date of Sectional Works	588 days	18/2/2022	11/2/2024			[Gantt bar for task 12]															
13	Date of Completion of Works under Section 1 (Portion 3A)	0 days	22/11/2022	22/11/2022	472	19	[Gantt bar for task 13]															
14	Date of Completion of Works under Section 2 (Portion 3B & 3C)	0 days	6/2/2023	6/2/2023	509,624	20	[Gantt bar for task 14]															
15	Date of Completion of Works under Section 3 (Portion 1C, 1D, 1E & 1F)	0 days	13/8/2022	13/8/2022	204,274,289,296	21	[Gantt bar for task 15]															
16	Date of Completion of Works under Section 4 (Portion 1A & 1B)	0 days	18/2/2022	18/2/2022	124	22	[Gantt bar for task 16]															
17	Date of Completion of Works under Section 5 (Portion 2A & 2B)	0 days	11/2/2024	11/2/2024	306,453	23	[Gantt bar for task 17]															
18	Project Completion Date	588 days	19/2/2022	11/2/2024			[Gantt bar for task 18]															

Project: DC/2019/06 Revised Programme  
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Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only		Critical Split	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Deadline		Progress	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Critical			

Page 1

識別碼 Task Name	工期	開始時間	完成時間	前置任務	後續任務	後半年		前半年		後半年		前半年		後半年		前半年	
						第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季
461 LOCATION L3 - NGONG PING	735 days	13/8/2020	6/2/2023														
462 Access date	0 days	13/8/2020	13/8/2020														
463 Preparation works	50 days	13/8/2020	12/10/2020	462	464												
464 Subletting and design for PM's accommodation (MIC)	50 days	13/10/2020	10/12/2020	462	465												
465 Fabrication of PM's accommodation off site	50 days	11/12/2020	10/2/2021	464	466												
466 Site hoarding/chain link fence and project signboard at works area	15 days	11/2/2021	3/3/2021	465	467												
467 Erection of PM's accommodation (subject to PM's agreement)	50 days	4/3/2021	6/5/2021	466													
468 Works Area 3B	110 days	13/8/2020	22/12/2020														
469 Access date	0 days	13/8/2020	13/8/2020		470FS+141 days,471												
470 Preparation works	42 days	1/2/2021	24/3/2021	469FS+141 days													
471 Site hoarding/chain link fence	49 days	1/2/2021	1/4/2021	469FS+141 days													
472 PORTION 3A - DN1800	676 days	13/8/2020	22/11/2022		13												
473 Access date	0 days	13/8/2020	13/8/2020		475FS+21 days,476F												
474 Preparation Works for Portion 3A and 3B	198 days	13/8/2020	15/4/2021														
475 Subletting and procurement	82 days	7/9/2020	14/12/2020	473FS+21 days													
476 Preparation works	12 days	1/2/2021	17/2/2021	473FS+141 days 477													
477 Application of Lantau closed road permits	22 days	18/2/2021	15/3/2021	476													
478 Initial survey	13 days	1/2/2021	18/2/2021	473FS+141 days 479													
479 Tree survey	20 days	19/2/2021	13/3/2021	478													
480 Underground utilities detection	39 days	1/2/2021	20/3/2021	473FS+141 days													
481 Liaison with representatives of Ngong Ping Village, Po Lin Monastery & NP 360	45 days	18/2/2021	15/4/2021	473FS+153 days													
482 Establishment of ET and IEC & baseline monitoring	116 days	13/8/2020	31/12/2020	473													
483 DN1800 by TBM (approx. 200m)	676 days	13/8/2020	22/11/2022														
484 Establishing method statement and obtaining approval	60 days	16/6/2021	25/8/2021	491	494,496												
485 Obtain approval of CEDD & AFCD for Transplantation of cherry trees	191 days	13/8/2020	7/4/2021	486FS+3 days													
486 Transplant cherry trees at L305	24 days	12/4/2021	10/5/2021	485FS+3 days 487													
487 installation of settlement monitoring points and baseline monitoring works	14 days	11/5/2021	27/5/2021	486	488												
488 Trial pit excavation	5 days	28/5/2021	2/6/2021	487	489,491												
489 Construction of launching pit at L305	30 days	21/6/2021	26/7/2021	488	495,490												
490 Construction of receiving pit at L305A	30 days	27/7/2021	30/8/2021	489	493												
491 Received CE No. 007 regarding revised design of proposed DN1800 drainage between L305 & Intake No. 3	1 day	15/6/2021	15/6/2021	488	492,484												
492 Tendering & Re-tendering of revised design between L305 & Intake No.3 [CE No. 007]	60 days	16/6/2021	25/8/2021	491	493												
493 Setting up for hand digging at MHL305A	30 days	31/8/2021	6/10/2021	490,492	494												
494 Trenchless by using hand digging between L305A to Outfall No.2 (40m approx, 0.2m/day)	200 days	7/10/2021	13/6/2022	493,484	502												
495 Setting up for hand digging at MHL305	30 days	27/7/2021	30/8/2021	489	496												
496 Trenchless by using hand digging between L305 to Intake No.3 (40m approx, 0.2m/day)	220 days	31/8/2021	31/5/2022	495,484	503,497												
497 Setting up of TBM at Launching Pit at MHL305	21 days	1/6/2022	25/6/2022	496	498												
498 TBM pipe jacking between L305 to L305A (120m approx, 2m/day)	60 days	27/6/2022	5/9/2022	497	499												
499 Extraction of TBM from L305A	7 days	6/9/2022	14/9/2022	498	500FS+7 days,501FS												
500 Construction of MH L305	30 days	23/9/2022	29/10/2022	499FS+7 days 504													
501 Construction of MH L305A	30 days	23/9/2022	29/10/2022	499FS+7 days 504													
502 Construction of Outfall No. 2	60 days	14/6/2022	23/8/2022	494	504												
503 Construction of Intake No.3	60 days	1/6/2022	11/8/2022	496	504												
504 Reinstatement works	10 days	31/10/2022	10/11/2022	502,503,500,501	505												
505 Final site clearance	10 days	11/11/2022	22/11/2022	504	506,507												
506 Planned completion date of Section 1 (Portion 3A)	0 days	22/11/2022	22/11/2022	505													
507 Sectional Completion of Section 1 (Portion 3A)	0 days	22/11/2022	22/11/2022	505													
508																	
509 PORTION 3B - DN1500 & Box Culvert team C	735 days	13/8/2020	6/2/2023		14												
510 Access date	0 days	13/8/2020	13/8/2020														



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Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only	Critical Split
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline	Progress
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Critical	

識別碼 Task Name	工期	開始時間	完成時間	前置任務	後續任務	後半年		前半年		後半年		前半年		後半年		前半年	
						第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季
511	<b>DN1500 by TBM (approx. 440m)</b>	<b>621 days</b>	<b>13/8/2020</b>	<b>16/9/2022</b>													
512	Establishing method statement and obtaining approval	70 days	13/8/2020	5/11/2020													
513	Set up of environmental mitigation measures	70 days	6/11/2020	29/1/2021	512												
514	Trial pit excavation	2 days	30/1/2021	1/2/2021	513												
515	Construction of receiving pit at L304A	30 days	5/5/2021	9/6/2021	516												
516	Construction of receiving pit at L303	26 days	30/3/2021	4/5/2021	517												
517	Construction of sacking pit at L302	45 days	2/2/2021	29/3/2021	514												
518	Setting up of TBM at L302	32 days	30/3/2021	1/5/2021	517												
519	Trenchless construction by TBM (approx. 120m from L302 to L303, 2m/day)	37 days	12/5/2021	25/6/2021	518,516												
520	Extraction of TBM at L303	7 days	26/6/2021	5/7/2021	519												
521	Setting up of TBM at L303	14 days	6/7/2021	21/7/2021	520												
522	Trenchless construction by TBM (approx. 140m from L303 to L304A, 2m/day)	70 days	22/7/2021	13/10/2021	521,515												
523	Extraction of TBM from L304A	7 days	15/10/2021	22/10/2021	522												
524	Setting up of TBM at L302	14 days	23/10/2021	8/11/2021	531,523												
525	Trenchless construction by TBM (approx. 90m from L302 to L301, 2m/day)	45 days	9/11/2021	3/1/2022	524,523												
526	Extraction of TBM at L301	7 days	4/1/2022	11/1/2022	525												
527	Setting up of TBM at L301	14 days	12/1/2022	27/1/2022	526												
528	Trenchless construction by TBM (approx. 80m from L301 to Intake no.1, 2m/day)	40 days	28/1/2022	18/3/2022	527												
529	Extraction of TBM from Intake No. 1	7 days	19/3/2022	26/3/2022	528												
530	Construction of receiving pit at Intake No.1	30 days	10/6/2021	16/7/2021	515												
531	Construction of the sacking pit at L301	30 days	17/7/2021	20/8/2021	530												
532	Construction of manholes L304	60 days	23/10/2021	4/1/2022	523												
533	Construction of manholes L303	30 days	6/7/2021	9/8/2021	520												
534	Construction of manholes L302	30 days	28/3/2022	6/5/2022	529												
535	Construction of manholes L301	30 days	7/5/2022	13/6/2022	529,534												
536	Construction of Intake No.1	60 days	14/6/2022	23/8/2022	529,535												
537	Final reinstatement works	10 days	24/8/2022	3/9/2022	532,533,534,535,538												
538	Final site clearance	10 days	5/9/2022	16/9/2022	537												
539	<b>Box Culvert (approx. 252m)</b>	<b>735 days</b>	<b>13/8/2020</b>	<b>6/2/2023</b>													
540	Set up of environmental mitigation measures	90 days	13/8/2020	28/11/2020													
541	Submission of method statement for construction of box culvert & approval	90 days	13/8/2020	28/11/2020													
542	installation of settlement monitoring points and baseline monitoring works	14 days	30/11/2020	15/12/2020	541												
543	Trial pit excavation	10 days	16/12/2020	29/12/2020	540,542												
544	<b>CH205 - CH219</b>	<b>130 days</b>	<b>5/8/2022</b>	<b>10/1/2023</b>													
545	Excavation and Erection of ELS	45 days	5/8/2022	27/9/2022	556												
546	Make good the foundation and construction of base slab	15 days	28/9/2022	17/10/2022	545												
547	Construction of wall & top slab	15 days	18/10/2022	3/11/2022	546												
548	Construction of Outfall No.1	40 days	4/11/2022	20/12/2022	547												
549	Backfilling and reinstatement works	15 days	21/12/2022	10/1/2023	548												
550	<b>CH190 - CH205</b>	<b>90 days</b>	<b>13/6/2022</b>	<b>27/9/2022</b>													
551	Excavation and Erection of ELS	45 days	13/6/2022	4/8/2022	612												
552	Make good the foundation and construction of base slab	15 days	5/8/2022	22/8/2022	551												
553	Construction of wall & top slab	15 days	23/8/2022	8/9/2022	552												
554	Backfilling and reinstatement works	15 days	9/9/2022	27/9/2022	553												
555	<b>CH175 - CH190</b>	<b>90 days</b>	<b>13/6/2022</b>	<b>27/9/2022</b>													
556	Excavation and Erection of ELS	45 days	13/6/2022	4/8/2022	561												
557	Make good the foundation and construction of base slab	15 days	5/8/2022	22/8/2022	556												
558	Construction of wall & top slab	15 days	23/8/2022	8/9/2022	557												
559	Backfilling and reinstatement works	15 days	9/9/2022	27/9/2022	558												
560	<b>CH160 - CH175</b>	<b>90 days</b>	<b>14/4/2022</b>	<b>4/8/2022</b>													
561	Excavation and Erection of ELS	45 days	14/4/2022	11/6/2022	566												
562	Make good the foundation and construction of base slab	15 days	13/6/2022	29/6/2022	561												
563	Construction of wall & top slab	15 days	30/6/2022	18/7/2022	562												
564	Backfilling and reinstatement works	15 days	19/7/2022	4/8/2022	563												
565	<b>CH145 - CH160</b>	<b>90 days</b>	<b>19/2/2022</b>	<b>11/6/2022</b>													
566	Excavation and Erection of ELS	45 days	19/2/2022	13/4/2022	571												
567	Make good the foundation and construction of base slab	15 days	14/4/2022	5/5/2022	566												
568	Construction of wall & top slab	15 days	6/5/2022	24/5/2022	567												
569	Backfilling and reinstatement works	15 days	25/5/2022	11/6/2022	568												
570	<b>CH130 - CH145</b>	<b>90 days</b>	<b>22/12/2021</b>	<b>13/4/2022</b>													
571	Excavation and Erection of ELS	45 days	22/12/2021	18/2/2022	576												
572	Make good the foundation and construction of base slab	15 days	19/2/2022	8/3/2022	571												
573	Construction of wall & top slab	15 days	9/3/2022	25/3/2022	572												
574	Backfilling and reinstatement works	15 days	26/3/2022	13/4/2022	573												
575	<b>CH115 - CH130</b>	<b>90 days</b>	<b>30/10/2021</b>	<b>18/2/2022</b>													
576	Excavation and Erection of ELS	45 days	30/10/2021	21/12/2021	581												
577	Make good the foundation and construction of base slab	15 days	22/12/2021	11/1/2022	576												
578	Construction of wall & top slab	15 days	12/1/2022	28/1/2022	577												
579	Backfilling and reinstatement works	15 days	29/1/2022	18/2/2022	578												
580	<b>CH100 - CH115</b>	<b>90 days</b>	<b>4/9/2021</b>	<b>21/12/2021</b>													
581	Excavation and Erection of ELS	45 days	4/9/2021	29/10/2021	600FS+30 days	582,576											
582	Make good the foundation and construction of base slab	15 days	30/10/2021	16/11/2021	581												
583	Construction of wall & top slab	15 days	17/11/2021	3/12/2021	582												

Project: DC/2019/06 Revised Progra  
Date: 28/7/2021

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only	Critical Split
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline	Progress
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Critical	



識別碼	Task Name	工期	開始時間	完成時間	前置任務	後槽任務	後半年		前半年		後半年		前半年		後半年		前半年	
							第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季	第二季	第三季	第四季	第一季
584	Backfilling and reinstatement works	15 days	4/12/2021	21/12/2021	583	622												
585	<b>CH85 - CH100</b>	<b>90 days</b>	<b>30/10/2021</b>	<b>18/2/2022</b>														
586	Excavation and Erection of ELS	45 days	30/10/2021	21/12/2021	592	587,602												
587	Make good the foundation and construction of base slab	15 days	22/12/2021	11/1/2022	586	588												
588	Construction of wall & top slab	15 days	12/1/2022	28/1/2022	587	589												
589	Backfilling and reinstatement works	15 days	29/1/2022	18/2/2022	588	622												
590	<b>CH70 - CH85</b>	<b>120 days</b>	<b>31/7/2021</b>	<b>21/12/2021</b>														
591	Tree felling & Noise Barrier Erection	30 days	31/7/2021	3/9/2021	600	592												
592	Excavation and Erection of ELS	45 days	4/9/2021	29/10/2021	591	593,586												
593	Make good the foundation and construction of base slab	15 days	30/10/2021	16/11/2021	592	594												
594	Construction of wall & top slab	15 days	17/11/2021	3/12/2021	593	595												
595	Backfilling and reinstatement works	15 days	4/12/2021	21/12/2021	594	622												
596	<b>CH60 - CH70</b>	<b>60 days</b>	<b>20/5/2021</b>	<b>30/7/2021</b>														
597	Excavation and Erection of ELS	30 days	20/5/2021	24/6/2021	8SS+225 days,54	598												
598	Make good the foundation and construction of base slab	10 days	25/6/2021	7/7/2021	597	599												
599	Construction of wall & top slab	10 days	8/7/2021	19/7/2021	598	600												
600	Backfilling and reinstatement works	10 days	20/7/2021	30/7/2021	599	581FS+30 days,622.4												
601	<b>CH45 - CH60</b>	<b>90 days</b>	<b>22/12/2021</b>	<b>13/4/2022</b>														
602	Excavation and Erection of ELS	45 days	22/12/2021	18/2/2022	586	603,607												
603	Make good the foundation and construction of base slab	15 days	19/2/2022	8/3/2022	602	604												
604	Construction of wall & top slab	15 days	9/3/2022	25/3/2022	603	605												
605	Backfilling and reinstatement works	15 days	26/3/2022	13/4/2022	604													
606	<b>CH30 - CH45</b>	<b>90 days</b>	<b>19/2/2022</b>	<b>11/6/2022</b>														
607	Excavation and Erection of ELS	45 days	19/2/2022	13/4/2022	602	608,612												
608	Make good the foundation and construction of base slab	15 days	14/4/2022	5/5/2022	607	609												
609	Construction of wall & top slab	15 days	6/5/2022	24/5/2022	608	610												
610	Backfilling and reinstatement works	15 days	25/5/2022	11/6/2022	609	622												
611	<b>CH15 - CH30</b>	<b>90 days</b>	<b>14/4/2022</b>	<b>4/8/2022</b>														
612	Excavation and Erection of ELS	45 days	14/4/2022	11/6/2022	607	613,551												
613	Make good the foundation and construction of base slab	15 days	13/6/2022	29/6/2022	612	614												
614	Construction of wall & top slab	15 days	30/6/2022	18/7/2022	613	615												
615	Backfilling and reinstatement works	15 days	19/7/2022	4/8/2022	614	622												
616	<b>CH0 - CH15</b>	<b>130 days</b>	<b>5/8/2022</b>	<b>10/1/2023</b>														
617	Excavation and Erection of ELS	45 days	5/8/2022	27/9/2022	551	618												
618	Make good the foundation and construction of base slab	15 days	28/9/2022	17/10/2022	617	619												
619	Construction of wall & top slab	15 days	18/10/2022	3/11/2022	618	620												
620	Construction of Intake No.2	40 days	4/11/2022	20/12/2022	619	621												
621	Backfilling and reinstatement works	15 days	21/12/2022	10/1/2023	620	622												
622	Final reinstatement works	10 days	11/1/2023	21/1/2023	615,549,554,559,623,631,632													
623	Final site clearance	10 days	26/1/2023	6/2/2023	622													
624	<b>PORTION 3C</b>	<b>672 days</b>	<b>13/8/2020</b>	<b>17/11/2022</b>		14												
625	<b>Access date</b>	<b>0 days</b>	<b>13/8/2020</b>	<b>13/8/2020</b>														
626	Subletting and procurement	36 days	18/11/2021	31/12/2021	629													
627	Preparation Works	55 days	30/6/2021	2/9/2021		628												
628	Coordination with DSD sewage treatment plant	11 days	3/9/2021	15/9/2021	627	629												
629	Planting of trees for compensation (subject to PM's instruction)	51 days	16/9/2021	17/11/2021	628	630,626												
630	Establishment works for planted trees	296 days	18/11/2021	17/11/2022	629	631,632												
631	<b>Planned completion date of Section 1 (Portion 3B &amp; 3C)</b>	<b>0 days</b>	<b>21/1/2023</b>	<b>21/1/2023</b>		622,630,538												
632	<b>Sectional Completion of Section 1 (Portion 3B &amp; 3C)</b>	<b>0 days</b>	<b>21/1/2023</b>	<b>21/1/2023</b>		622,630,538												

Project: DC/2019/06 Revised Progra  
Date: 28/7/2021

Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only		Critical Split	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Deadline		Progress	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Critical			

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**Appendix B2 Works Undertaken Illustrations**

<b>Portion A</b>	<b>Portion B</b>
	
<p>- TBM operation (L305A)</p>	<p>- Excavation Works (Bay 9)</p>
<b>Portion C</b>	
	
<p>- Excavation Works (Intake No.1)</p>	

### Appendix B3 Proactive Environmental Protection or Control Measures for Next Three Month

Activity Impact	Excavation of Trench or Pit	Pipe Lining	Installation of Drainage Pipe	Box culvert	TBM	Control Measures
<b>Air Pollution Nuisance</b>	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Use of regular watering to reduce dust emissions</li> <li>- Open stockpiles shall be avoided or covered.</li> </ul>
<b>Noise Nuisance</b>	✓	✓	✓		✓	<ul style="list-style-type: none"> <li>- Use of quieter plant (QPME)</li> <li>- Use suitable acoustic enclosure.</li> <li>- Installation of a fixed noise barrier.</li> </ul>
<b>Water Nuisance</b>		✓		✓	✓	<ul style="list-style-type: none"> <li>- Intercept the surface runoff by sand bag or etc.</li> <li>- Treat the wastewater before discharge.</li> </ul>
<b>Waste Nuisance</b>		✓	✓		✓	<ul style="list-style-type: none"> <li>- The site and surroundings shall be kept tidy and litter free.</li> <li>- General refuse arising on-site should be stored in enclosed bins separately from C&amp;D and chemical wastes</li> <li>- Recycle as many C&amp;D materials as possible on-site</li> </ul>
<b>Ecology</b>	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>- avoid damage and disturbance to the remaining and surrounding natural habitat</li> <li>- construction activities should be restricted to the proposed works boundary</li> </ul>

Moreover, the ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirements. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

## Appendix B4 Waste Flow Table

Name of Department: DSD

Contract No.: DC/2019/06

### Monthly Summary Waste Flow Table for 2023

Contract Title: Drainage Improvement Works in Northern Territories (remaining works), Southern Hong Kong Island & Ngong Ping  
Location: L3 - Ngong Ping

Month	Quantities of Inert C&D Materials Generated						Quantities of Non-inert C&D Materials Generated				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastic (see Note 3)	Chemical Waste	Other, e.g. General Refuse
	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)
January	84.83	0.00	0.00	0.00	74.60	0.00	0.00	0.00	0.00	0.00	10.23
February	254.73	0.00	0.00	0.00	247.49	0.00	0.00	0.00	0.00	0.00	7.24
March	266.08	0.00	0.00	0.00	245.02	0.00	0.00	0.00	0.00	0.00	21.06
April											
May											
June											
<b>Sub-total</b>	<b>605.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>567.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>38.53</b>
July											
August											
September											
October											
November											
December											
<b>Yearly Total</b>	<b>605.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>567.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>38.53</b>

Monthly Forecast of Total Quantities of C&D Materials to be Generated from the Contract (for April 2023)										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastic (see Note 3)	Chemical Waste	Other, e.g. General Refuse
(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)	(0.00tonne)
320.00	0.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	20.00

Notes: (1) The performance targets are given in PS Clause 1.104(14).

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

## Appendix C1 EP-456/2013/B Conditions

### Summary Table for Status of Compliance / Required Submission

EP Conditions	Submission(s)	Submission Date	Approval Status
2.6	Landscape Plan (Rev. G)	02/03/2021	Approved on 23/03/2021
2.7	Landscape as-built drawing(s)	At least one month before the Project commences operation	*
2.8	Updated Baseline Vegetation Survey Report (Rev. E)	19/02/2021	*
	Floral Protection Plan (Rev. J)	04/04/2021	*
	Floral Transplantation Plan (Rev. E)	11/12/2020	*
2.10	Aquatic Fauna Translocation Plan (Rev. H)	24/12/2020	*
2.11	Aquatic Fauna Translocation Survey Report (Rev. B)	02/03/2021	*
4.3	Noise Baseline Monitoring Report (Rev. A)	30/10/2020	*
	Water Quality Baseline Monitoring Report (Rev. D)	29/01/2021	*
4.4	Monthly EM&A Report (February 2023)	09/03/2023	*

Remarks: \* Approval not required in EP-456/2013/B



## Appendix C2 Mitigation Measures Implementation (Construction Phase)

Environmental Protection Measures (Construction Phase) <sup>(1)</sup>	Status
<b>A) Air Quality</b>	--
Watering once per hour for 12 hours a day at <b>exposed soil in all active works areas and paved haul roads</b> to reduce dust emissions by 91.7%. The amount of water to be applied would be 0.25L/m <sup>2</sup> for the respective watering frequency.	^
Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices:	--
■ Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather;	^
■ Use of frequent watering for particularly dusty construction areas and areas close to ASRs;	^
■ Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines;	^
■ Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs;	^
■ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations;	^
■ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;	^
■ Imposition of speed controls for vehicles on unpaved site roads, 8 km per hour is the recommended limit;	^
■ Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs;	^
■ Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;	^
■ Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; and	N/A
■ Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	N/A
<b>B) Noise</b>	--
The use of quieter plant (QPME) is specified for the list of equipment:	--
■ Tracked excavator fitted with hydraulic rock breaker; ■ Concrete lorry mixer; ■ Tracked mobile crane (132kW, 55t);	
■ Dump Truck; ■ Tracked excavator (14t); ■ Generator, Super Silenced, 70 dB(A) at 7m; ■ Poker vibratory;	^
■ Hand Held Electric Circular Saw, 150mm Blade with SWL of 103dB(A) or less;	
■ Electric Chain-Saw, Hand-held; and ■ Water Pump, Submersible (Electric).	
For the Columbarium (NSR1), the vertical gaps along of edge of the solid boundary wall facing the works area WA4 should be covered with acoustic fabric or small barrier for noise screening.	^
The use of temporary noise barrier / enclosure are specified for the list of equipment:	--
■ Bar Bender and Cutter (Electric) - Noise Enclosure	
■ Tracked excavator fitted with hydraulic rock breaker - Temporary Noise barrier;	
■ Tracked excavator (14t) - Temporary Noise barrier	^
■ Generator, Super Silenced, 70 dB(A) at 7m - Noise Enclosure; and	
■ Hand Held Electric Circular Saw, 150mm Blade - Noise Enclosure.	
Installation of a fixed noise barrier of 3m in height between the NSR5 and the open cut trench (Activities 4 and 4+ at Works Section 5)	N/A (Works is ended in that section)
Implementation of further good site practices:	--
■ Only well-maintained plant should be operated on- site and PME should be serviced regularly during the construction programme;	^
■ Silencers or mufflers on construction equipment should be utilised and properly maintained throughout the construction programme;	^
■ Any mobile PME should be sited as far from NSRs as possible;	^
■ Machines and PME that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;	^
■ PME known to emit noise strongly in one direction should be orientated to direct away from the nearby NSRs;	^
■ Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities;	^
■ Use of acoustic enclosure, in accordance with EPD's A Practical Guide for the Reduction of Noise from Construction Works; and	^
■ Re-scheduling of works should be considered to ameliorate the residual impact.	^
<b>C) Water Quality</b>	--
In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures shall include the following:	^
■ At the establishment of Site Office (SO), works area (WA1 and WA2) and stockpiling areas (SA1, SA2, SA3 and SA4; (see Figures 2.9a-2.9g), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided to divert the stormwater to silt removal facilities. The <b>design of the temporary on-site drainage system</b> will be undertaken by the Contractor prior to the commencement of construction;	^

## Drainage Improvement Works at Ngong Ping

Monthly EM&A Report

Environmental Protection Measures (Construction Phase) <sup>(1)</sup>	Status
<p>■ Dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. Sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates;</p>	^
<p>■ While ProPECC PN 1/94 requires construction works should be programmed to minimise surface excavation works during <b>rainy seasons</b> (April to September). By the nature of the pipe laying works, it is considered not practicable to avoid excavation works in the wet season as this would substantially affect the overall construction programme. However, for works at areas that directly interface with the existing watercourses, excavation works shall avoid the rainy season as far as possible. These include <b>Intake A</b> interfacing the stream, <b>Intake B</b> interfacing the U channel, <b>Outfall A</b> interfacing the gabion channel, <b>Intake C/RP3</b> interfacing the gabion channel and <b>Outfall B/RP4</b> interfacing Ngong Ping Stream (see Figures 2.9a–2.9g). For the works in the above listed areas, an impermeable <b>cofferdam or similar barrier</b> to the level above the stream bank shall be erected to completely enclose these areas before any works are undertaken. This will ensure that any contaminated runoff from the works areas will not get into the ambient watercourses. These barriers shall not be removed until the interfacing works and the relevant upstream connected drains have been completed. All exposed earth areas should be completed and vegetated as soon as possible after the earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable;</p>	^
<p>■ Exposed slope surfaces should be covered by tarpaulin or other means during the rainy season;</p>	^
<p>■ The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The sizes may vary depending upon the flow rate, but for a flow rate of 0.1m<sup>3</sup>/s, a sedimentation basin of 30m<sup>3</sup> would be required and for a flow rate of 0.5m<sup>3</sup>/s the basin would be 150m<sup>3</sup>. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction;</p>	^
<p>■ The overall slope of works sites should be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads should be protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during the prolonged periods of inclement weather and the reduction of surface sheet flows;</p>	^
<p>■ All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure their proper and efficient operation at all times particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of proper waste receiving facilities. As the area is within the water gathering grounds, on-site disposal of silts/grits shall not be allowed;</p>	^
<p>■ Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet season is inevitable, they should be dug and backfilled in short sections wherever practicable. The water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</p>	^
<p>■ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers;</p>	^
<p>■ Precautions to be taken at any time of the year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted and during or after rainstorms, are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes;</p>	^
<p>■ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at the exit of every construction site where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel- washing bay to public roads should be paved with sufficient backfall toward the wheel-washing bay to prevent vehicle tracking of soil and silty water to public roads and drains;</p>	^
<p>■ Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. Oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for oil interceptors to prevent flushing during heavy rain;</p>	N/O
<p>■ Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust and surface run off. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;</p>	^
<p>■ Major stockpiled areas shall be sited outside of the country parks area (Works Section 6) and away from stream courses as far as practicable. For the stockpiling area SA4 within the country park area, stockpiling of earthed material shall be minimised and excavated soil from Works Section 6 shall be delivered to the Site Office as soon as possible. Similarly, overnight stockpiling of earthed material along the exposed trench shall be minimised as far as possible and the excavated soil shall be transferred to the designated stockpiling area as soon as possible;</p>	^
<p>■ The Contractor shall comply with WSD's General Conditions for Working within Water Gathering Grounds as applicable;</p>	^
<p>■ The construction solid waste, debris and rubbish on-site should be collected, handled and disposed of properly to avoid causing any water quality impacts. The requirements for solid waste management are detailed in Section 9 of this EIA report; and</p>	^
<p>■ All fuel tanks and chemical and bentonite storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching the nearby WSRs. There is a need to apply to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It should particularly noted that the TM-DSS specifically <b>prohibits</b> the discharge of the following substances into the inland waters:</p>	N/A
<p>■ polychlorinated biphenyls (PCB); ■ polyaromatic hydrocarbon (PAH); ■ fumigant, pesticide or toxicant ;</p>	
<p>■ radioactive substances ; ■ chlorinated hydrocarbons; ■ flammable or toxic solvents ;</p>	
<p>■ petroleum oil or tar; ■ calcium carbide; ■ wastes liable to form scum, deposits or discoloration;</p>	

Environmental Protection Measures (Construction Phase) <sup>(1)</sup>	Status
<ul style="list-style-type: none"> <li>■ sludge or solid refuse of any kind; and</li> <li>■ detergents in Group A inland waters only.</li> </ul>	
<p>The beneficial uses of the treated effluent for other on- site activities such as dust suppression, wheel washing and general cleaning etc, can minimise water consumption and reduce the effluent discharge volume and shall be encouraged. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license.</p>	^
<p>In addition to compliance with the discharge licence requirement, to prevent bank side erosion, the discharge of site effluents shall be either at existing storm drains or artificial channels. No effluent or treated surface runoff shall be allowed to discharge at natural stream course.</p>	N/A
<p>The use of bentonite slurries shall be minimised as far as possible. In addition to the requirement of a peripheral bunds and drainage system for the WA4 and SO, where the bentonite slurries will be used, to prevent any accidental release of bentonite slurry from getting into the surrounding environment, the following specific control measures shall be followed to reduce the risk and impacts of accidental spillage:</p>	--
<ul style="list-style-type: none"> <li>■ All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed;</li> </ul>	^
<ul style="list-style-type: none"> <li>■ The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only;</li> </ul>	^
<ul style="list-style-type: none"> <li>■ The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides; and</li> </ul>	^
<ul style="list-style-type: none"> <li>■ Sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary).</li> </ul>	^
<p>In order to reduce the possibility of frac-out, detailed ground investigation shall be undertaken to evaluate the likelihood of frac-out and if necessary advanced ground treatment applied before the commencement of the pipe jacking works. A member of the Contractor's site staff shall, also, be dedicated to closely monitor the ground surface above the pipe jacking head for any frac-outs release. The pipe jacking works and application of bentonite shall immediately stop if frac- outs are observed. Any frac-out shall be immediately cleaned or bunded to prevent spreading of the bentonite slurry. The Contractor shall immediately notify the Engineer and propose rectification measures to prevent further frac-out to the satisfaction of the Engineer before pipe jacking works resume. An emergency clean up kit shall be readily available at Works Section 2 and 6 where pipe jacking will be undertaken.</p>	^
<p>The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry if mixed with inert fill material to be disposed to a public filling area) and disposal at landfill should be the last resort.</p>	^
<p>The contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</p>	^
<p>Any maintenance facilities should be located outside Works Section 6 in the Lantau North Country Park. Such facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. All maintenance activities which may generate chemical waste shall be undertaken in the Site Office area, as far as possible.</p>	^
<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p>	--
<ul style="list-style-type: none"> <li>■ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;</li> </ul>	^
<ul style="list-style-type: none"> <li>■ Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and</li> </ul>	^
<ul style="list-style-type: none"> <li>■ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>	^
<p>In order to minimise the risk of accidental spillage, the use and storage of oils/chemicals/waste should be limited to absolute minimum volume and are to be removed from sites at the earliest opportunity. However, all chemical waste, fuels and oils shall be stored at the Site Office (SO), to minimise impact to the Lantau North Country Park and water gathering grounds.</p>	^
<p>In order to protect against an accidental spillage of fuel or oil, the Contractor will be required to prepare a <b>spill response plan</b> to the satisfaction of AFCD, EPD, FSD, HyD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.</p>	^
<p>At all times, the Contractor shall comply with WSD's General Conditions for Working within Water Gathering Grounds as applicable.</p>	^
<p>The sewage of the site office will be connected the existing sewer networks and be treated at the Ngong Ping STW. Portable chemical toilets and sewage holding tanks are recommended for the handling of the construction sewage generated by the workforce at other works area. The use of temporary toilets within the water gathering ground, however, is also subject to the approval of Water Services Department. <b>A licensed contractor</b> should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance</p>	^
<p>The Outfall A and Intake C and associated works areas are within the gabion channel, the construction and operation of which was previously governed by the Environmental Permit EP-192/2004. While the EP was surrendered in May 2007, the currently proposed</p>	^

## Drainage Improvement Works at Ngong Ping

### Monthly EM&A Report

#### Environmental Protection Measures (Construction Phase) <sup>(1)</sup>

Status

works at these locations shall, also, comply with the specific conditions of the EP (see Section 2.7 of this Report) as far as possible and in particular avoid works in the rainy period between April and September so as to minimise potential water quality pollution to the lowest possible.

#### D) Ecology

Good construction practice measures which should be implemented and should include:

- avoid damage and disturbance to the remaining and surrounding natural habitat;
- placement of equipment in designated areas within the existing disturbed land;
- spoil heaps should be covered at all times;
- construction activities should be restricted to the proposed works boundary; and
- disturbed areas to be reinstated immediately after completion of the works.

Landscape compensatory planting is recommended as mitigation for the loss of landscape and habitat. Recommended Planting Species included:

#### Tree

*Cinnamomum burmannii*,

*Elaeocarpus sylvestris*

*Ficus microcarpa*

*Pongamia pinnata*

*Schefflera heptaphylla*

*Sapium discolor*

N/A

Minimisation mitigation measures required to protect water quality and the three aquatic faunal species of conservation would comprise controlling surface runoff:

- All works on the banks of the natural stream should be undertaken within the dry season, where practical;
- Perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented;
- Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided to divert the stormwater to silt removal facilities;
- Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources;
- Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust and surface run off;
- Overnight stockpiling of earthed material along the exposed trench shall be minimised as far as possible and excavated soil shall be transferred to the designated stockpiling area as soon as possible;
- All bentonite slurry shall be suitably stored in accordance with Section 5.8.8 of this EIA Report to minimise the chance of spillage;
- All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils; and
- Pipe jacking areas shall be closely monitored for frac-outs release of bentonite and frac-out area immediately cleaned if they occur.

The particular measures to protect the ecology of the Lantau North Country Park are summarised below:

- Major stockpiled areas shall be sited outside of the country parks area (Works Section 6) and away from stream courses as far as practicable;
- All backfilling material and cement required for this Works Section 6 shall be delivered daily and only the quantity required;
- No storage of chemicals and waste in Works Section 6; and
- No construction plant maintenance facilities in Works Section 6.

Treated site drainage shall be discharged via the existing drainage system or diverted to the artificial channel to prevent stream bank erosion and directly affect the stream ecology. No site drainage shall be allowed to be discharged at the natural stream bank.

#### E) Landscape and Visual

To maximize protection of existing resources including watercourses existing trees, ground vegetation and the associated understory habitats a "No-intrusion Zone" will be designated to various areas within and along the site boundary with rigid and durable fencing for each individual no-intrusion zone. Regular checks will be carried out to ensure that the work site boundaries are not exceeded, hoarding is properly maintained and that no damage is being caused to these protected areas.

A temporary screen hoarding shall be erected around the north side of the Site Office (SO) area to screen activities from local receivers. It shall be designed and to be compatible with the existing rural context, with visually unobtrusive design and colours where appropriate.

No night time work shall be programmed avoiding light pollution to visual receivers.

#### F) Cultural Heritage

Four built heritage resources have been identified as being located in close proximity to the proposed works areas, namely, NP-19, NP-20, NP-21 and NP-26, as detailed in Appendix G1 and shown in Figures 8.12, 8.13 and 8.15 of the EIA Report. The structures may be damaged by contact with machinery and equipment. The recommended mitigation measures for each resource are as follows:

- A buffer zone of a minimum of 5 metres in size (or if due to site/engineering constraints, as large as possible buffer zone should be provided) should be marked out for NP-19, NP-20, NP-21 and NP-26 by temporary fencing and placed around the structures 2 weeks prior to the construction works commencing.

Three built heritage resources have been identified as being in close proximity to an excavation area (NP-10, NP-11 and NP-19), a condition survey must be carried out by a qualified building surveyor or engineer one month in advance of works commencing near the buildings that may be affected by ground borne vibration. The Condition Survey Report should contain descriptions of the structure, identification of fragile elements, an appraisal of the condition and working methods for any proposed monitoring

## Drainage Improvement Works at Ngong Ping

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(including frequency of monitoring) and precautionary measures that are recommended. The Contractor must implement the approved monitoring and precautionary measures.

■ Vibration monitoring should be undertaken for the duration of the construction works based upon the recommendations of the approved Condition Survey Report, which will also define the frequency of monitoring required. The maximum acceptable level of vibration will be set at 15 mm/s. Based upon the findings of the condition survey, this limit may be revised for sensitive structures. The location of monitoring points should be situated on the structure closest to the construction works, unless the maximum level is set lower than the standard 15 mm/s, in which case monitoring points should be located on each affected structure. Installation of monitoring points must not damage the historic building fabric. The location of monitoring points (and access to the property for purposes of measurement) must be agreed with the property owner prior to installation.

^

#### G) Waste Management

--

The requirements as stipulated in the ETWB TC(W) No.19/2005 Environmental Management on Construction Sites and the other relevant guidelines should be included in the Particular Specification for the Contractor as appropriate.

The future Contractor should be requested to submit a Waste Management Plan (WMP), which becomes part of the Environmental Management Plan (EMP), prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction. The WMP should include:

^

■ Waste management policy; ■ Record of generated waste; ■ Waste reduction target; ■ Waste reduction programme; ■ Role and responsibility of waste management team; ■ Benefit of waste management; ■ Analysis of waste materials; ■ Reuse, recycling and disposal plans; ■ Transportation process of waste products; and ■ Monitoring and action plan.

A trip-ticket system should be established in accordance with DevB TC(W) No. 6/2010 and Waste Disposal (Charges for Disposal of Construction Waste) Regulation to monitor the disposal of public fill and solid wastes at public filling facilities and landfills, and to control fly-tipping. A trip-ticket system would be included as one of the contractual requirements for the Contractor to strictly implement. The Engineer would also regularly audit the effectiveness of the system.

^

A recording system for the amount of waste generated, recycled and disposed (locations) should be established. The future Contractor should also provide proper training to workers regarding the appropriate concepts of site cleanliness and waste management procedures, e.g. waste reduction, reuse and recycling all the time.

^

The CEDD should be timely notified of the estimated volumes of excavated materials to be generated and the Public Fill Committee should be notified and agreement sort on the disposal of surplus inert C&D materials. Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and to ensure acceptability at public filling areas or reclamation sites.

^

Recommendations for good site practices:

--

■ The site and surroundings shall be kept tidy and litter free;

^

■ No waste shall be burnt on-site;

^

■ Make provisions in contract documents to allow and promote the use of recycled aggregates where appropriate;

^

■ The Contractor will be prohibited to dispose of C&D materials within the proposed site and at any sensitive locations including Lantau North Country Park, the Lantau South Country Park, the Ngong Ping Site of Special Scientific Interest, the Lantau Peak Special Area and Site of Special Scientific Interest and the Conservation Area, etc. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation;

^

■ Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust and surface run off;

^

■ Major stockpiled areas shall be sited outside of the country parks area (Works Section 6) and away from stream courses as far as practicable. For the stockpiling area SA4 within the country park area, stockpiling of earthed material shall be minimised and excavated soil from Works Section 6 shall be delivered to the Site Office as soon as possible. Similarly, overnight stockpiling of earthed material along the exposed trench shall be minimised as far as possible and the excavated soil shall be transferred to the designated stockpiling area as soon as possible;

^

■ Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation;

^

■ Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads;

^

■ Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork or plastic facing for construction works should also be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should be carefully planned in order to avoid over-ordering and wastage;

^

■ The Contractor should recycle as many C&D materials as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities; and

^

■ Subject to agreement with Water Service Department, adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them. Night soil should be regularly collected by licensed collectors.

^

Recommendations for waste reduction measures:

--

■ General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. General refuse shall be removed from Works Section 6 within the country park on the regular basis. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general

^

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refuse shall be cleared regularly and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited;

■ All waste containers shall be in a secure area on hardstanding;	^
■ Aluminium cans are usually collected and recovered from the waste stream by individual collectors if they are segregated and easily accessible. Separately labelled bins for their deposition should be provided as far as practicable;	^
■ Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on- site; and	^
■ Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	^
<b>Chemical waste producers should register with the EPD.</b> Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows:	--
■ Suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed;	^
■ Having a capacity of <450L unless the specifications have been approved by the EPD;	N/A
■ Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations;	^
■ Clearly labelled and used solely for the storage of chemical wastes;	^
■ Enclosed with at least 3 sides;	^
■ Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;	^
■ Adequate ventilation;	^
■ Sufficiently covered to prevent rainfall from entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary);	^
■ Incompatible materials are adequately separated;	^
■ All chemical waste, fuels and oils shall be stored at the Site Office area, to minimise impacts to the Country Park and water gathering grounds;	^
■ All maintenance activities which may generate chemical waste shall be undertaken in Site Office area, as far as possible;	^
■ The Contractor shall comply with WSD's General Conditions for Working within Water Gathering Grounds as applicable; and	^
■ Waste oils, chemicals or solvents shall not be disposed of to drain.	^

Remark:

^	Compliance of mitigation measure in the reporting period.
#	Recommendations were made in the reporting period but has not yet been improved/rectified by the Contractor.
X	Non-compliance of mitigation measure in the reporting period.
N/A	Not Applicable in the reporting period.
N/O	Not observed in the reporting period.
(1)	Detailed EIA report and EM&A Manual reference refer to the Appendix A of approved EM&A Manual.



## Appendix C3 Summary of Site Inspection

Inspection Date	Observations/ Reminders/ Recommendations	Follow Up Action	Completion Date
Follow Up action(s) of last reporting month	NIL.	N.A	N.A
<b>Weekly Site Inspection</b>			
07/03/2023	<b>Observation</b> 1) Breaker should be placed on tarpaulin sheet to prevent oil leakage.	1) Rock breaker has been removed from L305A.	09/03/2023
14/03/2023	<b>Observation</b> 1) Stockpile should be covered by tarpaulin sheet as dust control measures (Bay 9-11).  <b>Reminder</b> 1) Sandbags should be provided (intake 1).	1) A tarpaulin sheet covered the stockpile at Bay 9-11  --	14/03/2023  --
21/03/2023	<b>Reminder</b> 1) Mitigation measure for runoff control should be provided (intake 1).	--	--
28/02/2023	<b>Observation</b> 1) Good housekeeping should be maintained by the Contractor (Outfall 2) <b>Reminder</b> 1) Sandbag should be placed as site runoff control measure (intake 1). 2) Broken sandbag should be replaced (Bay 4).	1) Waste at Outfall 2 has been removed  -- --	28/03/2023  -- --
<b>Landscape and Visual</b>			
07/03/2023	--	--	--
21/03/2023	--	--	--
<b>Cultural Heritage</b>			
28/03/2023	--	--	--
<b>Quarterly Post-transplantation Works</b>			
--	--	--	--
<b>Monthly Floral Protection Measures</b>			
14/03/2023	--	--	--



# Cultural Heritage



Contract No. DPW 01/2020 –  
Environmental Team for Drainage Improvement Works at Ngong Ping (DC/2019/06)

Date: 28/3/2023 Weather: Sunny / Fine / Overcast / Rainy / Hazy Wind: Calm / Light / Breeze / Strong  
Time: 9:30 Temperature: 16 °C Humidity: High / Moderate / Low

## Monthly Environmental Site Audit

Observations/ Reminders/ Recommendations / Follow-up:

Follow-up of previous observation(s)

Nil

Observation(s)

All monitoring devices were found installed at appropriate locations.

Reminder(s)

Nil

Inspected by  
Qualified Building Surveyor (ET):

STEPHEN FUNG

Acknowledged by  
representatives of the ER:

Chau Chun Wai

Agreed with Main Contractor:

Helen LEUNG

28/3/2023

28/3/2023

28/3/2023

Photo Record (28/03/2023)



Photo 1: General View of NP-10

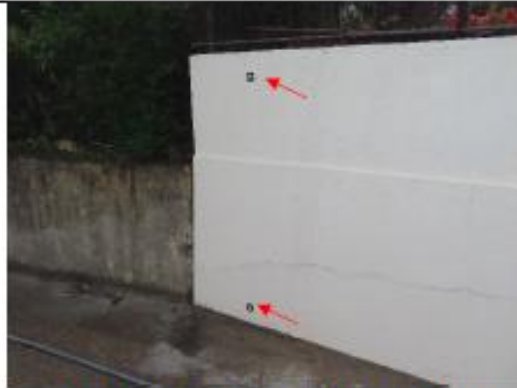


Photo 2: Reflective targets for settlement monitoring were installed on the fence wall at NP-10.



Photo 3: Tell-tales (TT1 & TT2) for crack monitoring were removed by the owner at NP-10 due to renovation works; Crack was repaired.



Photo 4: Renovation works were done at NP-10 except for the walls in Kitchen & Lavatory at the time of inspection.



Photo 5: Tell-tales for crack monitoring were installed on the fence wall at NP-10.



Photo 6: General View of NP-11

Photo Record (28/03/2023)







		
<p>Photo 7: Ground settlement marker for settlement monitoring was installed at the entrance of NP-11.</p>	<p>Photo 8: Tell-tale for crack monitoring was installed at NP-11.</p>	<p>Photo 9: NP-19 has been fenced off in accordance to EM&amp;A Manual.</p>
		
<p>Photo 10: Construction works in close proximity of NP-19.</p>	<p>Photo 11: Access to NP-20 &amp; NP-21 has been fenced off in accordance to EM&amp;A Manual.</p>	<p>Photo 12: Access to NP-20 &amp; NP-21 has been fenced off in accordance to EM&amp;A Manual.</p>

Photo Record (28/03/2023)

		
<p>Photo 13: No temporary fence has been erected around NP-26 in mutual agreement with the villagers.</p>	<p>Photo 14: A warning notice was placed near NP-26.</p>	





No.	Environmental Protection Measures (Construction Phase) <sup>(1)</sup>	Location & (Implementation Agent)	Yes (✓), No (×) N/A, N/O	Remark(s)
<b>F) Cultural Heritage</b>				
F1	<p>Four built heritage resources have been identified as being located in close proximity to the proposed works areas, namely, NP-19, NP-20, NP-21 and NP-26, as detailed in Appendix G1 and shown in Figures 8.12, 8.13 and 8.15 of the EIA Report. The structures may be damaged by contact with machinery and equipment. The recommended mitigation measures for each resource are as follows:</p> <ul style="list-style-type: none"> <li>■ A buffer zone of a minimum of 5 metres in size (or if due to site/engineering constraints, as large as possible buffer zone should be provided) should be marked out for NP-19, NP-20, NP-21 and NP-26 by temporary fencing and placed around the structures 2 weeks prior to the construction works commencing.</li> </ul> <p>Three built heritage resources have been identified as being in close proximity to an excavation area (NP-10, NP-11 and NP-19), a condition survey have been carried out by a qualified building surveyor in advance of works commencing near the buildings that may be affected by ground borne vibration. The Condition Survey Report should contain descriptions of the structure, identification of fragile elements, an appraisal of the condition and working methods for any proposed monitoring (including frequency of monitoring) and precautionary measures that are recommended. The Contractor must implement the approved monitoring and precautionary measures.</p> <ul style="list-style-type: none"> <li>■ Vibration monitoring should be undertaken for the duration of the construction works based upon the recommendations of the approved Condition Survey Report, which will also define the frequency of monitoring required. The maximum acceptable level of vibration will be set at 15mm/s. Based upon the findings of the condition survey, this limit may be revised for sensitive structures. The location of monitoring points should be situated on the structure closest to the construction works, unless the maximum level is set lower than the standard 15 mm/s, in which case monitoring points should be located on each affected structure. Installation of monitoring points must not damage the historic building fabric. The location of monitoring points (and access to the property for purposes of measurement) must be agreed with the property owner prior to installation.</li> </ul>	<p>All relevant built heritage resources (Contractor and Sub-contractors)</p>	<p>✓</p> <p>✓</p>	<p>M/I</p> <p>N/I</p>

Note:

(1) Detailed EIA report and EM&A Manual reference refer to the Appendix A of approved EM&A Manual.

N/A: Not Available, N/O: Not Observed.

# **Monthly Floral Protection Measures**



Contract No. DPW 01/2020 –  
Environmental Team for Drainage Improvement Works at Ngong Ping (DC/2019/06)

Date: 14/03/2023 Weather: Sunny / Fine / **Overcast** / Rainy / Hazy Wind: **Calm** / Light / Breeze / Strong  
Time: 09:30 am Temperature: 19 °C Humidity: **High** / Moderate / Low

**Monthly Environmental Site Audit for Floral Protection Measures**

Observations/ Reminders/ Recommendations / Follow-up:  
Follow-up of previous observation(s)

---



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**Observation(s)**

Protection Measures	Location	Actions to be Taken			Remarks
		Retain	Replace	Repair	
Post Indicating Prohibition of Access			<del>✓</del>		
1	West of Columbarium		✓		The post is nowhere to be found
2	In outfall B		✓		The post is nowhere to be found
Solid Fencing Around Plant Species					
1	Near outfall B			✓	Post should be fixed properly





Actions to be taken

Remarks

Solid Fencing at Access Entrance		Retain	Replace	Repair	
1	Behide WAF (near road of Colombarium)			✓	Post should be installed for the solid fencing to be fixed
2	Behide SA4	✓		<del>✓</del>	Avoid bring the fencing to the place
3	Near waterfall of SA4			✓	Post should be installed for the solid fencing to be fixed
Warning Signposts/Labels					
<u>Gleditsia</u>	1		✓		
<u>Ehretia</u>	2	✓			
<u>Ehretia</u>	3		✓		The signpost is nowhere to be found
<u>Ehretia</u>	4			✓	Post should be refixed

Reminder(s)

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	Name	Signature	Date
Inspected by Representative from ET:	Ray Li	Ray	14/03/2023
Acknowledged by representatives of the ER:	Jow/Do FRANCIS Ma Helina (EUN)h		14/3/2023
Agreed with Main Contractor:			14/3/2023
Checked by IEC:			

## Appendix D Monitoring Parameters Action and Limit Levels

### Noise

Action and Limit Levels for Impact Monitoring

Time Period	Monitoring Location No.	Action Level	Limit Level*
Leq, dB(A) (0700-1900 hrs in normal weekdays) <sup>(1)</sup>	NSR1 Columbarium of Po Lin Monastery	When one documented complaint is received.	70 dB(A)
	NSR5 Village House No. 49A	When one documented complaint is received.	75 dB(A)
	NSR8 Village House No. 34	When one documented complaint is received.	75 dB(A)

Note:

\*75 dB(A) for residential premises and 70 dB(A) for educational institutions, kindergartens, nurseries and all others where voice communication

(1) Any general construction work carried out during restricted hours is controlled by Construction Noise Permit (CNP) under the NCO.

### Water Quality

Action and Limit Levels for Impact Monitoring

Station(s)	DO in mg/L		Turbidity in NTU		pH		Suspended Solids in mg/L	
	AL	LL	AL	LL	AL	LL	AL	LL
WS1-R1								
WS1-I1	7.36	7.32	15.8 <sup>(5)</sup>	17.3 <sup>(6)</sup>	< 6.5 <sup>(3)</sup> or > 6.9 <sup>(4)</sup>	< 6.5 or > 8.5	14 <sup>(5)</sup>	14 <sup>(6)</sup>
WS1-R2								
WS1-I2	7.19	7.11	16.4 <sup>(5)</sup>	18.4 <sup>(6)</sup>	< 6.5 <sup>(3)</sup> or > 6.9 <sup>(4)</sup>	< 6.5 or > 8.5	10 <sup>(5)</sup>	14 <sup>(6)</sup>
WS4-R3								
WS4-I3	7.29	7.28	22.9 <sup>(5)</sup>	31.2 <sup>(6)</sup>	< 6.9 <sup>(3)</sup> or > 7.2 <sup>(4)</sup>	< 6.5 or > 8.5	13 <sup>(5)</sup>	13 <sup>(6)</sup>
WS5-R4								
WS5-I4	6.75	6.64	24.7 <sup>(5)</sup>	28.2 <sup>(6)</sup>	< 6.6 <sup>(3)</sup> or > 7.1 <sup>(4)</sup>	< 6.5 or > 8.5	9 <sup>(5)</sup>	9 <sup>(6)</sup>
WS6-R5								
WS6-I5	6.31	6.23	12.6 <sup>(5)</sup>	13.2 <sup>(6)</sup>	< 6.6 <sup>(3)</sup> or > 7.0 <sup>(4)</sup>	< 6.5 or > 8.5	10 <sup>(5)</sup>	10 <sup>(6)</sup>
WS6-C1								
WS6-R6								
WS6-I6	6.57	6.38	21.7 <sup>(5)</sup>	23.7 <sup>(6)</sup>	< 6.9 <sup>(3)</sup> or > 7.1 <sup>(4)</sup>	< 6.5 or > 8.5	12 <sup>(5)</sup>	13 <sup>(6)</sup>

Note:

AL: Action Level, LL: Limit Level

(3) Or 80% of upstream control station.

(4) Or 110% of upstream control station.

(5) Or 120% of upstream control station of the same day.

(6) Or 130% of upstream control station of the same day.

## Appendix E Event and Action Plans

### Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION		
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	Engineer Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify the IEC and Contractor.</li> <li>2. Carry out investigation.</li> <li>3. Report the results of investigation to the IEC and Contractor.</li> <li>4. Discuss with the Contractor and formulate remedial measures.</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET.</li> <li>2. Review the proposed remedial measures by the Contractor and advise the Engineer accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify the IEC, Engineer, EPD and Contractor.</li> <li>2. Identify sources.</li> <li>3. Repeat measurements to confirm findings.</li> <li>4. Increase monitoring frequency.</li> <li>5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>6. Inform the IEC, Engineer and EPD the causes and action taken for the exceedances.</li> <li>7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and Engineer informed of the results.</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the Engineer, ET and Contractor on the potential remedial action.</li> <li>2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the Engineer accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.</li> </ol>

Note: (1) ET - Environmental Team, IEC - Independent Environmental Checker;  
(2) According to EM&A Manual Table 3.4.

**Drainage Improvement Works at Ngong Ping**

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Event and Action Plan for Water Quality Monitoring (Part 1)

EVENT	ACTION			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	ER <sup>(1)</sup>	Contractor
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor;</li> <li>4. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor;</li> <li>6. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Access the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ES and the IEC and propose mitigation measures to the IEC</li> </ol>
Action Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Prepare to increase the monitoring frequency to daily;</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Access the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented;</li> <li>3. Access the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ES and the IEC and propose mitigation measures to the IEC and ER within 3 working days;</li> <li>6. Implement the agreed mitigation</li> </ol>

**Drainage Improvement Works at Ngong Ping**

Monthly EM&A Report

Event and Action Plan for Water Quality Monitoring (Part 2)

EVENT	ACTION			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	ER <sup>(1)</sup>	Contractor
Limit Level being exceeded by one consecutive sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC, the Contractor and the DEP; 4. Check monitoring data, all plant, equipment and the Contractor's working methods; 5. Discuss mitigation measures with the IEC, the ER and the Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level.	1. Discuss with the ES and the Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC, the ES and the Contractor on the proposed mitigation measures; 2. Request the Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ES, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC, the Contractor and DEP; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with the IEC, the ER and the Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC, the ES and the Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ES, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the ER, slow down or stop all or part of the construction activities.

Note: (1) ET - Environmental Team, IEC - Independent Environmental Checker;  
 (2) According to EM&A Manual Table 4.4.

Event / Action Plan for Ecological Monitoring

<b>Action Level</b>	<b>ET<sup>(1)</sup></b>	<b>IEC<sup>(1)</sup></b>	<b>ER<sup>(1)</sup></b>	<b>Contractor</b>
Non-conformity on one occasion	Identify Source Inform the IEC and the ER Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed	Check report Check the Contractor's working method Discuss with the ET and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures. Check implementation of remedial measures.	Notify Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious non-conformity until situation rectified.	Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non conformity	Identify Source Inform the IC(E) and the ER Increase monitoring frequency Discuss remedial actions with the IC(E), the ER and the Contractor Monitor remedial actions until rectification has been completed If exceedance stops, cease additional monitoring	Check monitoring report Check the Contractor's working method Discuss with the ES and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures	Notify the Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious non-conformity until situation rectified.	Amend working methods Rectify damage and undertake any necessary replacement

Note: (1) ET - Environmental Team, IEC - Independent Environmental Checker;  
(2) According to EM&A Manual Table 5.4.

Event / Action Plan for Construction/Operational Phase for Ecology Issues (Landscape and Visual)

<b>Action Level</b>	<b>ET<sup>(1)</sup></b>	<b>IEC<sup>(1)</sup></b>	<b>ER<sup>(1)</sup></b>	<b>Contractor</b>
Non-conformity on one occasion	1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the IEC and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement

Note: (1) ET - Environmental Team, IEC - Independent Environmental Checker;  
(2) According to EM&A Manual Table 6.4.



**Drainage Improvement Works at Ngong Ping**

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Event / Action Plan for Construction Phase for Heritage Issue

<b>Action Level</b>	<b>ET<sup>(1)</sup></b>	<b>IEC<sup>(1)</sup></b>	<b>ER<sup>(1)</sup></b>	<b>Contractor</b>
Non-conformity on one occasion	<ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IEC and the ER</li> <li>3. Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>4. Monitor remedial actions until rectification has been completed</li> </ol>	<ol style="list-style-type: none"> <li>1. Check report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ES and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures.</li> <li>5. Check implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol>
Repeated Non-conformity	<ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IEC and the ER</li> <li>3. Increase monitoring frequency</li> <li>4. Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>5. Monitor remedial actions until rectification has been completed</li> <li>6. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ES and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify the Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol>

Note: (1) ET - Environmental Team, IEC - Independent Environmental Checker;  
 (2) According to EM&A Manual Table 7.

## Appendix F1 Equipment Calibration Certificates (Noise Monitoring)

### Noise Monitoring Equipment Record

Monitoring Date	Model	Equipment	Serial No.
07 Mar 2023	CEL-63X Series	Sound Level Meter	1488269
	CEL-120/1	Sound Calibrator	2092809
14 Mar 2023	CEL-63X Series	Sound Level Meter	1488269
	CEL-120/1	Sound Calibrator	2092809
21 Mar 2023	CEL-63X Series	Sound Level Meter	1488300
	CEL-120/1	Sound Calibrator	2383707
28 Mar 2023	CEL-63X Series	Sound Level Meter	1488300
	CEL-120/1	Sound Calibrator	2383707



Report no.: 212769CA220999

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## CALIBRATION CERTIFICATE OF SOUND LEVEL METER

### Client Supplied Information

Client : Fugro Technical Services Limited

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Sound Level Meter  
Manufacturer : Casella

	Meter	Microphone	Preamplifier
Model No.	CEL-63X	CE-251	CEL-495
Serial No.	1488300	05011	002110
Equipment ID	N/A		

Next Calibration Date : 06-May-2023  
Specification Limit : EN 61672-1: 2003 Class 1

### Laboratory Information

Details of Reference Equipment -

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)  
Equipment ID. : R-108-1  
Date of Calibration : 07-May-2022  
Calibration Location : Calibration Laboratory of FTS      Ambient Temperature : 20±2 °C  
Method Used : By direct comparison      Relative Humidity : <80% R.H.

### Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weighting frequency response	4000Hz	-0.2	2.6 to -0.6
	2000Hz	0.9	2.8 to -0.4
	1000Hz	0.1	1.1 to -1.1
	500Hz	-3.1	-1.8 to -4.6
	250Hz	-8.5	-7.2 to -10.0
	125Hz	-16.0	-14.6 to -17.6
	63Hz	-26.1	-24.7 to -27.7
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 0.6

### Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast.
4. The UUT does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
5. The values given in this Calibration Certificate only relate to the values at the time of the test and any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by: Cuny Date: 13-5-2022 Certified by: K.T. Tsang Date: 13-5-2022  
CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

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Report no.: 212769CA222607

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**CALIBRATION CERTIFICATE OF SOUND LEVEL METER**

**Client Supplied Information**

Client : Fugro Technical Services Ltd.  
 Project : Calibration Services

**Details of Unit Under Test, UUT -**

Description : Sound Level Meter  
 Manufacturer : Casella

	Meter	Microphone	Preamplifier
Model No.	CEL-63X	CE-251	CEL-495
Serial No.	1488269	03914	003984

Equipment ID : N/A  
 Next Calibration Date : 06-Nov-2023  
 Specification Limit : EN 61672-1: 2003 Class 1

**Laboratory Information**

**Details of Reference Equipment -**

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)  
 Equipment ID. : R-108-1

Date of Receipt : 03-Nov-2022  
 Date of Calibration : 07-Nov-2022

Calibration Location : Calibration Laboratory of FTS      Ambient Temperature : 20±2 °C  
 Method Used : By direct comparison      Relative Humidity : <80% R.H.

**Calibration Results :**

Parameters	Mean Value (dB)	Specification Limit(dB)
A-weighting frequency response	4000Hz	1.0      2.6 to -0.6
	2000Hz	1.2      2.8 to -0.4
	1000Hz	-0.1      1.1 to -1.1
	500Hz	-3.4      -1.8 to -4.6
	250Hz	-8.8      -7.2 to -10.0
	125Hz	-16.2      -14.6 to -17.6
	63Hz	-26.3      -24.7 to -27.7
Differential level linearity	94dB-104dB	± 0.6
	104dB-114dB	± 0.6

**Remarks :**

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast
4. The UUT does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
5. The values given in this Calibration Certificate only relate to unit under test and the values measured at the time of the test. Any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by : [Signature] Date : 10-11-2022 Certified by : [Signature] Date : 10-11-2022  
 CA-R-297 (22/07/2009)      Leung Kwok Tai (Assistant Manager)

\*\* End of Report \*\*





FUGRO TECHNICAL SERVICES LIMITED  
Fugro Development Centre  
5 Lok Yi Street, Tai Lam  
Tuen Mun, NT  
Hong Kong

Report no.: 212769CA222024(1)

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## CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

### Client Supplied Information

Client : Materialab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT

Description : Sound Calibrator  
Manufacturer : Casella (Model CEL-120/1)  
Serial No. : 2383707  
Equipment ID : N/A

Next Calibration Date : 25-Aug-2023

Specification Limit : EN 60942: 2003 Class 1

### Laboratory Information

Details of Calibration Equipment

Description : Reference Sound level meter  
Equipment ID. : R-119-2

Date Receipt of UUT : 22-Aug-2022

Date of Calibration : 26-Aug-2022

Calibration Location : Calibration Laboratory of FTS Ambient Temperature : 20±2 °C

Method Used : By direct comparison Relative Humidity : <80% R.H.

### Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	-0.3 dB	±0.4dB
114dB	-0.1 dB	

### Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. The equipment under test does comply with the specification limit.
4. The values given in this Calibration Certificate only relate to the unit-under-test and the values measured at the time of the test. Any uncertainties quoted will not include allowances for the environmental changes, variation and shock during transportation, or the capability of any other laboratory to repeat the measurement.

Checked by :  Date : 8-9-2022 Certified by :  Date : 10-9-2022  
CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

\*\* End of Report \*\*



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Tuen Mun, NT  
Hong Kong

Report no.: 212769CA221008

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## CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Fugro Technical Services Ltd.

Project : Calibration Services

### Client Supplied Information

#### Details of Unit Under Test, UUT

Description : Sound Calibrator  
Manufacturer : Casella (Model CEL-120/1)  
Serial No. : 2092809  
Equipment ID : N/A  
Next Calibration Date : 18-May-2023  
Specification Limit : EN 60942: 2003 Class 1

### Laboratory Information

#### Details of Calibration Equipment

Description : Reference Sound level meter  
Equipment ID : R-119-2  
Date of Calibration : 19-May-2022  
Calibration Location : Calibration Laboratory of FTS      Ambient Temperature :  $20 \pm 2$  °C  
Method Used : By direct comparison      Relative Humidity : <80% R.H.

### Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit
94dB	-0.1 dB	±0.4dB
114dB	0.0 dB	

### Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. The unit under test complies with the specification limit.
4. The values given in this Calibration Certificate only relate to the unit-under-test and the values measured at the time of the test. Any uncertainties quoted will not include allowances for the environmental changes, variation and shock during transportation, or the capability of any other laboratory to repeat the measurement.

Checked by : Cuny Date : 26-5-2022 Certified by : Kit Young Date : 26-5-2022  
CA-R-297 (22/07/2009)      Leung Kwok Tai (Assistant Manager)

\*\* End of Report \*\*





## **Appendix F2 Equipment Calibration Certificates (Water Quality Monitoring)**



FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre  
5 Lok Yi Street, Tai Lam  
Tuen Mun, NT  
Hong Kong

Report No. : 142626WA230201(1)



Page 1 of 3

**Report on Calibration of YSI EXO-3 Multi-parameter Water Quality Meter**

**Information Supplied by Client**

Client : Fugro Technical Services Limited (MCL)  
Client's address : 13/F, Fugro House – KCC2, No. 1 Kwai On Road, Kwai Chung, N.T., H.K.  
Sample description : One YSI EXO-3 Multi-parameter Water Quality Meter  
Client sample ID : Serial No. 19A105808  
Test required : Calibration of the YSI EXO-3 Multi-parameter Water Quality Meter

**Laboratory Information**

Lab. sample ID : WA230201/2  
Date sample received : 19/01/2023  
Date of calibration : 10/02/2023  
Next calibration date : 09/05/2023  
Test method used : In-house comparison method

*Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.*

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Report No. : 142626WA230201(1)

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**Results :**

**A. pH calibration**

pH reading at 25°C for Q.C. solution(6.86) and at 25°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.25	+0.07
6.86	6.94	+0.08

**B. Salinity calibration**

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
1	0.93	-0.07	± 0.1
10	9.90	-0.10	± 0.5
20	19.12	-0.88	± 1.0
30	29.93	-0.07	± 1.5
40	39.50	-0.5	± 2.0

**C. Dissolved Oxygen calibration**

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	8.72	8.58
2	8.56	8.56
3	9.09	8.95
Average	8.79	8.70

Differences of D.O. Content between Winkler Titration and D.O. meter should be less than 0.2 mg/L.

Certified by   
Approved Signatory : HO Kin Man, John  
Assistant General Manager – Laboratories  
Date : 13/3/2023

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.





Report No. : 142626WA230201(1)

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**Results :**

**D. Temperature calibration**

Thermometer reading, °C	Meter reading, °C
25.1	25.6

**E. Turbidity calibration**

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
4	4.12	+0.12	± 0.6
8	8.32	+0.32	± 0.8
40	41.41	+1.41	± 3.0
80	80.11	+0.11	± 4.0

Certified by :   
Approved Signatory : HO Kin Man, John  
Assistant General Manager – Laboratories

Date : 13/3/2015  
\*\* End of Report \*\*

*Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.*

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## Appendix G Environmental Monitoring Schedule

### Tentative Impact Monitoring Schedule (March 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 W	3	4 W
5	6	7 W & N	8	9 W	10	11 W
12	13	14 W & N	15	16 W	17	18 W
19	20	21 W & N	22	23 W	24	25 W
26	27	28 W & N	29	30 W	31	

### Tentative Impact Monitoring Schedule (April 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 W
2	3	4 W & N	5	6 W	7	8 W
9	10	11 W & N	12	13 W	14	15 W
16	17	18 W & N	19	20 W	21	22 W
23/30	24	25 W & N	26	27 W	28	29 W

### Tentative Impact Monitoring Schedule (May 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 W & N	3	4 W	5	6 W
7	8	9 W & N	10	11 W	12	13 W
14	15	16 W & N	17	18 W	19	20 W
21	22	23 W & N	24	25 W	26	27 W
28	29	30 W & N	31			

### Tentative Impact Monitoring Schedule (June 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 W	2	3 W
4	5	6 W & N	7	8 W	9	10 W
11	12	13 W & N	14	15 W	16	17 W
18	19 W & N	20	21 W	22	23 W	24
25	26	27 W & N	28	29 W	30	

#### Remarks

1. W: Impact Water Quality Monitoring.
2. N: Impact Noise Monitoring.
3. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition, etc.

## Appendix H1 Noise Monitoring Data and Graphical Presentations

Monitoring Location : NSR1 Columbarium of Po Lin Monastery						
Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (in dB(A))		
				Leq <sub>(30 min)</sub>	L90 <sub>(30 min)</sub>	L10 <sub>(30 min)</sub>
07-03-2023	Fine	0.5	10:46	66.1	63.5	68.5
14-03-2023	Cloudy	0.3	9:58	65.3	62.5	67.0
21-03-2023	Cloudy	0.4	11:43	60.9	57.0	61.0
28-03-2023	Cloudy	0.3	11:54	52.7	49.5	54.0

Monitoring Location : NSR5 Village House No. 49A						
Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (in dB(A))		
				Leq <sub>(30 min)</sub>	L90 <sub>(30 min)</sub>	L10 <sub>(30 min)</sub>
07-03-2023	Fine	0.2	9:59	53.4	49.0	56.5
14-03-2023	Cloudy	0.2	11:22	53.8	48.5	56.5
21-03-2023	Cloudy	0.3	10:03	62.7	59.0	66.5
28-03-2023	Cloudy	0.4	10:02	58.0	51.0	59.5

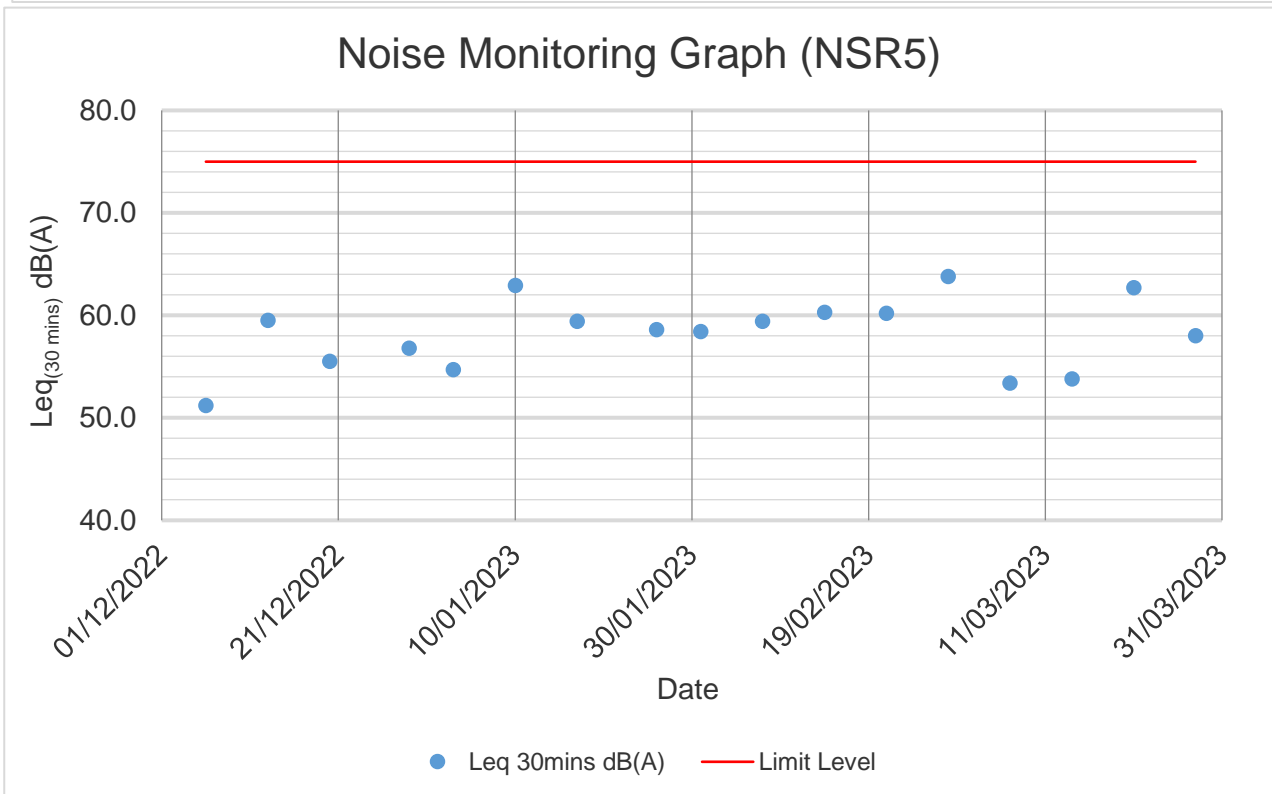
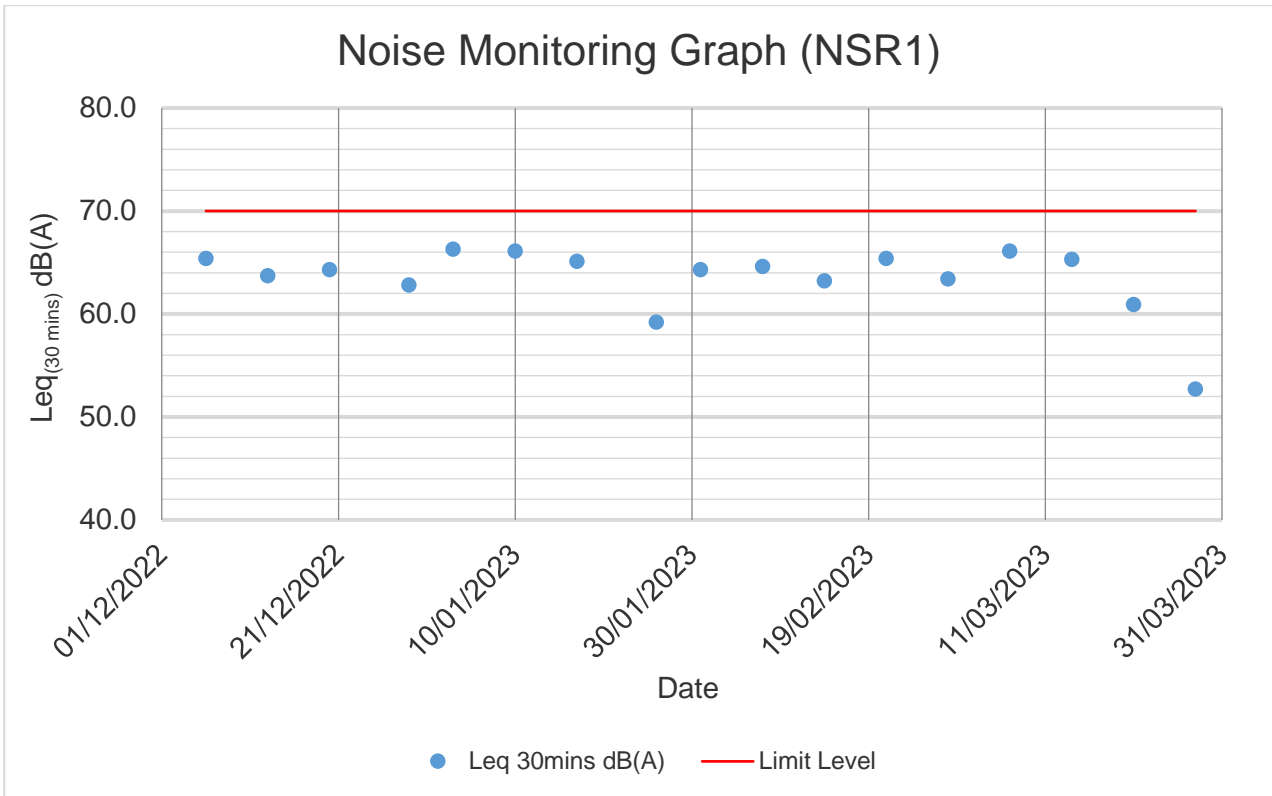
Monitoring Location : NSR8 Village House No. 34						
Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (in dB(A))		
				Leq <sub>(30 min)</sub>	L90 <sub>(30 min)</sub>	L10 <sub>(30 min)</sub>
07-03-2023	Fine	0.2	9:22	54.2	44.5	56.0
14-03-2023	Cloudy	0.1	10:35	55.4	45.0	58.0
21-03-2023	Cloudy	0.2	9:03	52.6	47.0	54.5
28-03-2023	Cloudy	0.4	9:03	54.3	47.5	52.5

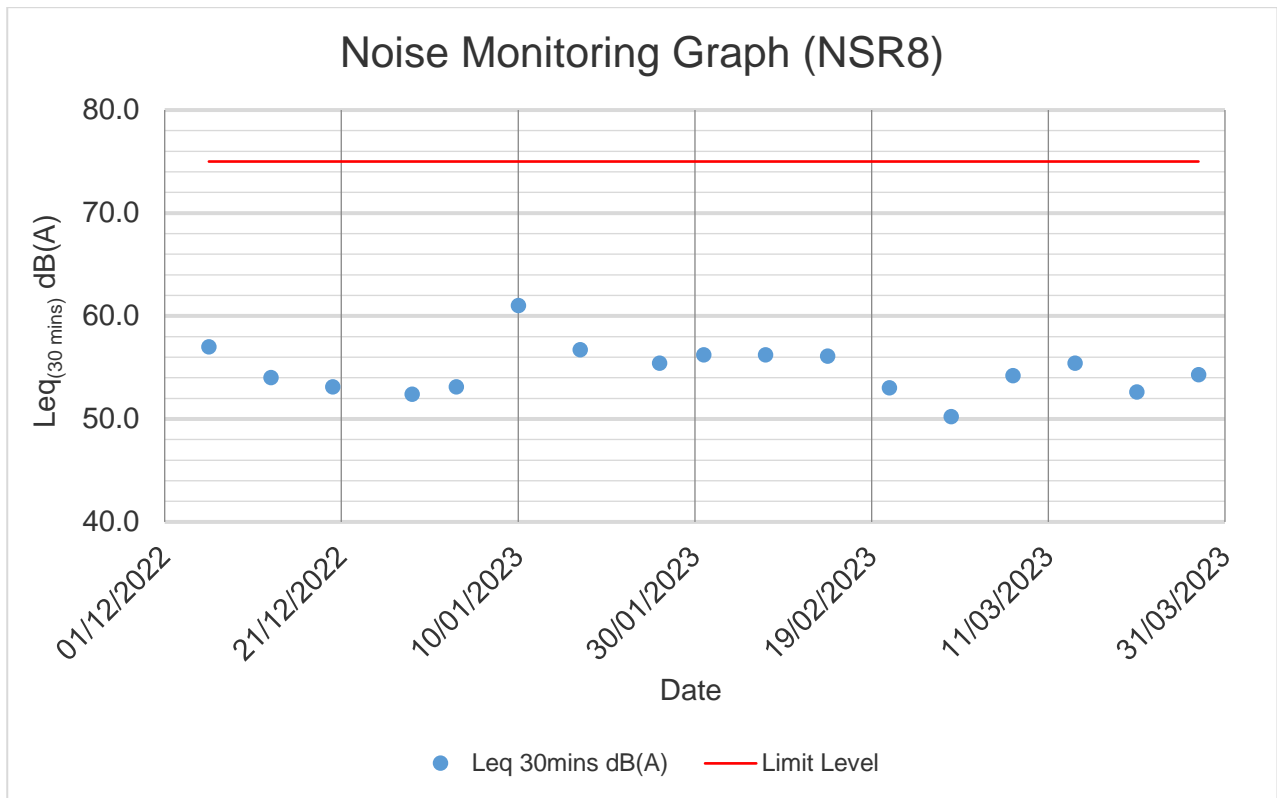
	Noise Monitoring (in dB(A))	
	Min	Max
	Leq <sub>(30 min)</sub>	Leq <sub>(30 min)</sub>
NSR1	52.7	66.1
NSR5	53.4	62.7
NSR8	52.6	55.4

### Remarks:

1) NSR1 & NSR5 noise results were calculated by +3 dB (A) correction for free-field measurement.







Note:

- 1) Major activities being carried out on site during the reporting period refer to section 1.4.
- 2) The other factors influencing the monitoring results refer to section 5.5.3.
- 3) The QA/QC procedures and detection Limits refer to section 5.1 and 5.2.

## **Appendix H2 Water Quality Monitoring Data and Graphical Presentations**

### Monitoring Results Summary

Parameter(s)	DO in mg/L				Turbidity in NTU				pH				Suspended Solids in mg/L			
	Min	-	Max	( Mean )	Min	-	Max	( Mean )	Min	-	Max	( Mean )	Min	-	Max	( Mean )
Station(s)																
WS1-R1																
WS1-I1	8.17	-	8.52	( 8.35 )	1.30	-	2.70	( 2.00 )	7.50	-	7.90	( 7.70 )	3.00	-	3.00	( 3.00 )
WS1-R2	7.45	-	9.14	( 8.16 )	0.17	-	1.63	( 0.80 )	6.30	-	7.10	( 6.79 )	1.00	-	6.50	( 2.38 )
WS1-I2																
WS4-R3																
WS4-I3																
WS5-R4																
WS5-I4																
WS6-R5																
WS6-I5																
WS6-C1	3.30	-	7.00	( 5.32 )	0.50	-	3.40	( 1.96 )	6.20	-	7.10	( 6.69 )	1.00	-	5.00	( 1.90 )
WS6-R6	6.70	-	6.70	( 6.70 )	2.30	-	2.30	( 2.30 )	6.90	-	6.90	( 6.90 )	3.50	-	3.50	( 3.50 )
WS6-I6	6.60	-	6.60	( 6.60 )	2.20	-	2.20	( 2.20 )	6.60	-	6.60	( 6.60 )	42.00	-	42.00	( 42.00 )

### Laboratory Duplicate, Quality Assurance/Quality Control Summary extract form Lab test report

Sampling Date	Total suspended solids dried at 103°C – 105°C					
	Detection Limit	Blank	Spike recovery (%)	Original result	Duplicate result	RPD%
02/03/2023	1mg/L	<1	100.20	1.06	0.98	7.84
04/03/2023	1mg/L	<1	97.10	1.02	1.18	14.55
07/03/2023	1mg/L	<1	98.95	0.34	0.36	5.71
09/03/2023	1mg/L	<1	103.3	0.96	0.84	13.33
11/03/2023	1mg/L	<1	99.35	2.26	2.04	10.23
14/03/2023	1mg/L	<1	99.33	6.20	6.55	5.49
16/03/2023	1mg/L	<1	98.78	2.44	2.53	3.62
18/03/2023	1mg/L	<1	97.72	1.18	1.25	5.76
21/03/2023	1mg/L	<1	97.45	5.33	4.63	14.05
23/03/2023	1mg/L	<1	100.45	2.65	2.80	5.50
25/03/2023	1mg/L	<1	100.65	2.70	2.65	1.87
28/03/2023	1mg/L	<1	98.30	22.08	21.20	4.07
30/03/2023	1mg/L	<1	101.4	0.74	0.7	5.56

**Parameter Exceedance Summary**

Monitoring Date	Monitoring Location	Exceedance Parameter	Monitoring Results	Action Level(AL)	Limit Level(LL)	Project-related?
--	--	--	--	--	--	--

**Monitoring Location Dried up Summary**

Date / Location	WS1-R1	WS1-I1	WS1-R2	WS1-I2	WS4-R3	WS4-I3	WS5-R4	WS5-I4	WS6-R5	WS6-I5	WS6-C1	WS6-R6	WS6-I6
2 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
4 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
7 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
9 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
11 Mar 2023	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
14 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up
16 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up
18 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up
21 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
23 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
25 Mar 2023	Dried Up	Dried Up		Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up
28 Mar 2023	Dried Up			Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up			
30 Mar 2023	Dried Up			Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up	Dried Up		Dried Up	Dried Up

Note:

- 1) Major activities being carried out on site during the reporting period refer to section 1.4.
- 2) The other factors influencing the monitoring results refer to section 5.5.4.
- 3) The QA/QC procedures and detection Limits refer to section 5.1 and 5.2.





Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks			
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L					
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.				
WS1-R1	04-03-23	Fine	9:36	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
					2	NA																	
WS1-I1			9:51	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA																	
WS1-R2			10:07	18	1	6.83	6.8	0.02	0.02	16.41	16.4	88.2	88.4	7.74	7.76	1.62	1.64	1.6	1	1	1.0	NA	
					2	6.84																	
WS1-I2			10:22	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS4-R3			10:37	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS4-I3			10:52	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS5-R4			11:52	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS5-I4			12:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS6-R5			12:23	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS6-I5			12:38	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS6-C1	11:07	18	1	6.94	7.0	0.05	0.05	16.63	16.6	79.7	79.0	6.95	6.98	1.74	1.75	1.7	1	1	1.0	NA			
			2	6.96																			
WS6-R6	11:22	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																			
WS6-I6	11:37	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																			

- Note: 1. ND: Not Detected  
 2. NA: Not Applicable  
 3. TBC: To Be Confirm  
 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level



Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks						
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L								
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.							
WS1-R1	07-03-23	Fine	9:21	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
					2	NA																		NA	NA	NA
WS1-I1			9:34	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
					2	NA																				NA
WS1-R2			9:49	16	1	6.77	6.8	0.02	0.02	15.14	15.1	90.8	90.9	9.13	9.14	1.38	1.4	3	3	3.0	3.0	3.0	3.0	3.0	3.0	3.0
					2	6.85																				
WS1-I2			10:05	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS4-R3			10:16	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS4-I3			10:29	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS5-R4			10:40	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS5-I4			10:57	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-R5			11:14	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-I5			11:26	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-C1	11:38	15	1	7.10	7.1	0.08	0.08	16.47	15.5	62.1	62.3	6.06	6.08	0.94	1.0	<1	<1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	NA	
			2	7.12																						0.08
WS6-R6	11:51	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			2	NA																					NA	NA
WS6-I6	12:06	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			2	NA																					NA	NA

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 3. TBC: To Be Confirm  
 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level







Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks			
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L					
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.				
WS1-R1	14-03-23	Cloudy	11:16	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
					2	NA																NA	NA
WS1-I1			11:32	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA																	NA
WS1-R2			11:41	15	1	6.65	6.7	0.02	0.02	17.74	17.7	87.6	87.5	8.33	8.32	0.47	0.5	7	6.5	6.5	NA	NA	
					2	6.65		0.02		17.75		87.3		8.31		0.45		6					
WS1-I2			11:54	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA		NA		NA		NA		NA		NA		NA			
WS4-R3			12:09	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA		NA		NA		NA		NA		NA		NA			
WS4-I3			12:23	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA		NA		NA		NA		NA		NA		NA			
WS5-R4			12:34	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA		NA		NA		NA		NA		NA		NA			
WS5-I4			12:49	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA		NA		NA		NA		NA		NA		NA			
WS6-R5	13:06	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA		NA		NA		NA		NA		NA		NA				NA	
WS6-I5	13:22	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA		NA		NA		NA		NA		NA		NA				NA	
WS6-C1	13:35	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA		NA		NA		NA		NA		NA		NA				NA	
WS6-R6	13:48	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA		NA		NA		NA		NA		NA		NA				NA	
WS6-I6	14:01	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA		NA		NA		NA		NA		NA		NA				NA	

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 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level









Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks						
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L								
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.							
WS1-R1	21-03-23	Cloudy	9:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
					2	NA																				
WS1-I1			9:23	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
					2	NA																				
WS1-R2			9:36	17	1	7.07	7.1	0.02	0.02	19.39	19.4	83.4	83.3	7.67	7.67	0.65	0.6	1	1	1.0	NA	NA	NA	NA	NA	NA
					2	7.04																				
WS1-I2			9:51	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS4-R3			10:34	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS4-I3			10:50	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS5-R4			10:06	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS5-I4			10:20	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-R5			11:02	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-I5			11:17	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					2	NA																				
WS6-C1	11:33	16	1	6.88	6.9	0.15	0.17	21.00	21.0	50.2	49.8	4.47	4.42	2.18	2.2	5	5	5.0	NA	NA	NA	NA	NA	NA	NA	
			2	6.85																						
WS6-R6	11:48	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			2	NA																						
WS6-I6	12:01	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
			2	NA																						

- Note: 1. ND: Not Detected  
 2. NA: Not Applicable  
 3. TBC: To Be Confirm  
 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level



Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks			
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L					
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.		Value	Ave.	
WS1-R1	23-03-23	Cloudy	9:11	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
					2	NA																NA	NA
WS1-I1			9:23	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA																	NA
WS1-R2			9:37	16	1	6.28	6.3	0.02	0.02	20.83	20.8	83.7	83.5	7.47	7.45	0.21	0.2	2	2	2.0	2.0	NA	
					2	6.27																	0.02
WS1-I2			9:50	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS4-R3			10:06	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS4-I3			10:21	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS5-R4			10:36	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS5-I4			10:51	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																	
WS6-R5	11:03	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																		NA	NA
WS6-I5	11:17	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																		NA	NA
WS6-C1	11:31	15	1	6.61	6.6	0.13	0.13	21.37	21.4	37.2	37.1	3.28	3.27	2.90	2.9	3	3	3.0	3.0	NA			
			2	6.62																	0.13	21.36	37.0
WS6-R6	11:44	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																		NA	NA
WS6-I6	11:58	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																		NA	NA

- Note: 1. ND: Not Detected  
 2. NA: Not Applicable  
 3. TBC: To Be Confirm  
 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level



Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks		
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L				
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.		Value	Ave.
WS1-R1	25-03-23	Cloudy	9:42	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA																NA
WS1-I1			9:58	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS1-R2			10:10	18	1	6.71	6.7	0.02	0.02	20.74	20.7	83.4	83.2	7.46	7.46	0.18	0.2	2	2	2.0	NA	
					2	6.72																0.02
WS1-I2			10:23	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS4-R3			10:36	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS4-I3			10:50	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS5-R4			11:02	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS5-I4			11:14	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS6-R5			11:29	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA																
WS6-I5	11:43	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																	NA	NA
WS6-C1	11:56	17	1	6.77	6.8	0.13	0.13	21.22	21.2	46.5	45.9	4.11	4.07	3.22	3.2	3	3	3.0	NA			
			2	6.76																0.13	21.23	45.3
WS6-R6	12:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																	NA	NA
WS6-I6	12:20	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA																	NA	NA

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 4. Yellow Highlight equal to exceed Action Level  
 5. Red Highlight equal to exceed Limit Level



Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks	
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L			
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.		
WS1-R1	28-03-23	Cloudy	9:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
WS1-I1			9:23	15	1	7.84	7.9	0.02	0.03	16.86	16.9	88.00	88.0	8.53	8.52	2.71	2.7	3	3.0	NA	
					2	7.86		0.03	16.87	87.90	8.51	2.67	3								
WS1-R2			9:36	18	1	6.92	6.9	0.02	0.02	16.89	16.9	87.5	87.5	8.47	8.46	1.50	1.5	5	4.5	NA	
					2	6.93		0.02	16.91	87.4	8.44	4									
WS1-I2			9:54	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS4-R3			10:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS4-I3			10:24	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS5-R4			10:40	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS5-I4			10:55	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS6-R5			11:10	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS6-I5			11:26	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS6-C1	11:41	17	1	6.60	6.6	0.07	0.07	16.99	17.0	47.2	46.9	4.54	4.51	3.40	3.4	1	1.0	NA			
			2	6.61		0.07	17.01	46.5	4.48	3.42	1										
WS6-R6	11:56	16	1	6.89	6.9	0.06	0.06	17.12	17.1	67.30	67.5	6.69	6.71	2.31	2.3	3	3.5	NA			
			2	6.91		0.06	17.16	67.70	6.72	2.37	4										
WS6-I6	12:09	17	1	6.61	6.6	0.07	0.07	17.13	17.1	66.20	66.4	6.61	6.62	2.27	2.2	41	42.0	NA			
			2	6.59		0.07	17.14	66.60	6.63	2.18	43										

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 5. Red Highlight equal to exceed Limit Level



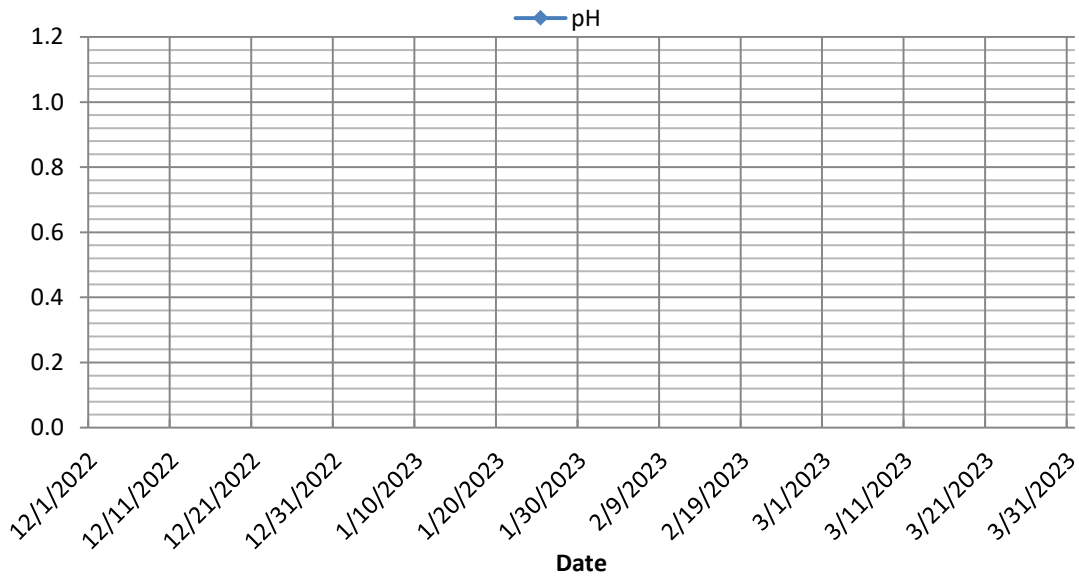
Water Quality Monitoring Results

Monitoring Location	Date	Weather	Time	Water Depth (cm)	Replicate	In-situ Measurement												Laboratory Analysis		Remarks	
						pH		Salinity (ppt)		Temperature (°C)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspended solids dried at 103 - 105 (°C), mg/L			
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.		Value
WS1-R1	30-03-23	Cloudy	10:07	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff	
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS1-I1			10:23	15	1	7.47	7.5	0.02	0.02	18.28	18.3	87.10	86.9	8.20	8.17	1.27	1.3	3	3.0	NA	
					2	7.48		0.02	0.02	18.29	18.3	86.70	86.9	8.14	8.17	1.33	1.3	3	3.0		
WS1-R2			10:35	17	1	6.82	6.8	0.02	0.03	18.27	18.3	86.4	86.2	8.13	8.12	0.74	0.8	3	3.0	NA	
					2	6.83		0.03	0.03	18.26	18.3	86.0	86.2	8.10	8.12	0.78	0.8	3	3.0		
WS1-I2			10:51	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS4-R3			11:02	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS4-I3			11:14	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS5-R4			11:30	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS5-I4			11:46	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS6-R5			12:00	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS6-I5			12:14	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff
					2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WS6-C1	12:29	16	1	6.21	6.2	0.09	0.09	19.10	19.1	45.2	45.1	4.18	4.16	0.92	1.0	<1	1.0	NA			
			2	6.21		0.09	0.09	19.11	19.1	44.9	45.1	4.14	4.16	1.03	1.0	<1	1.0				
WS6-R6	12:41	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
WS6-I6	12:56	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lack of Surface Runoff		
			2	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			

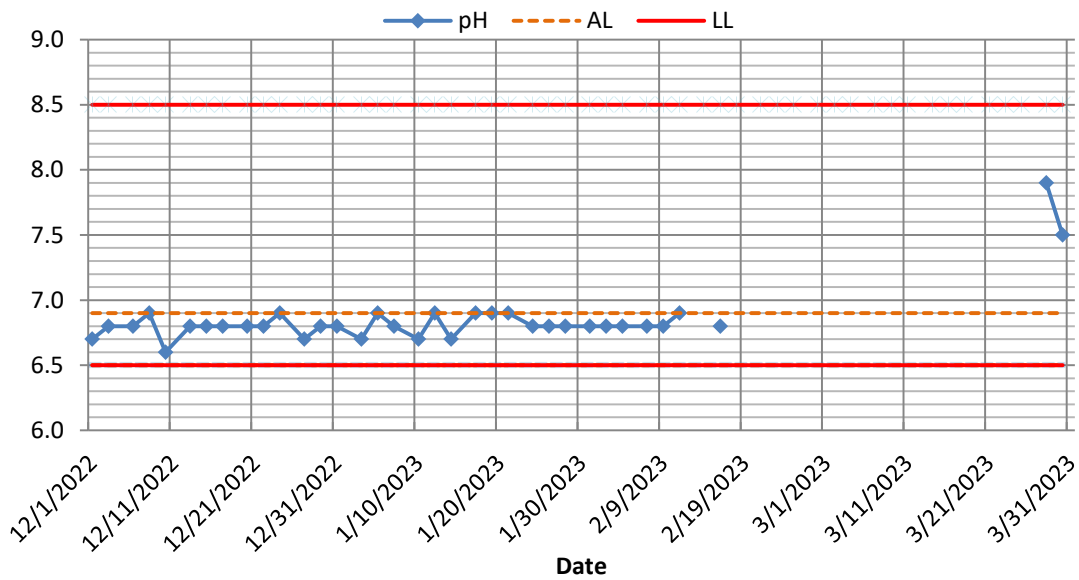
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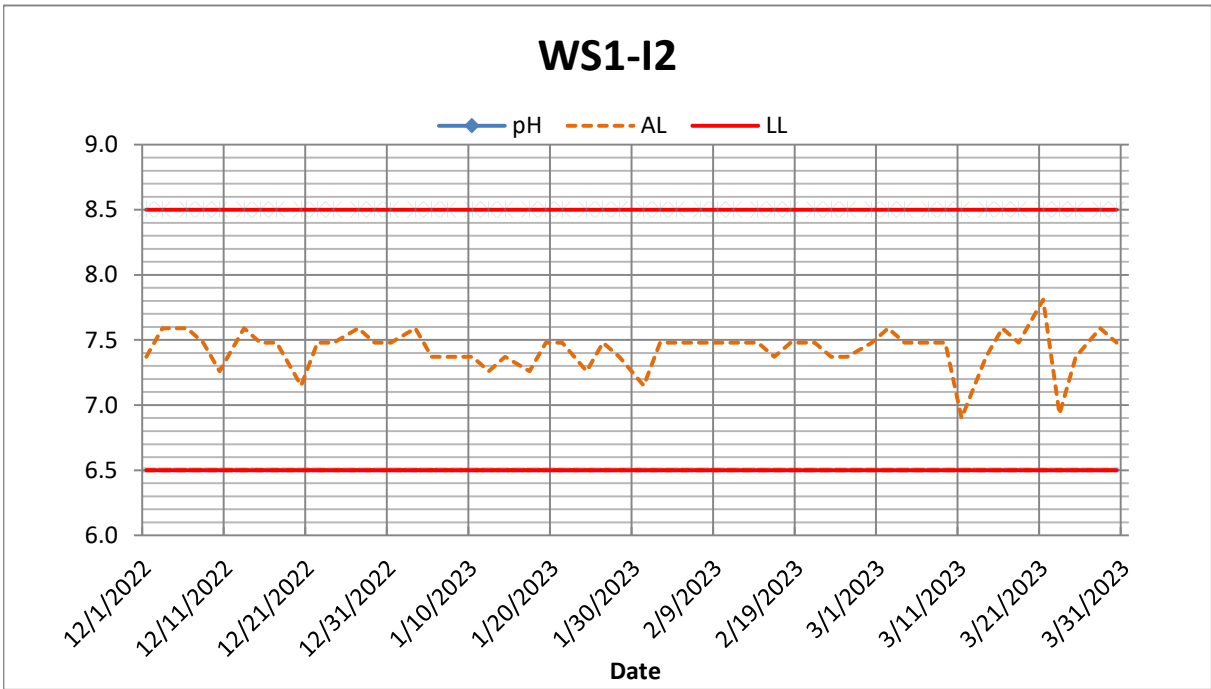
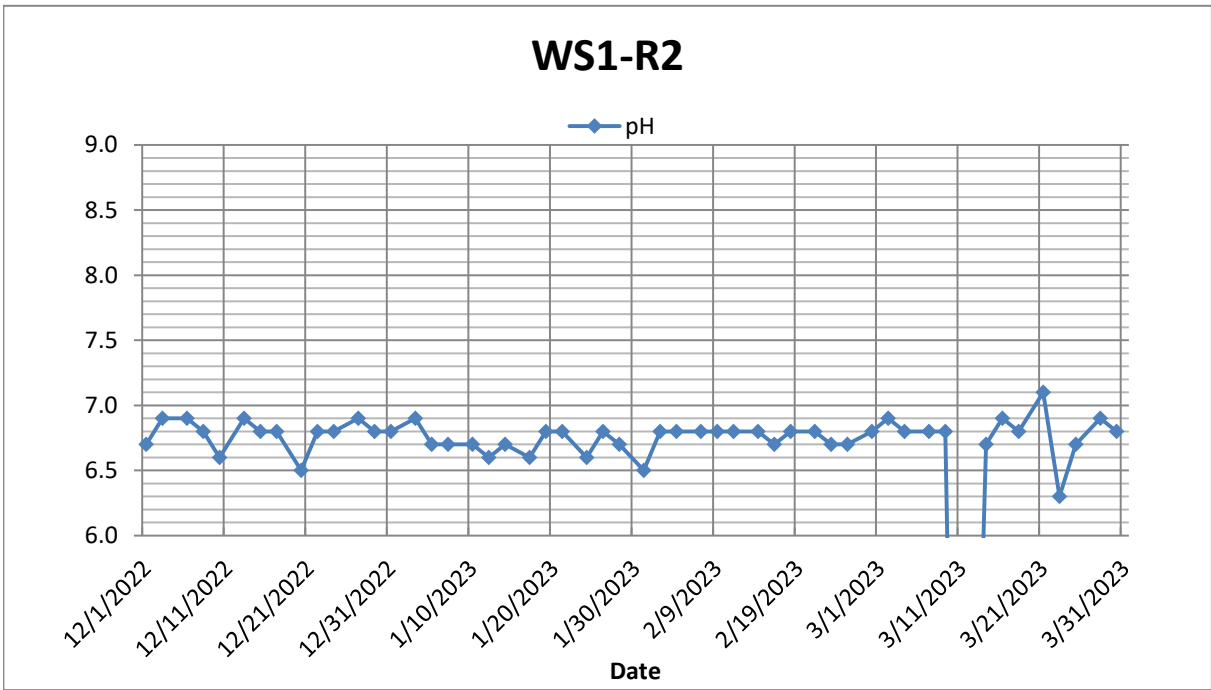
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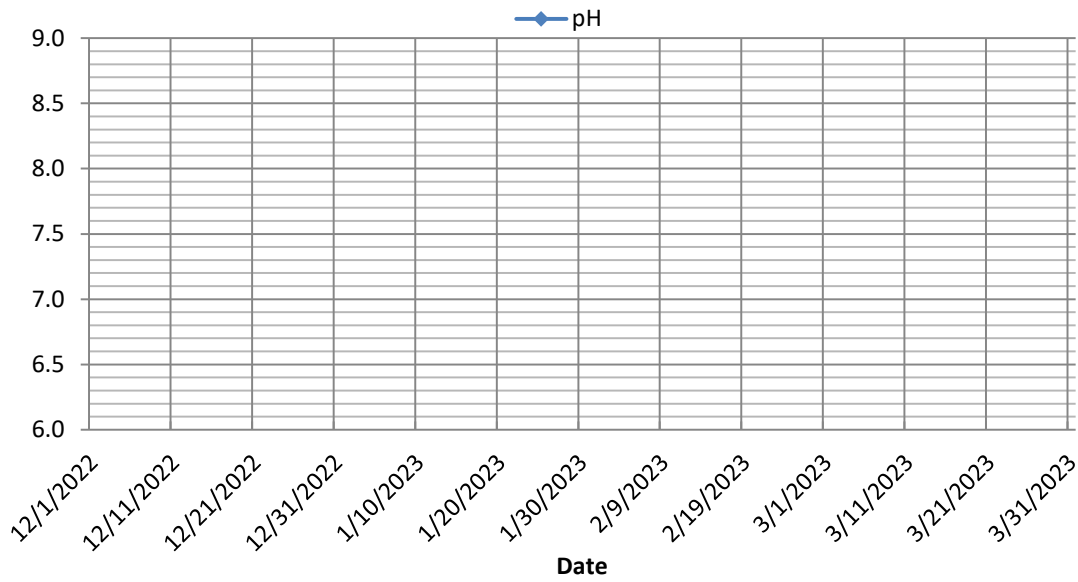
### WS1-I1



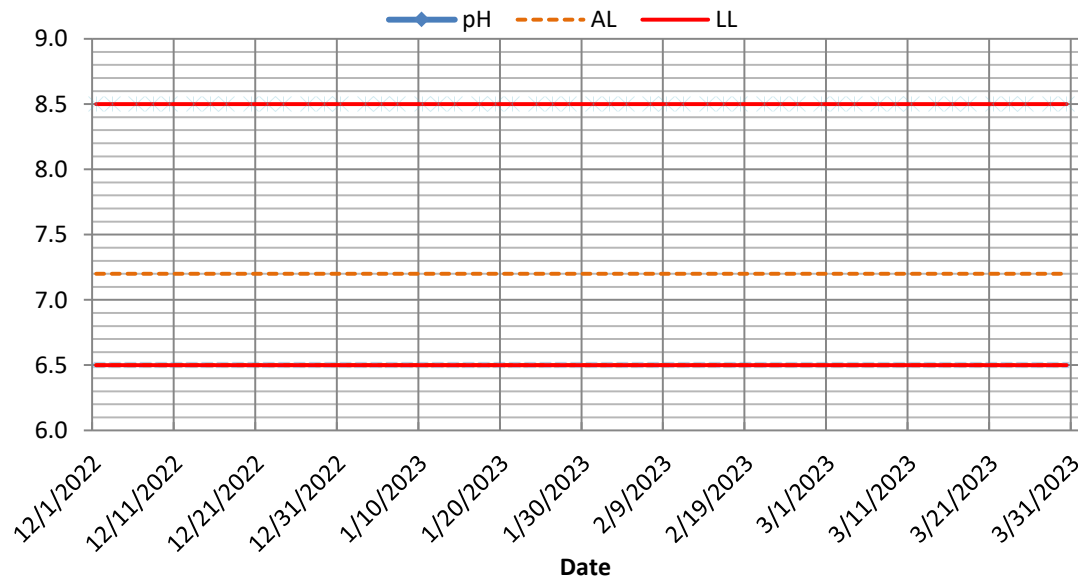




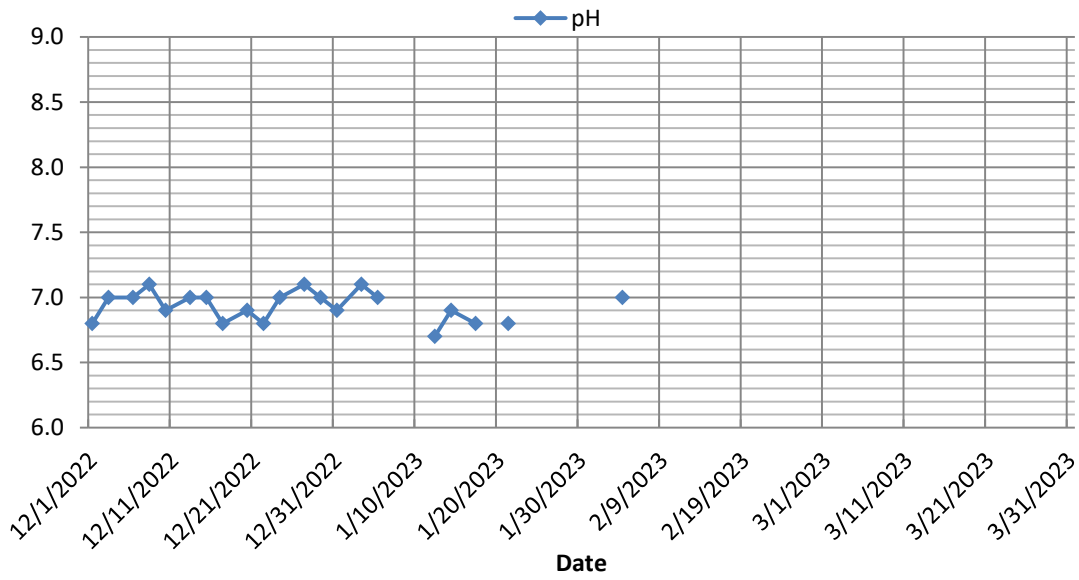
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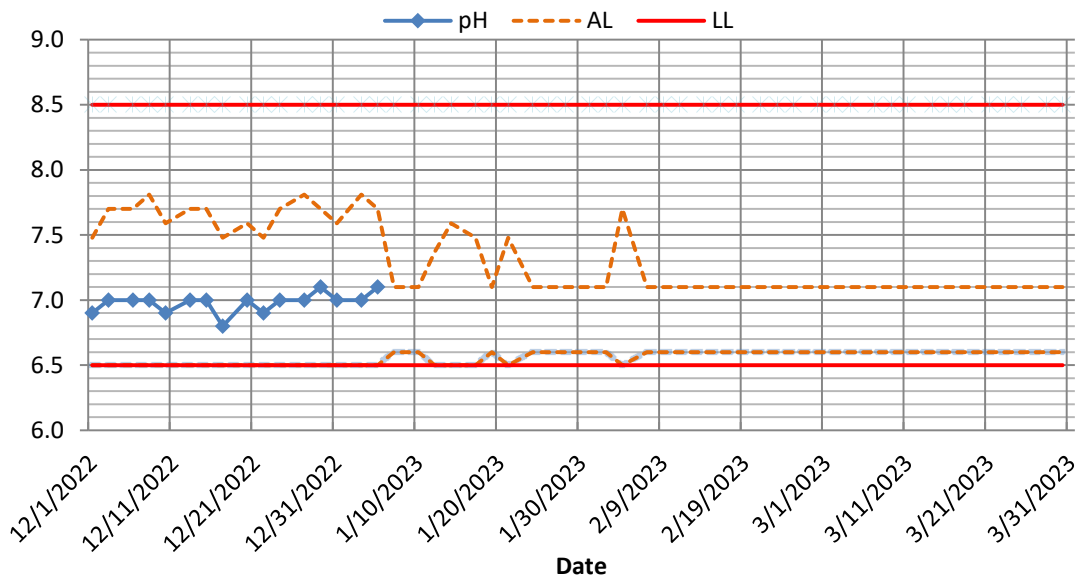
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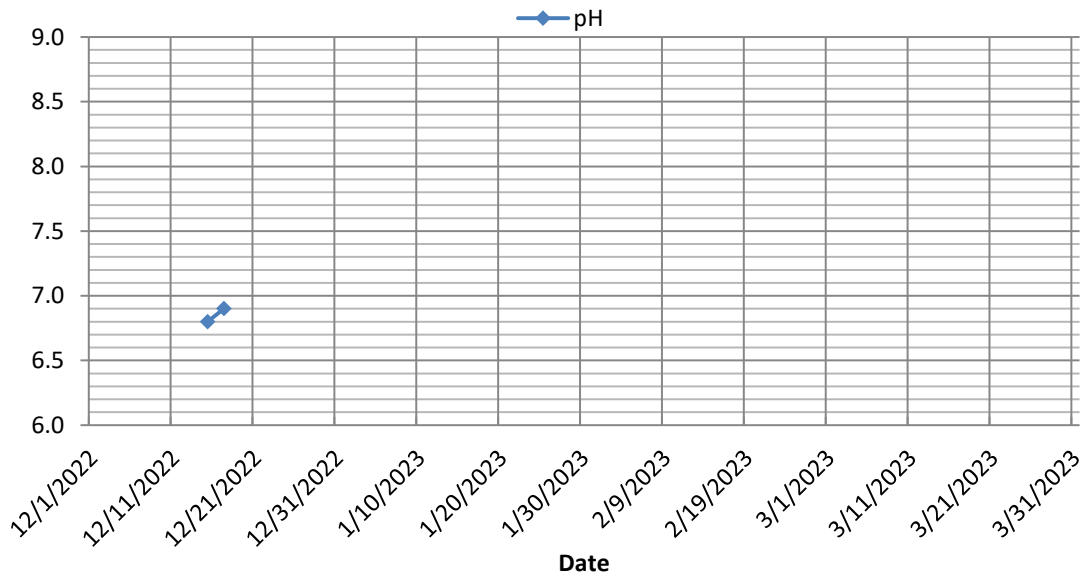
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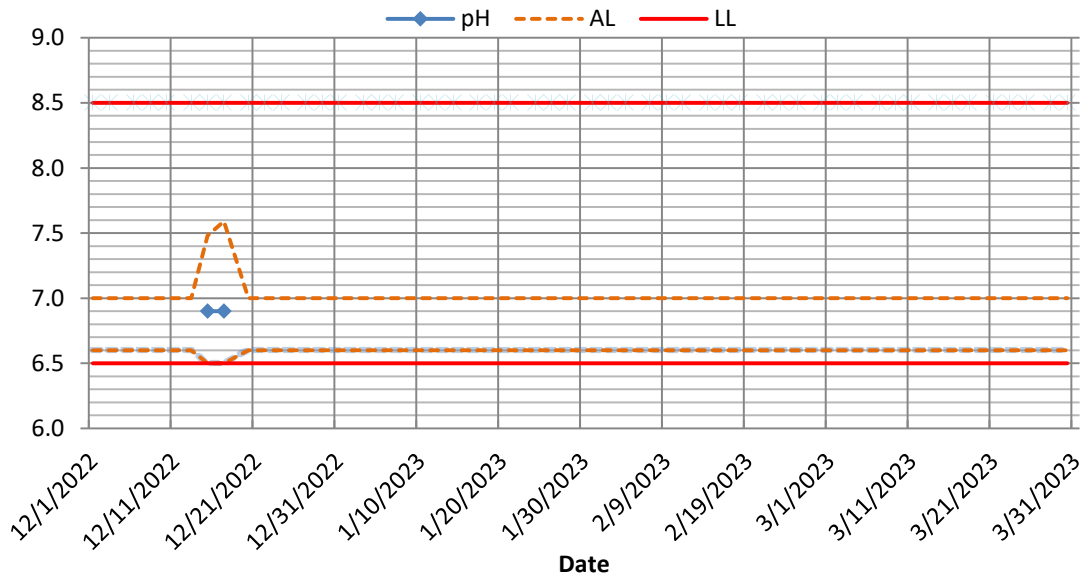
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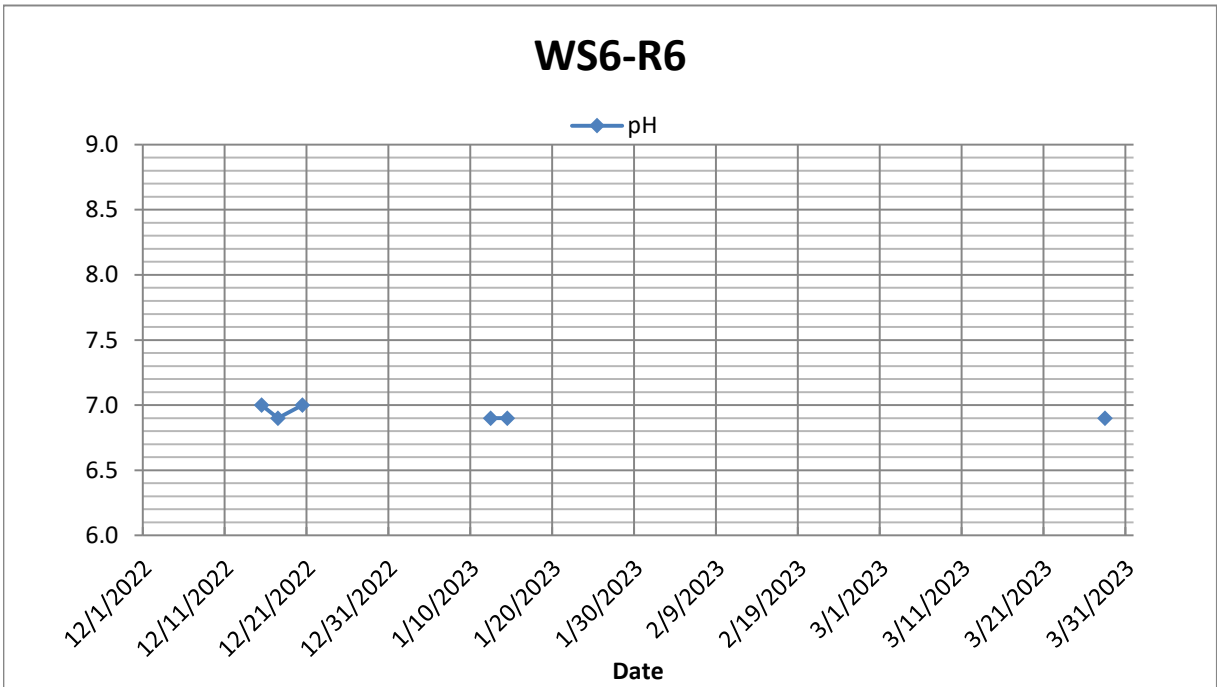
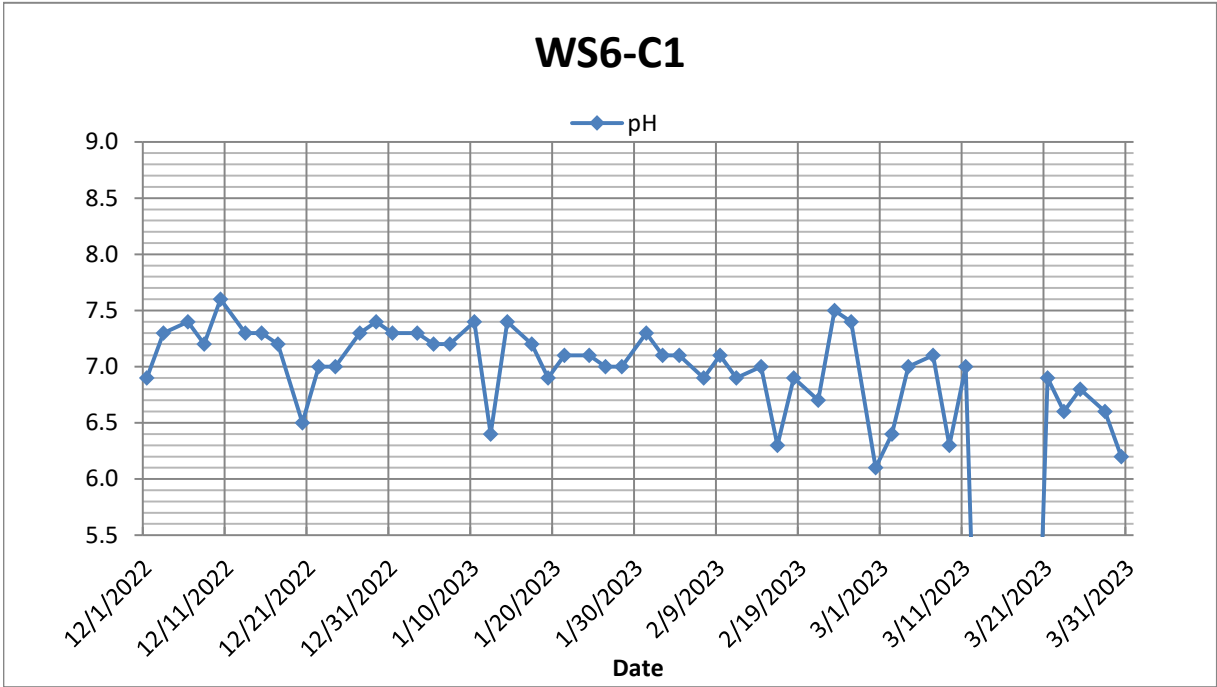


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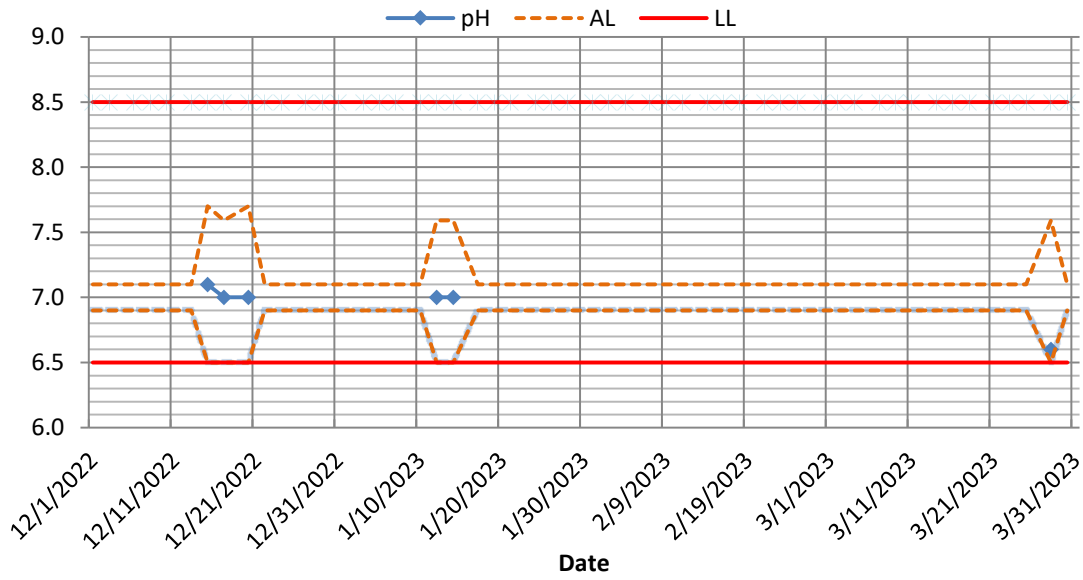


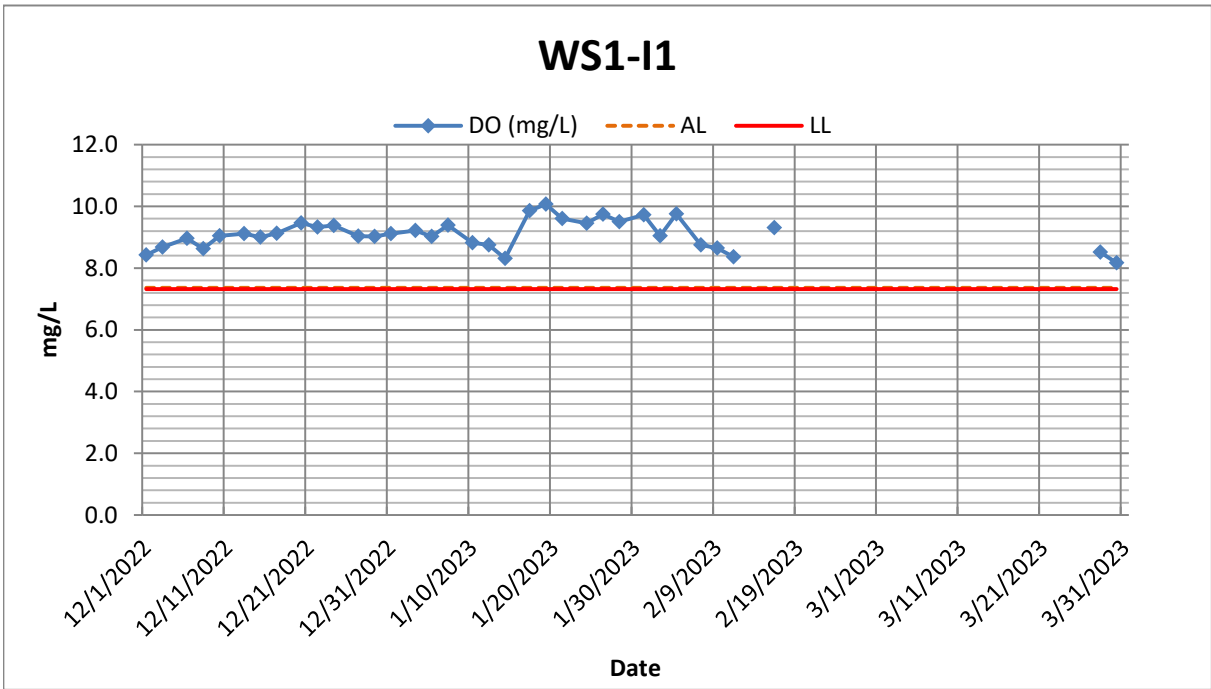
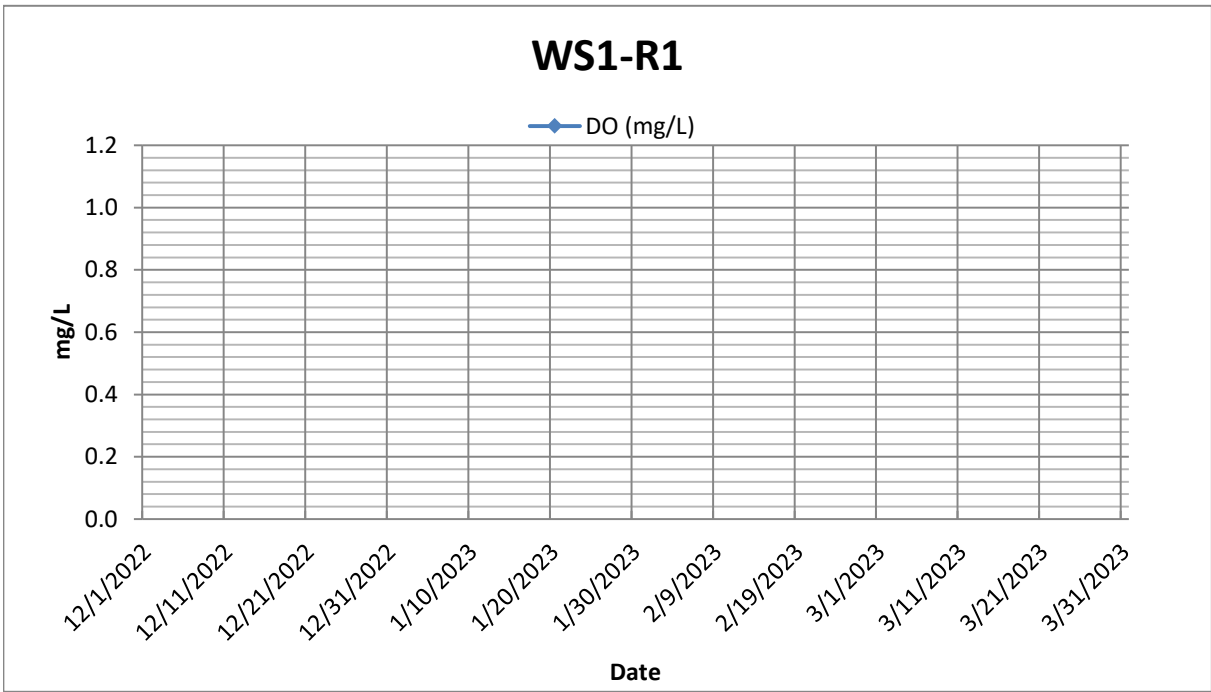
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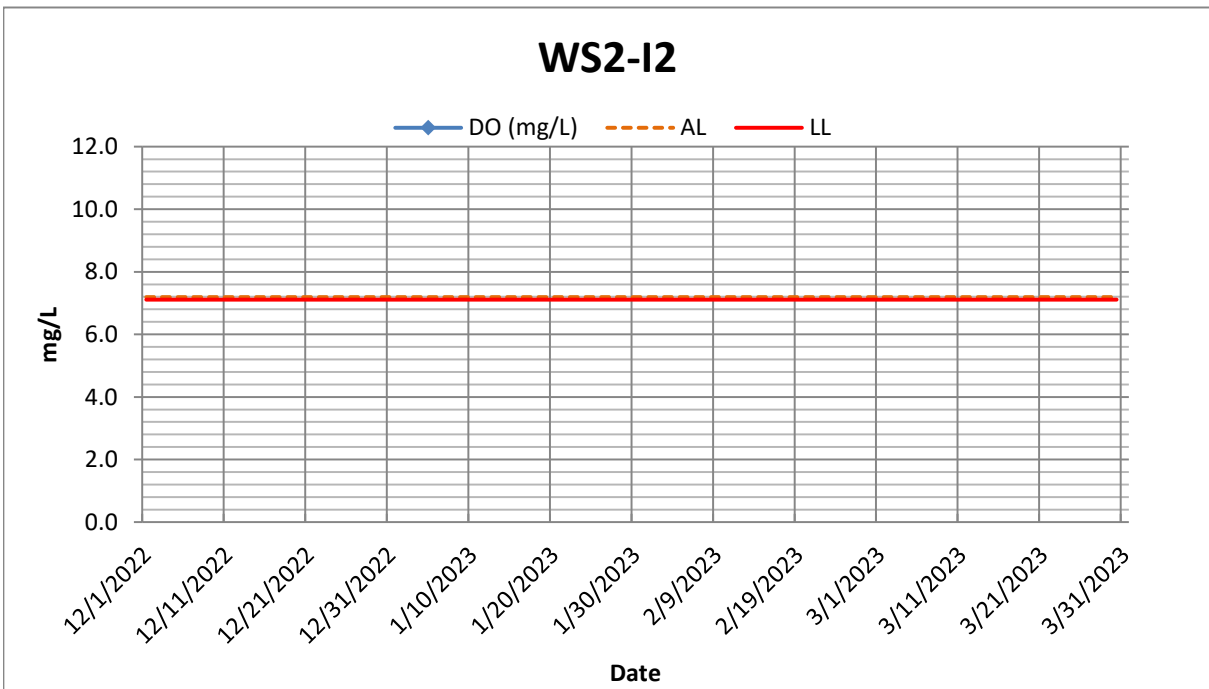
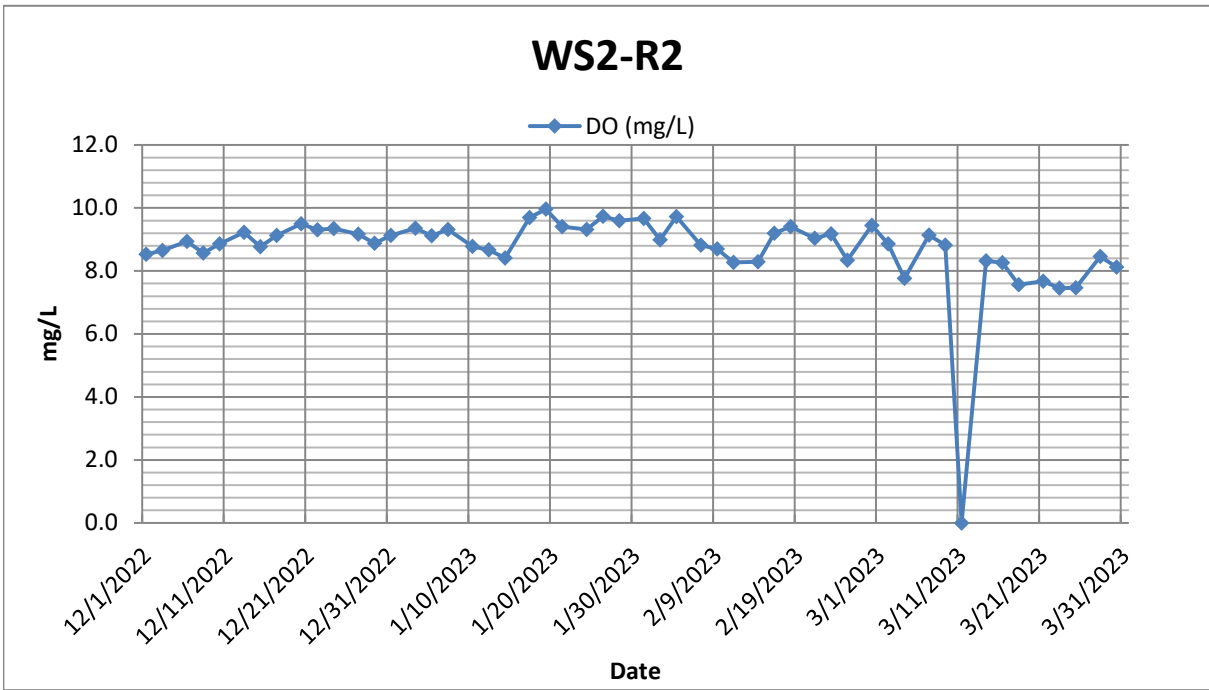


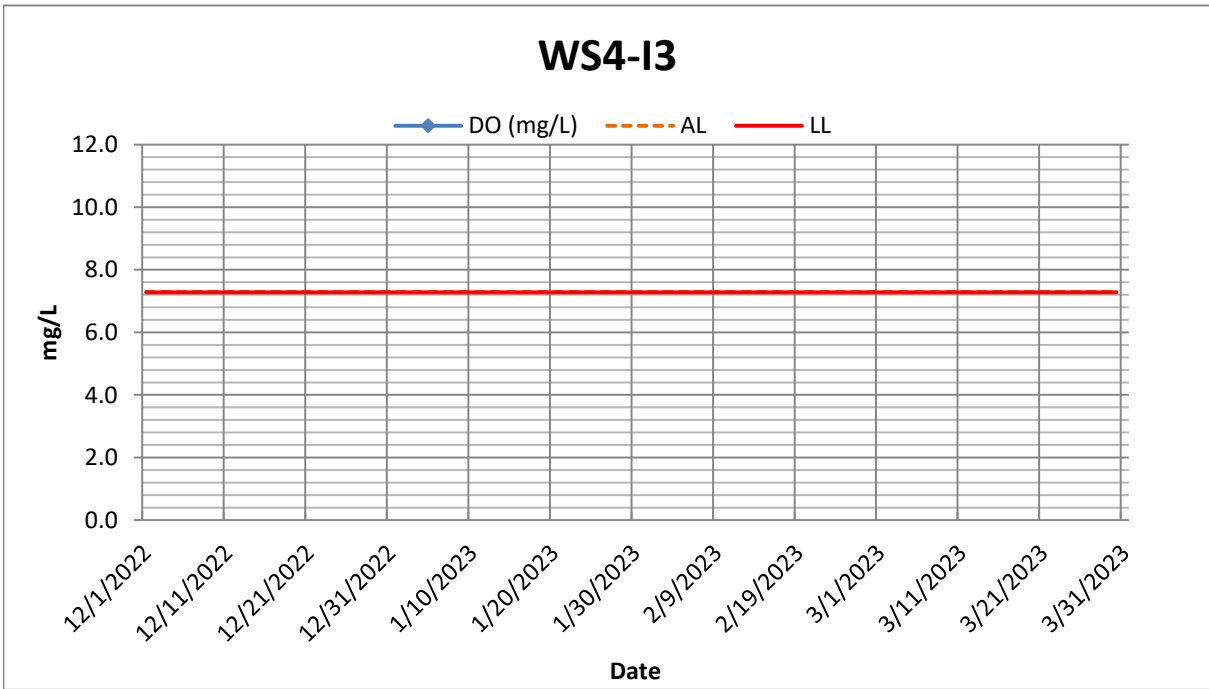
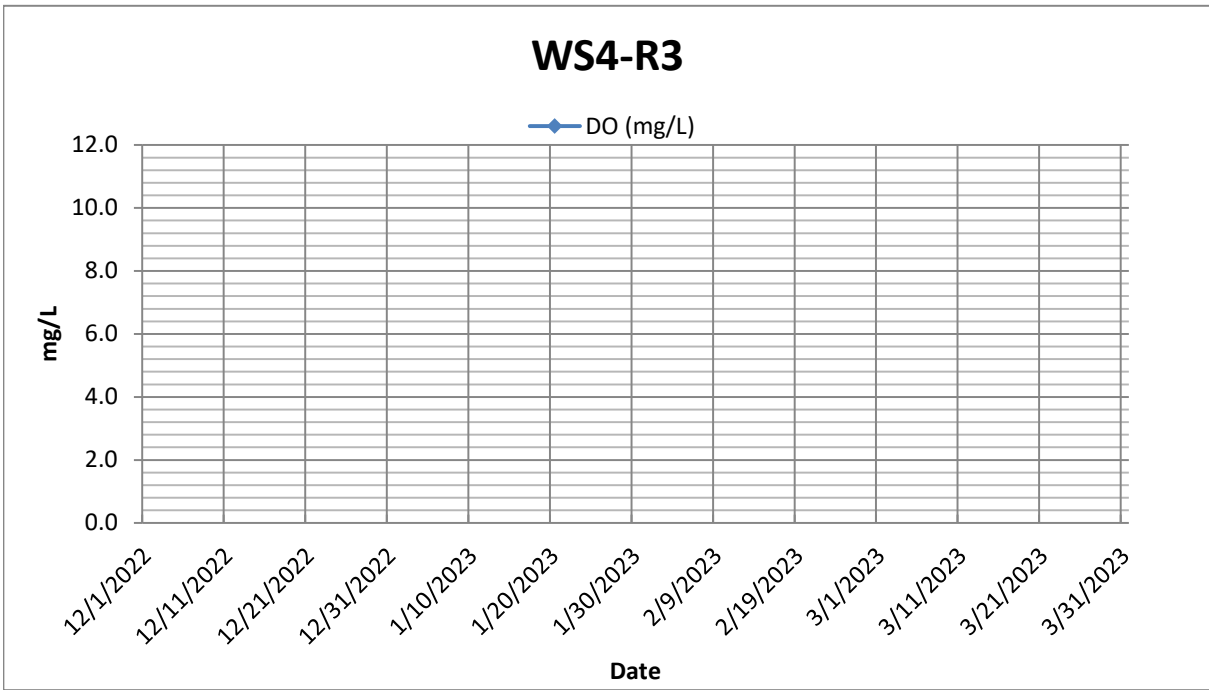
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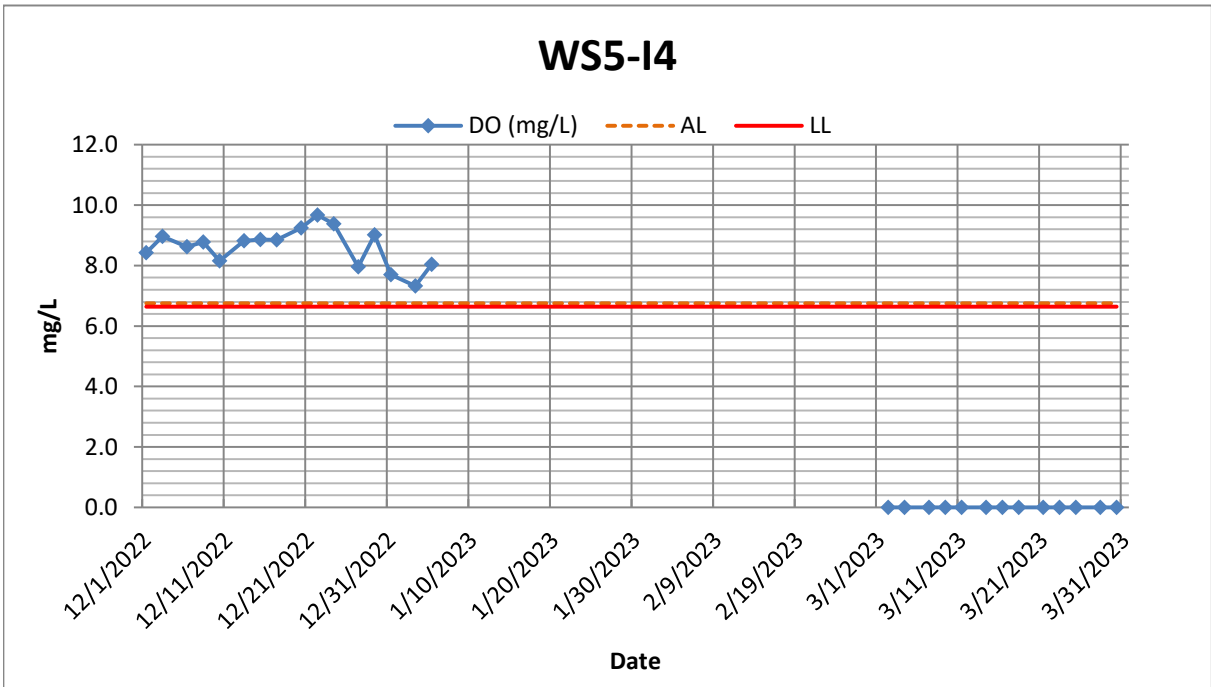
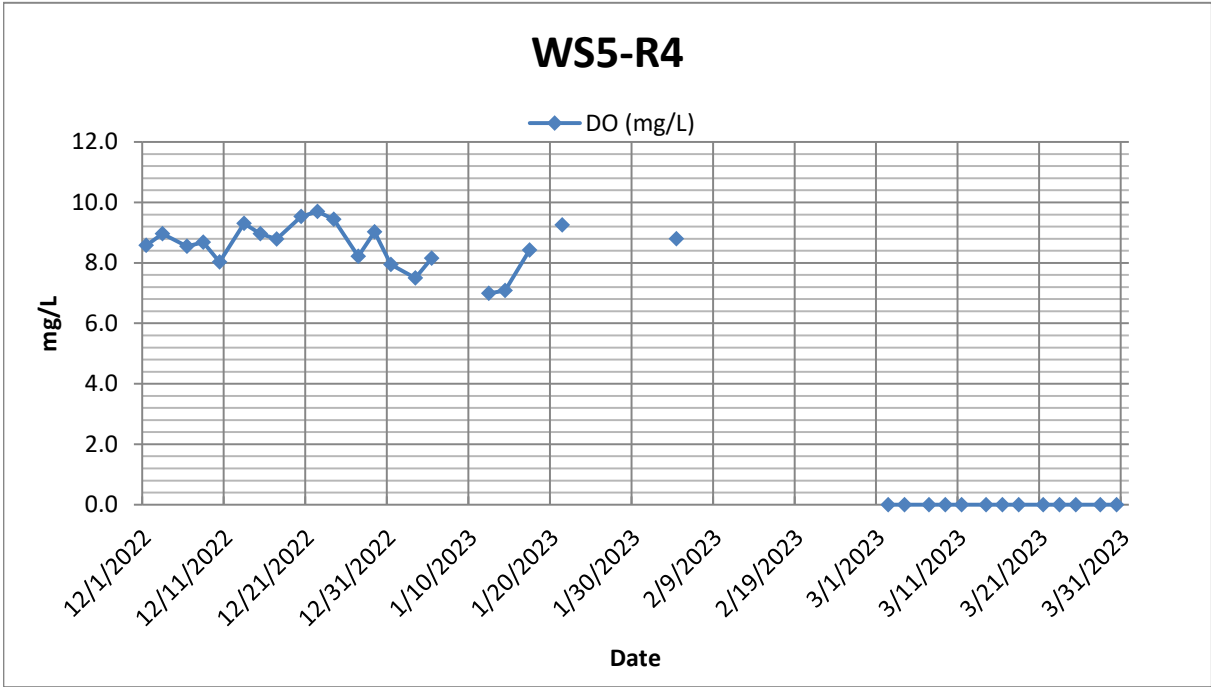


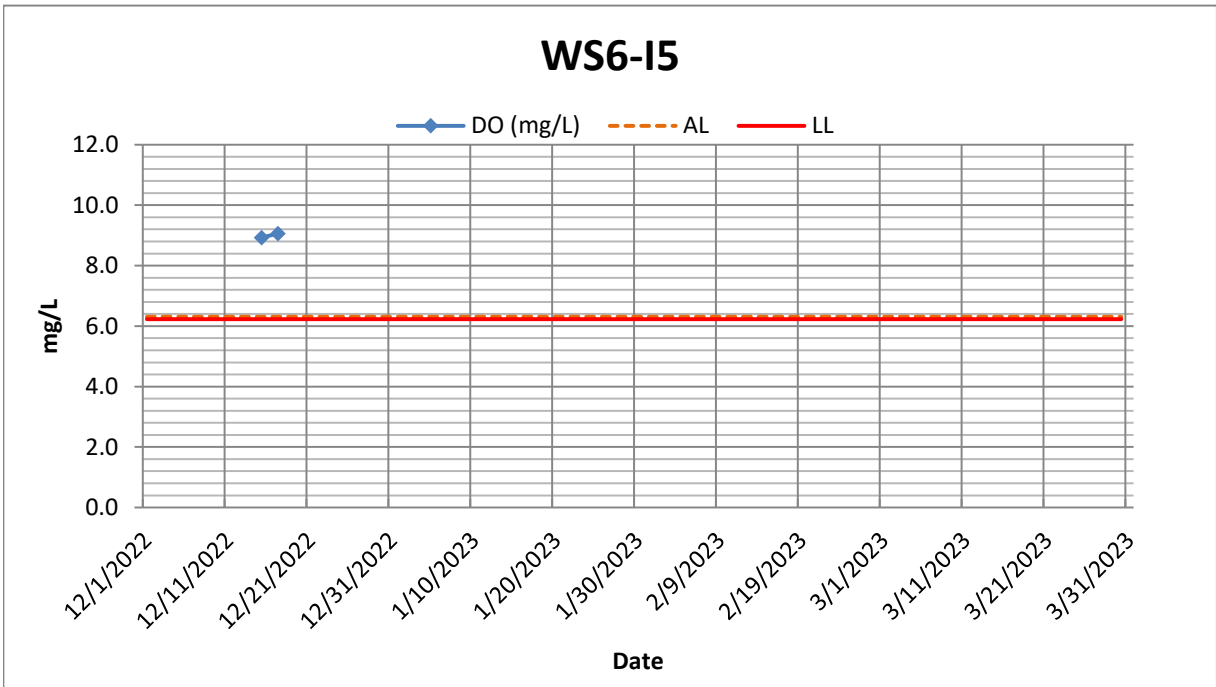
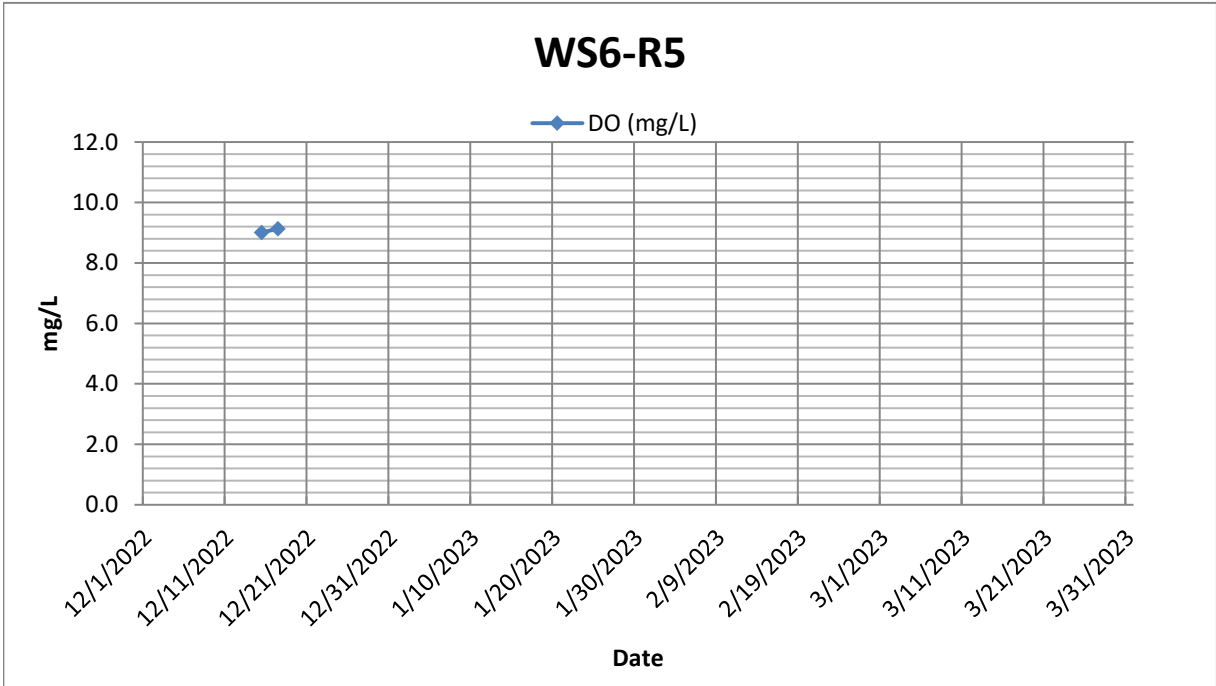


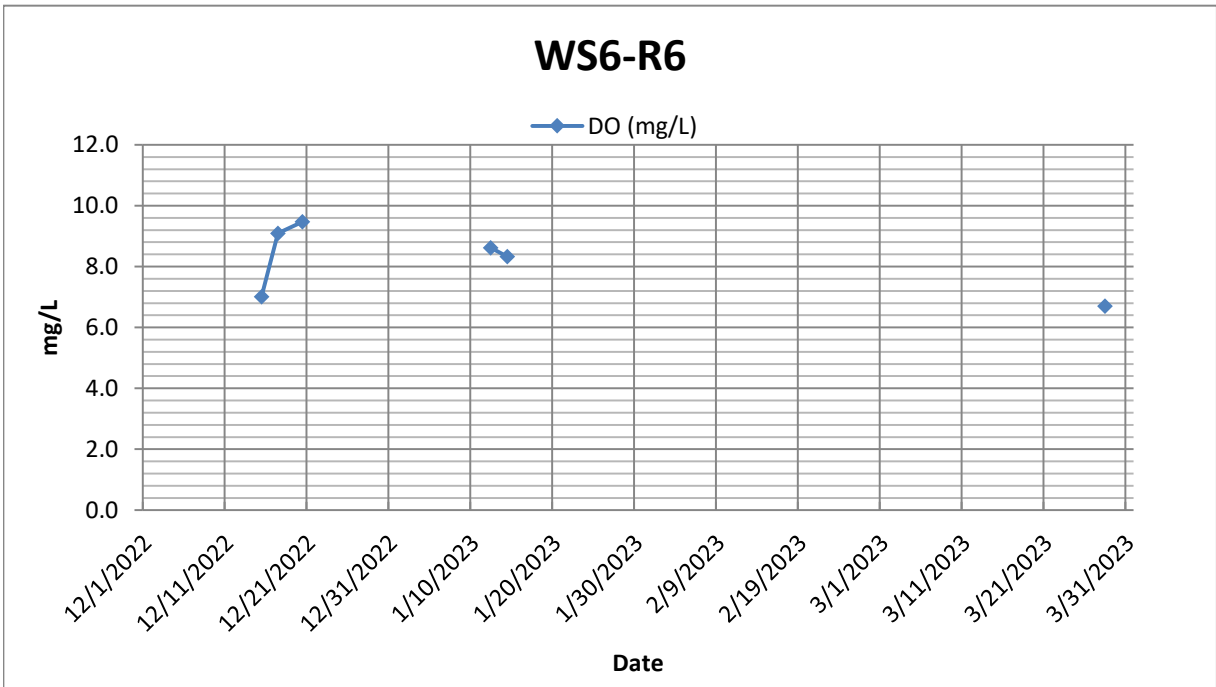
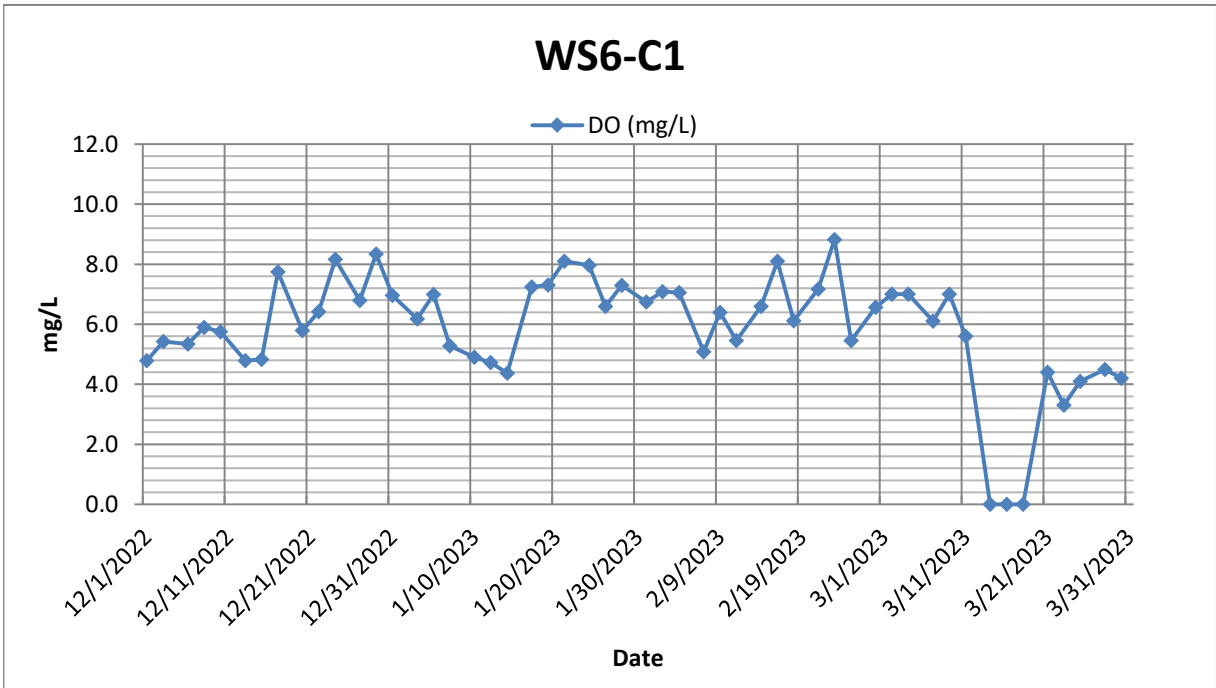




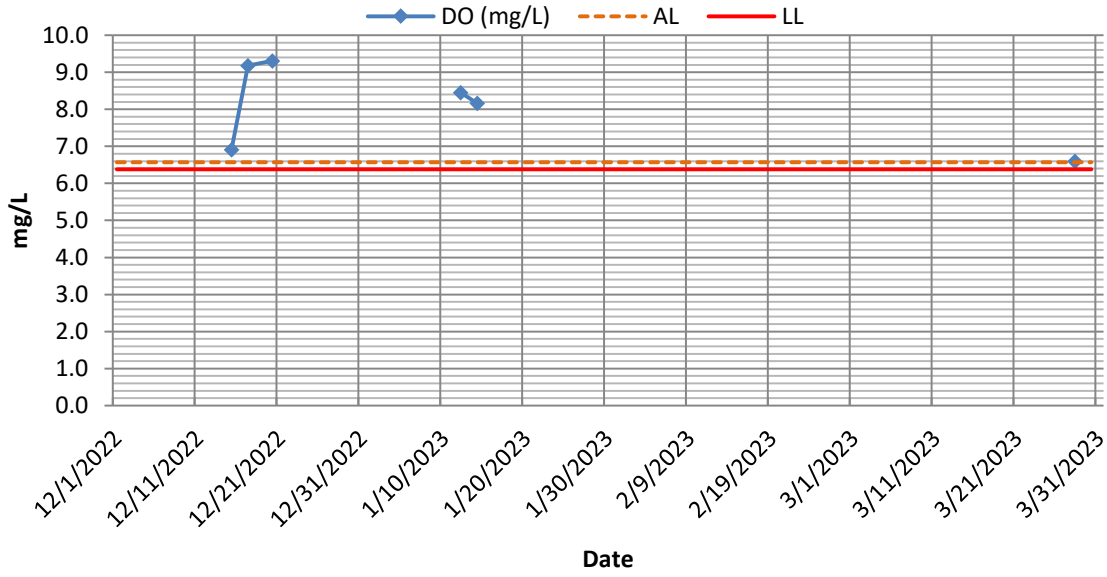


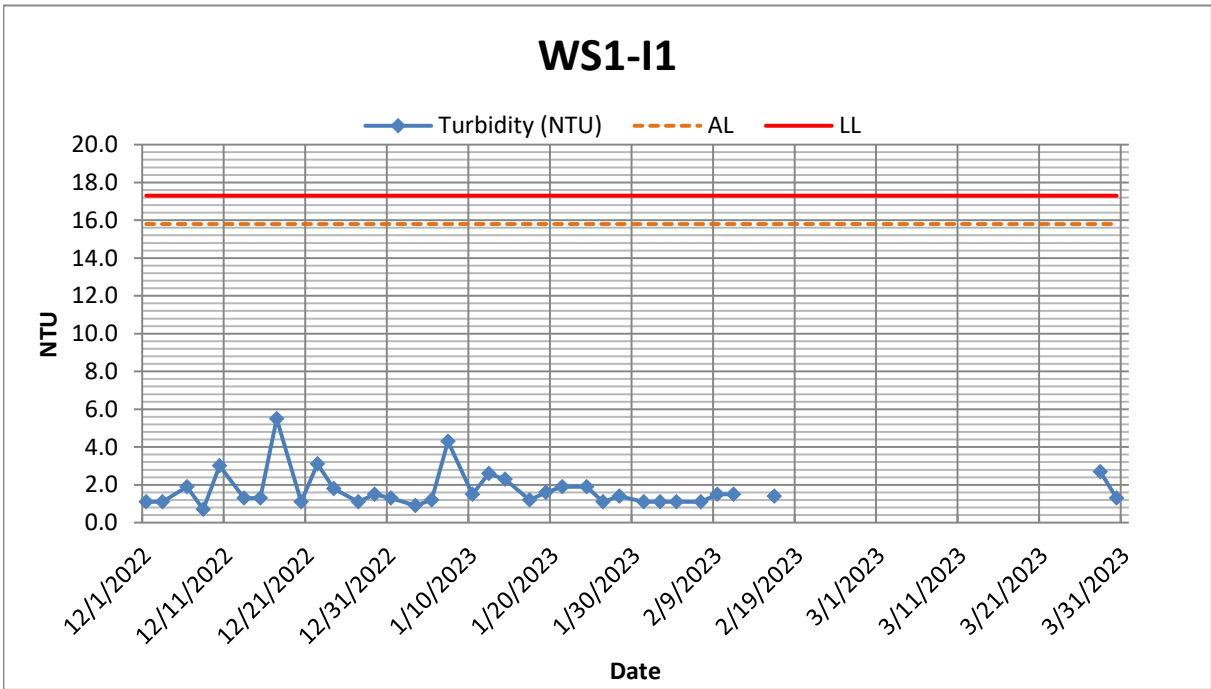
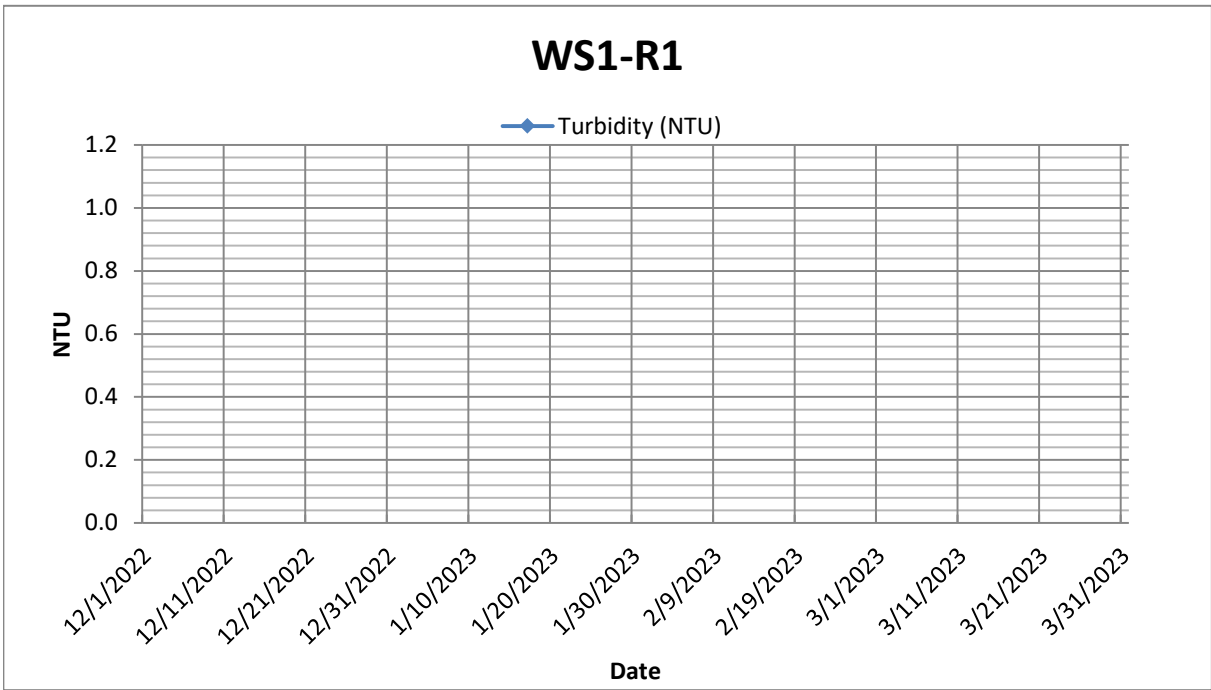




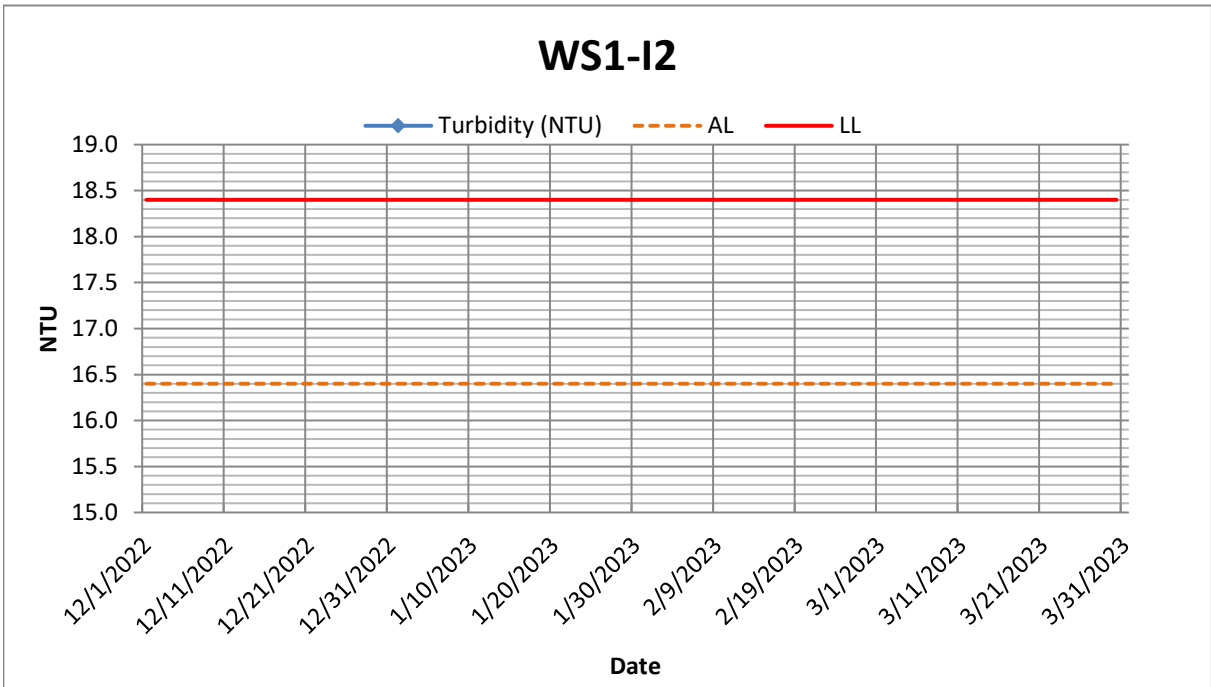
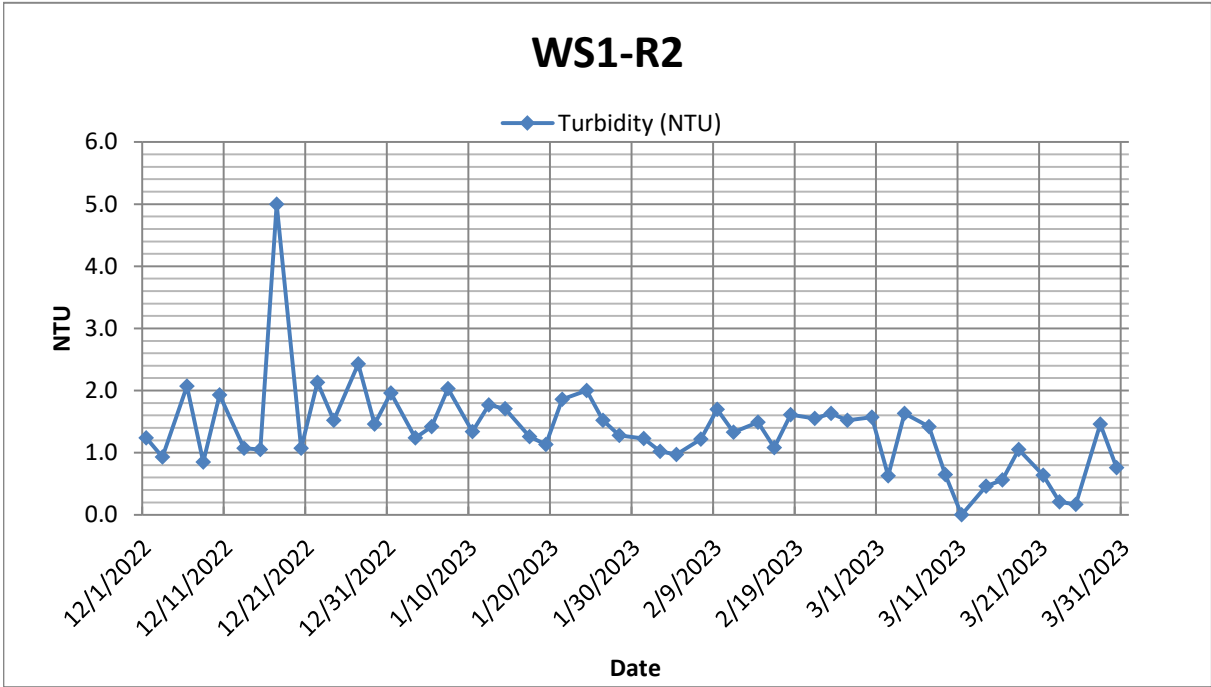


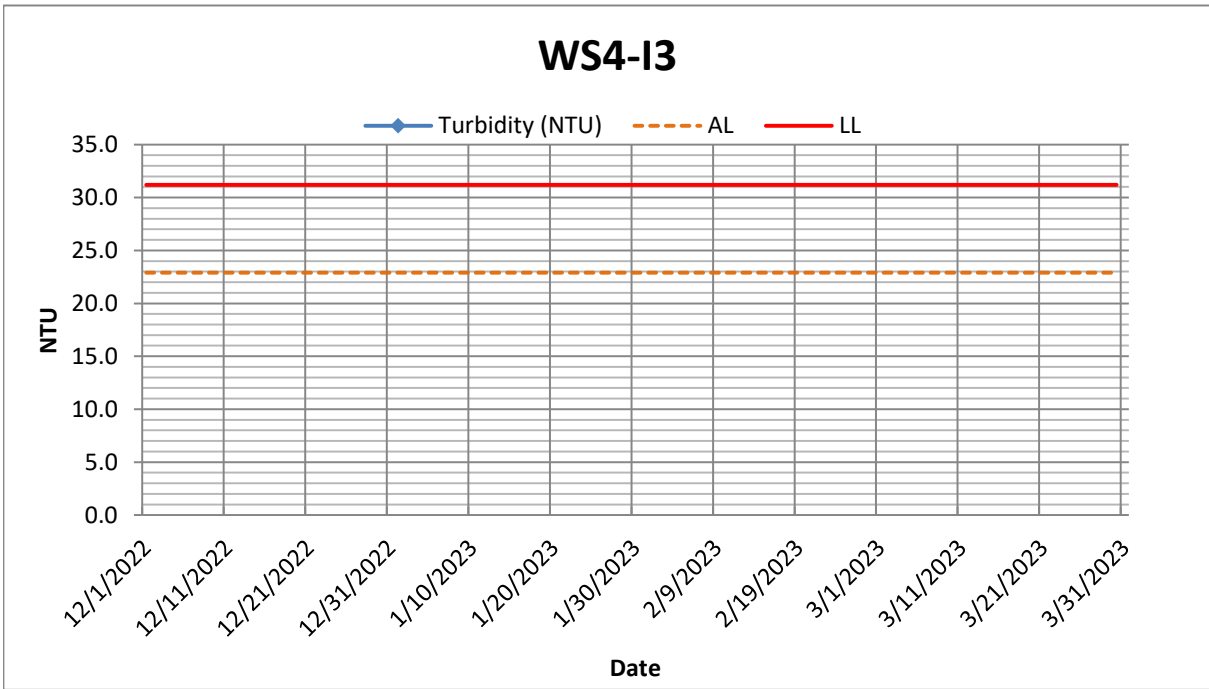
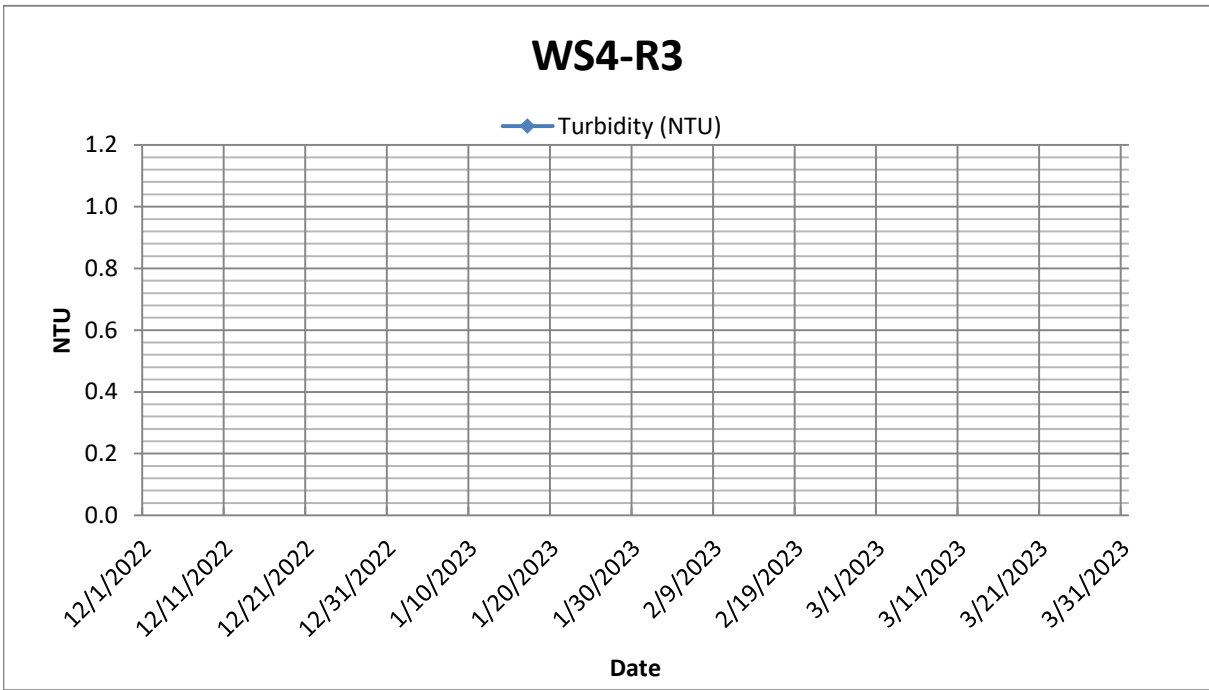
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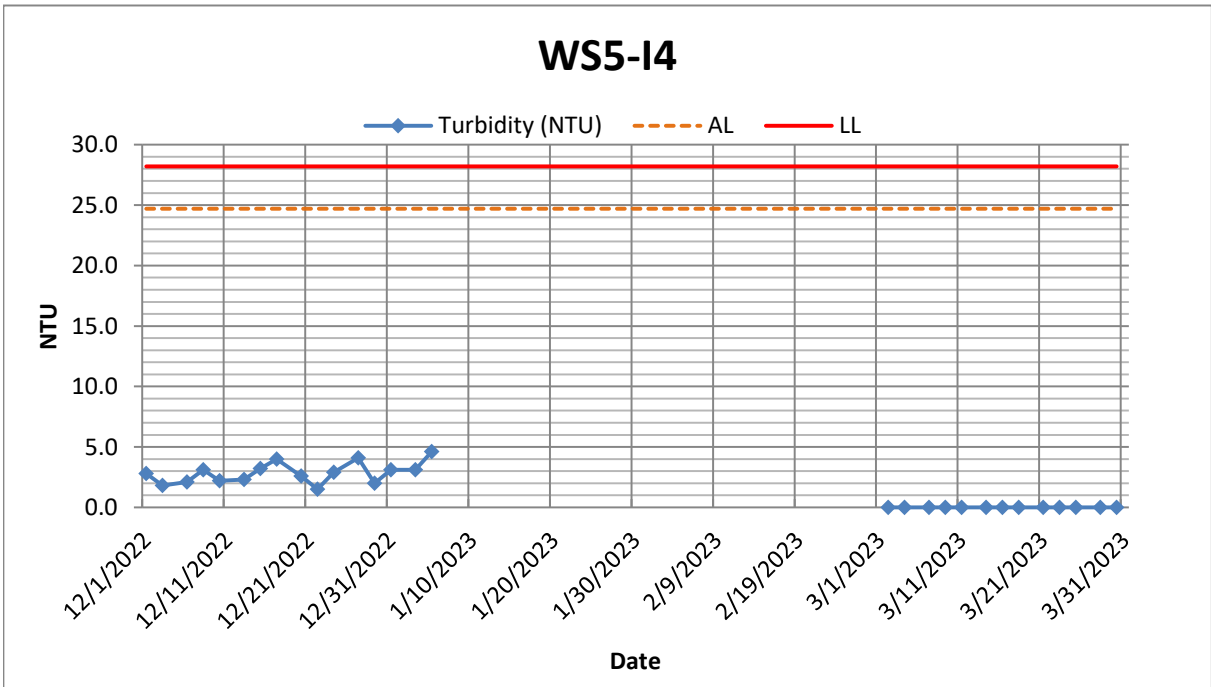
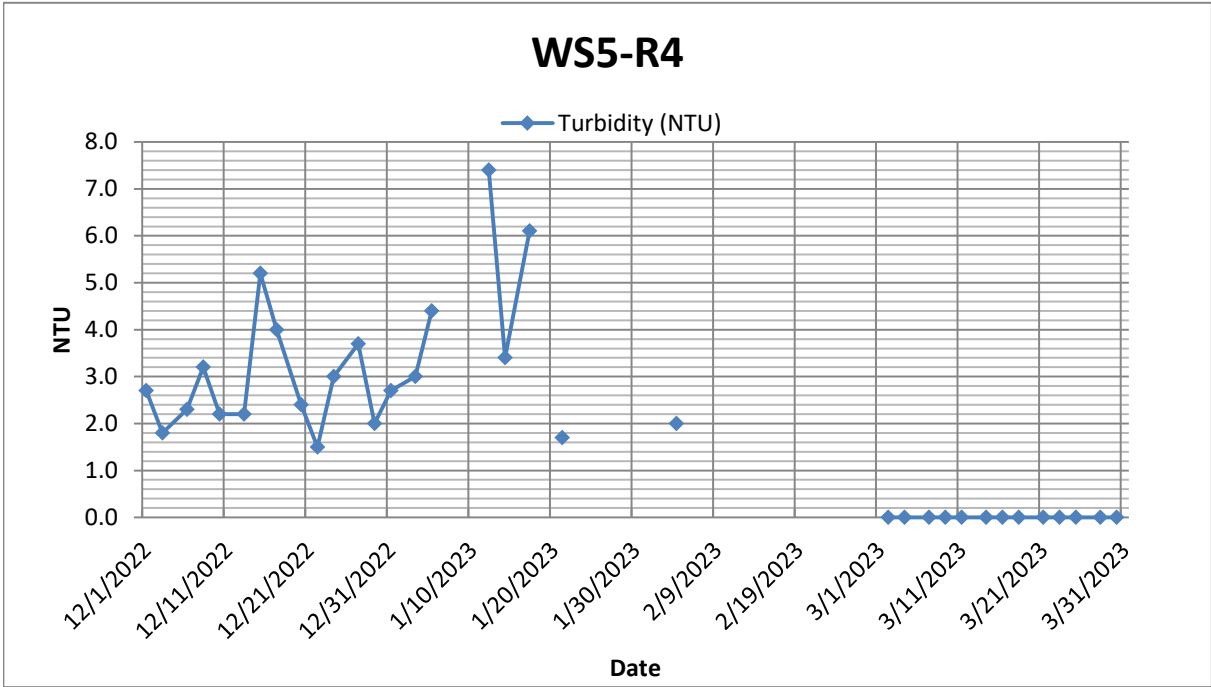


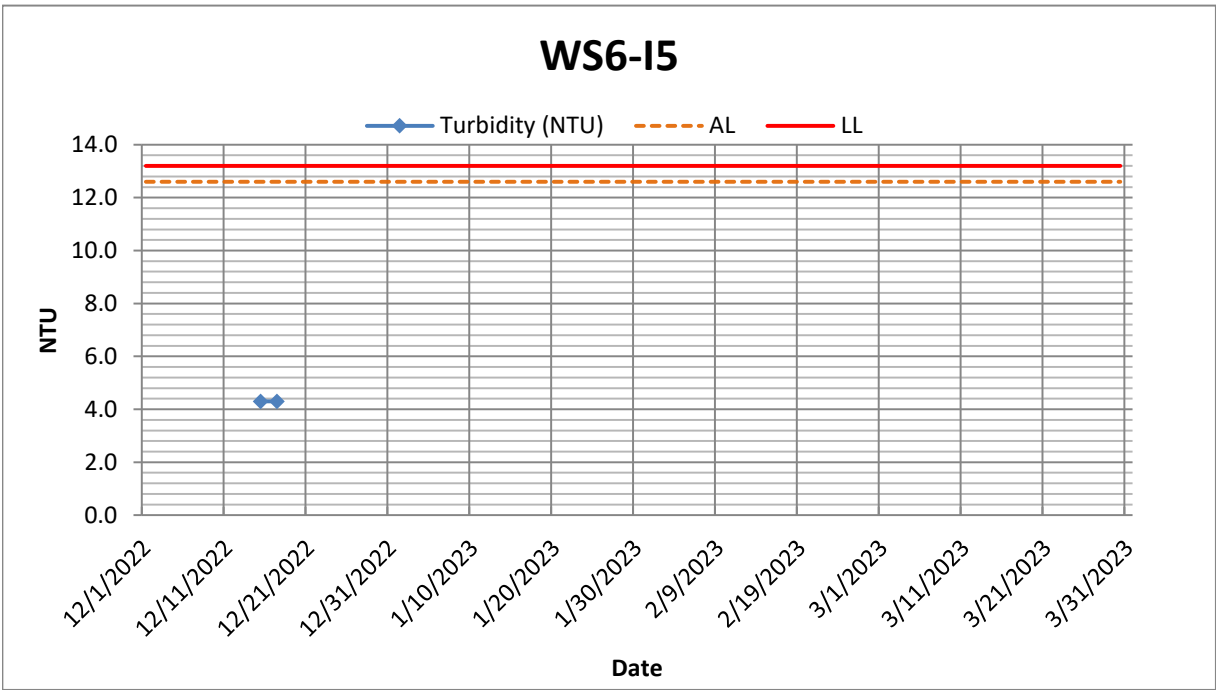
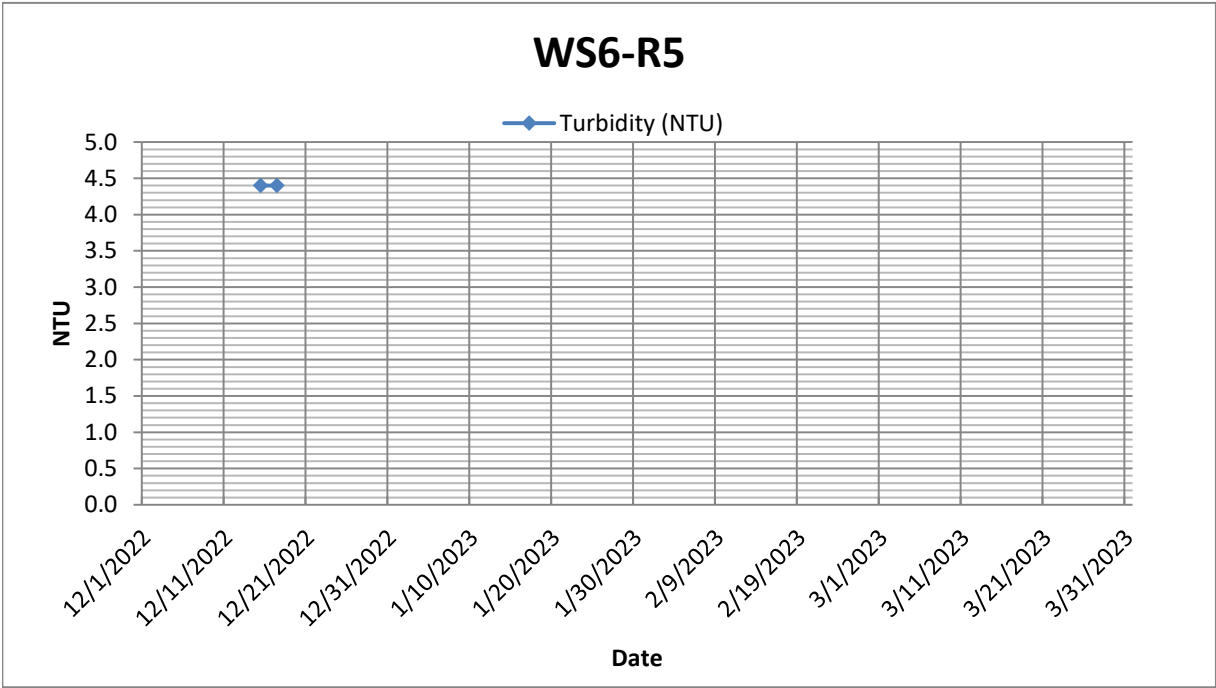


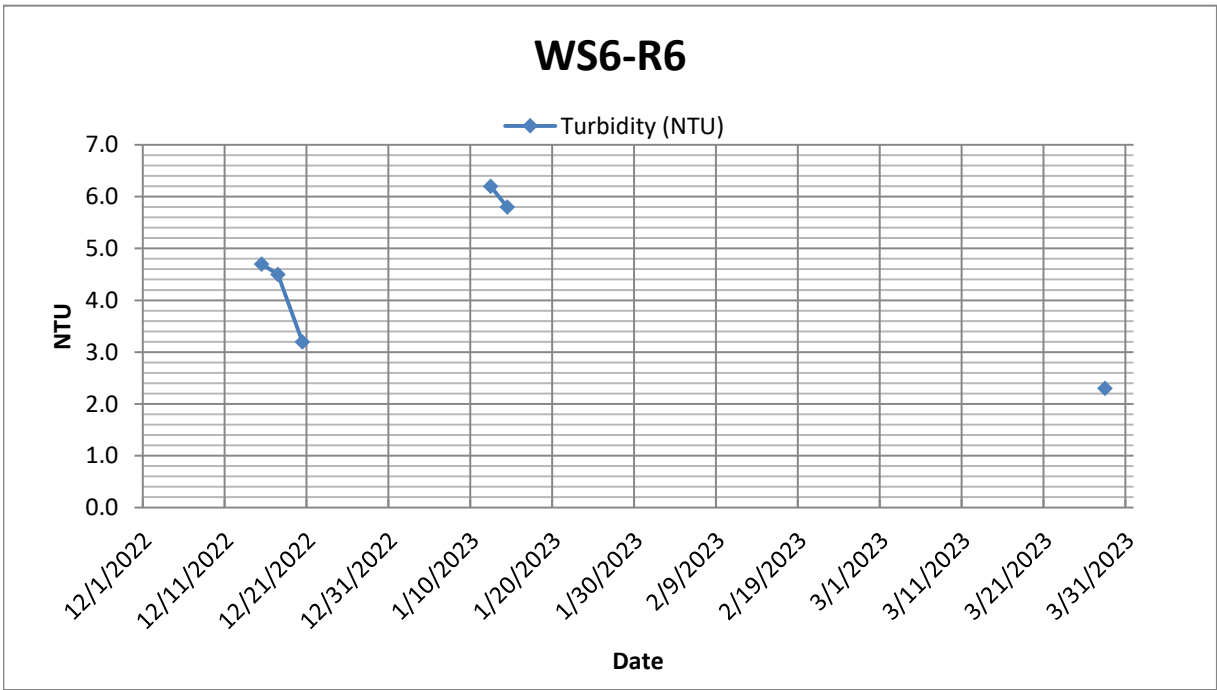
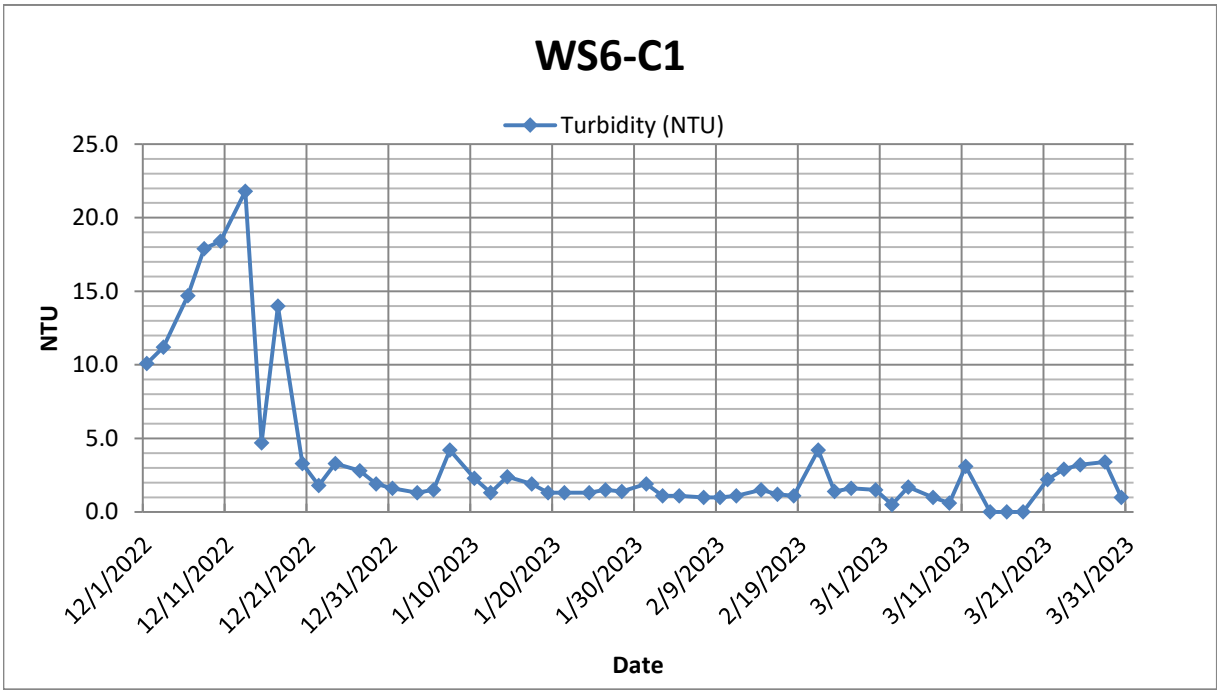




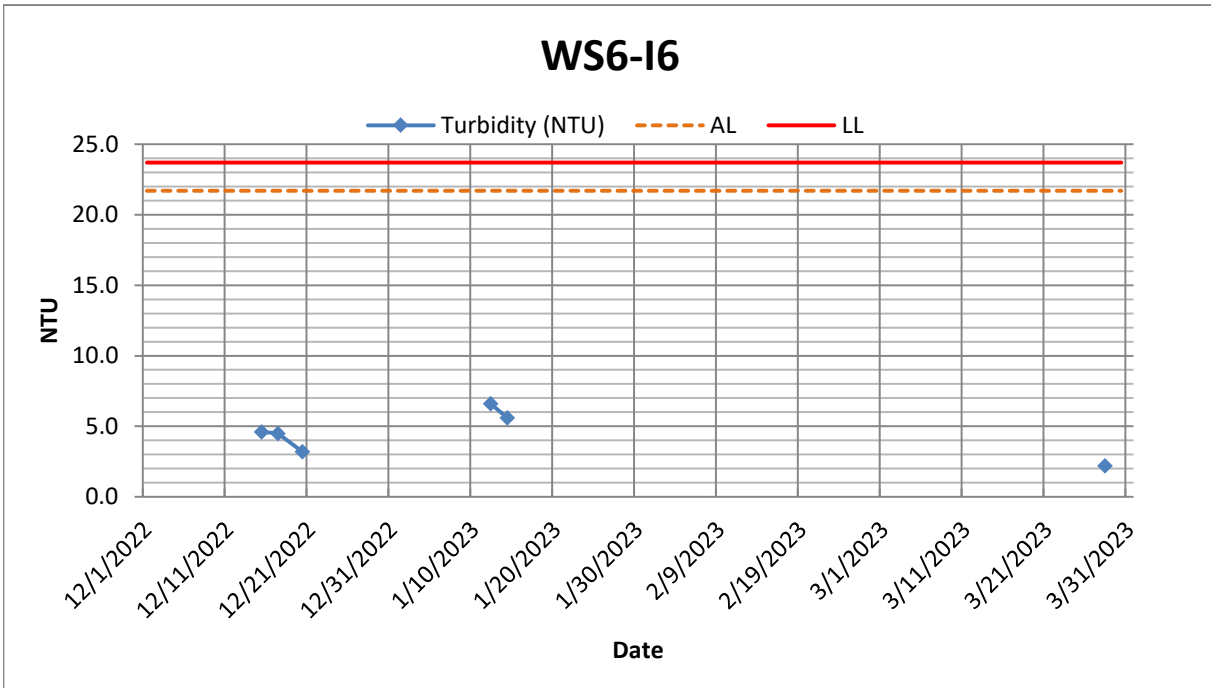


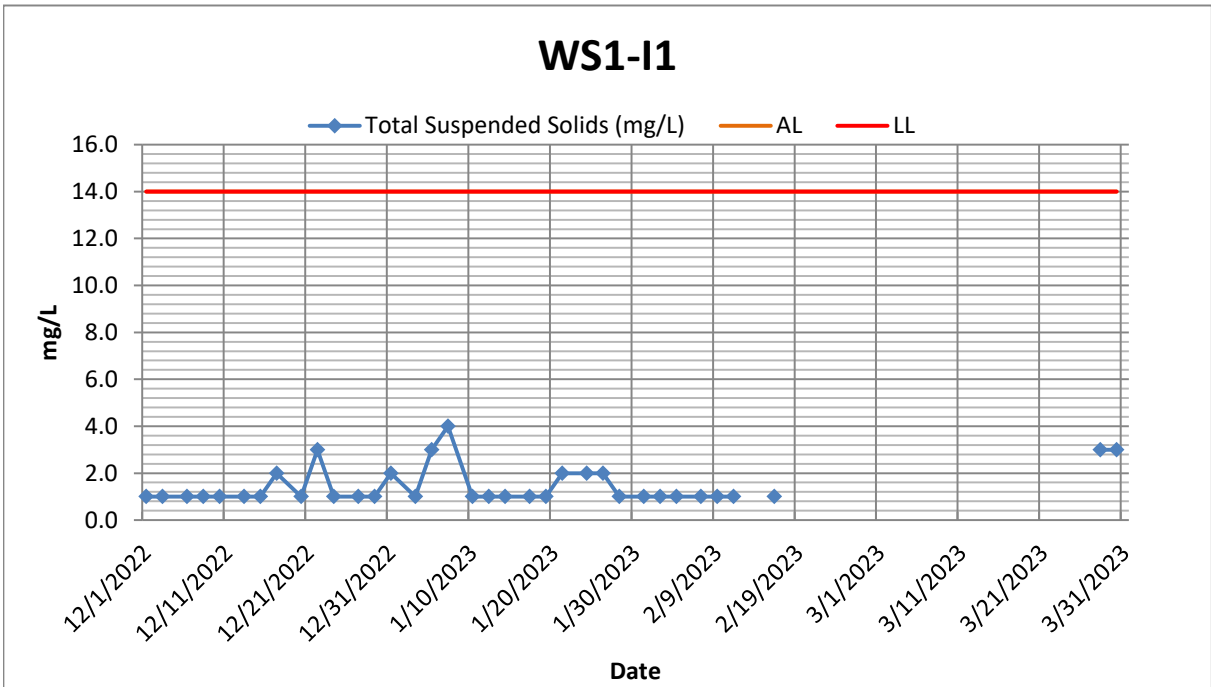
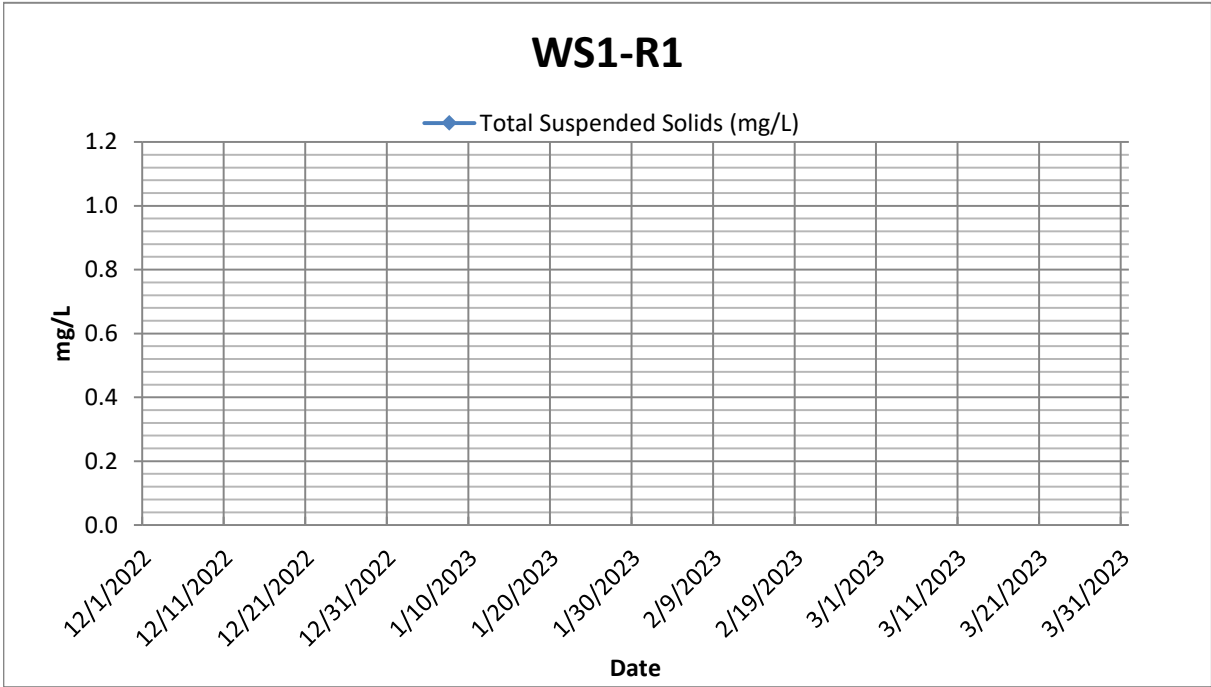




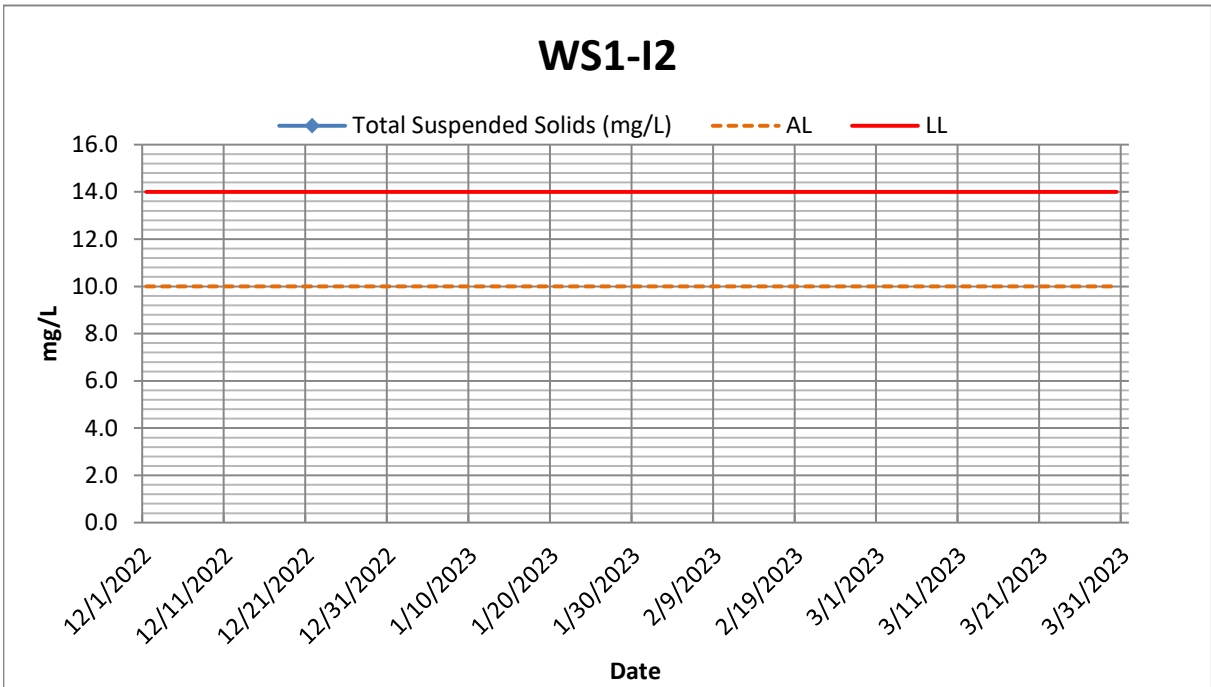
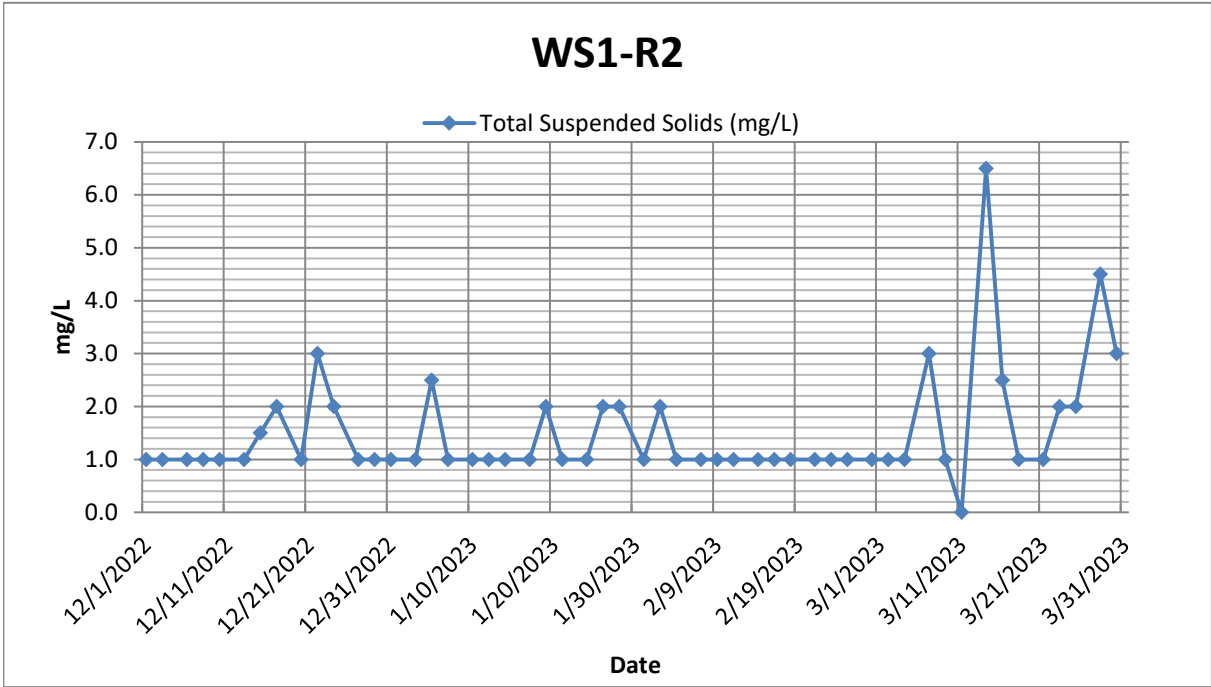


# WS6-I6

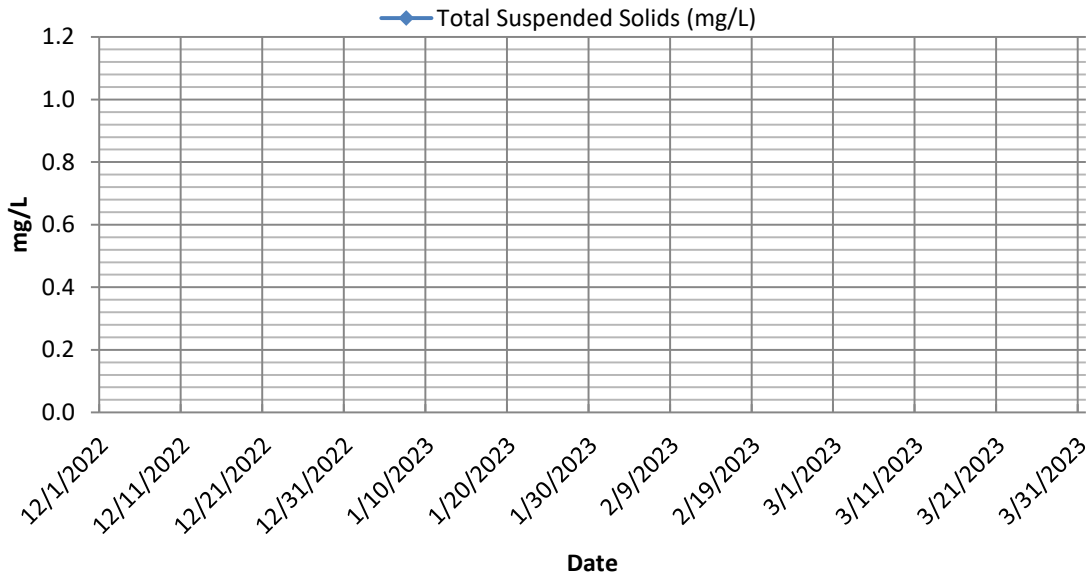




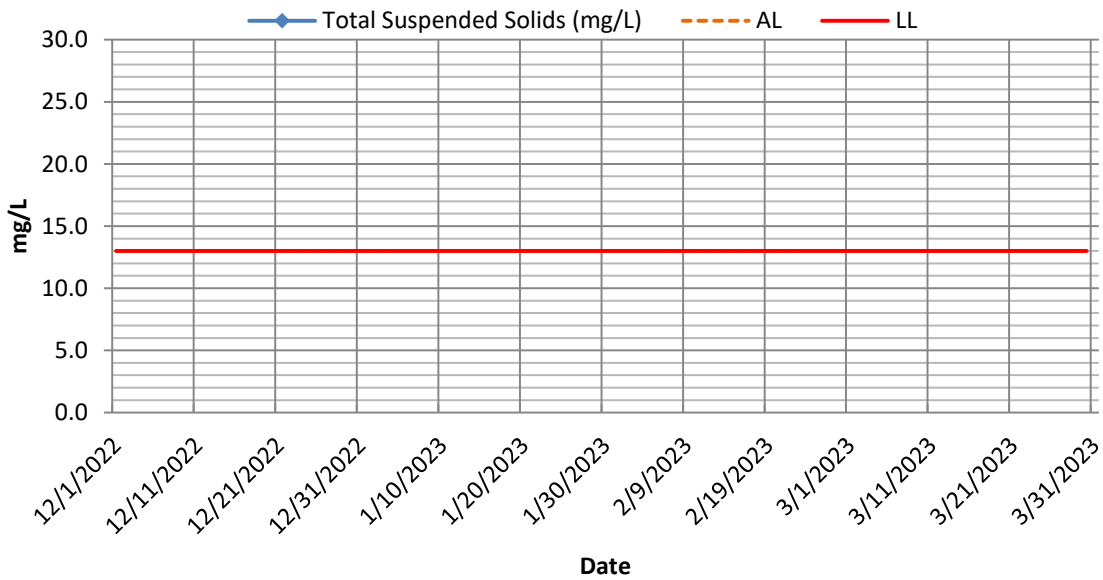




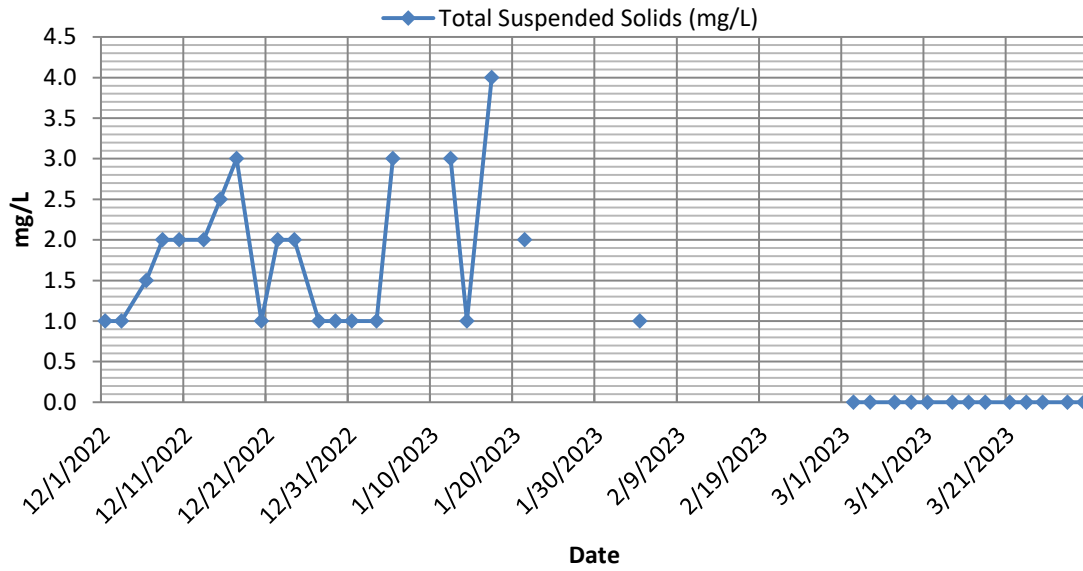
### WS4-R3



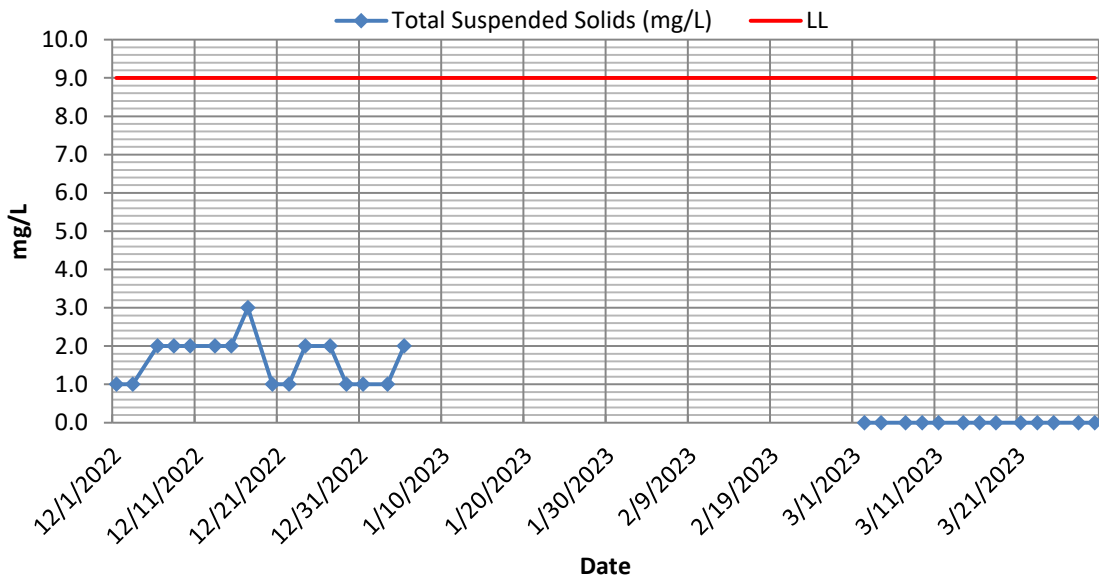
### WS4-I3



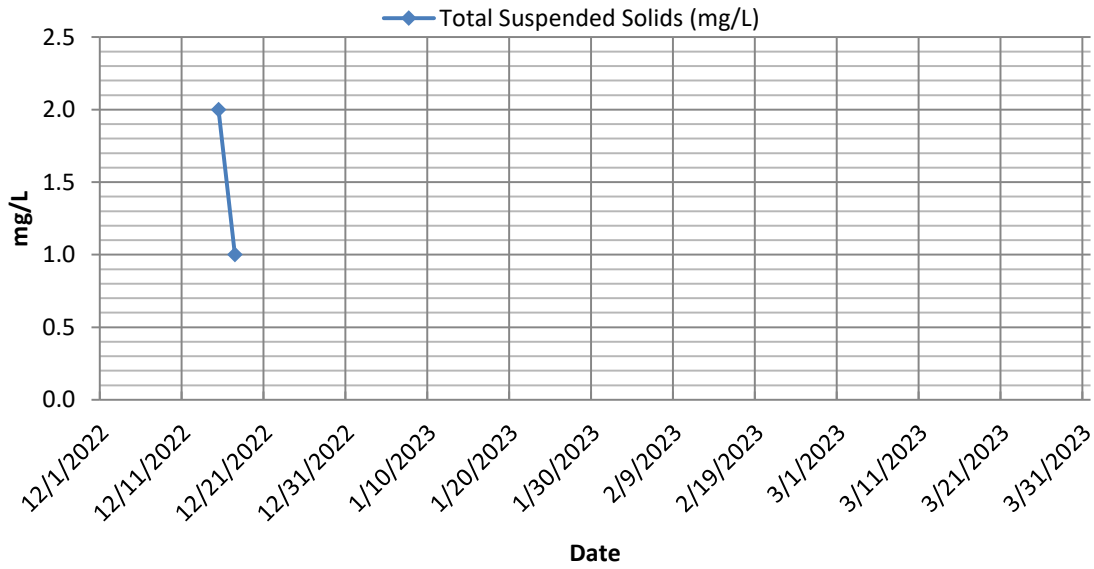
### WS5-R4



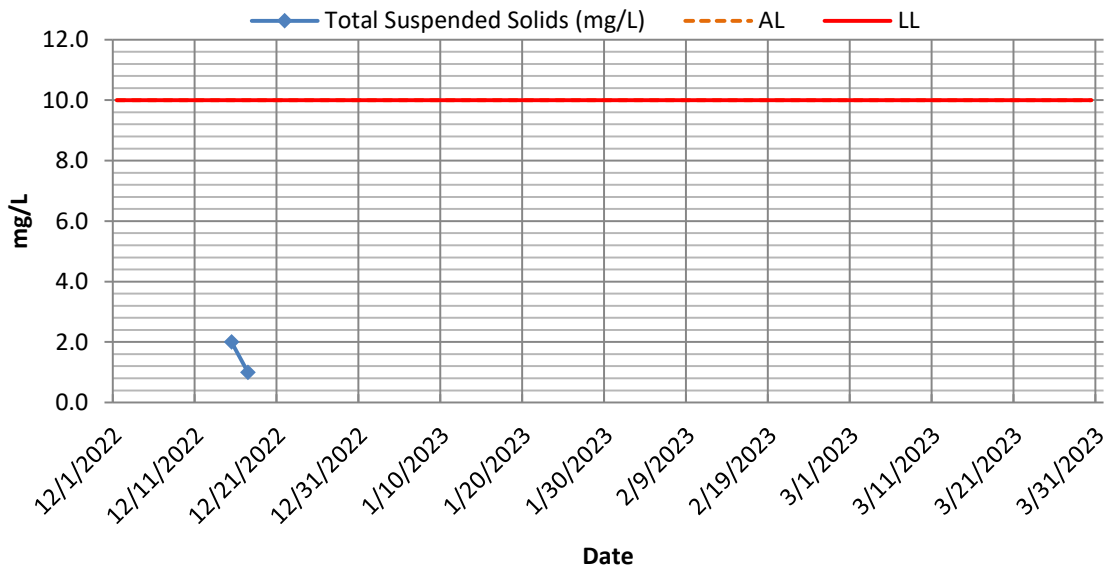
### WS5-I4

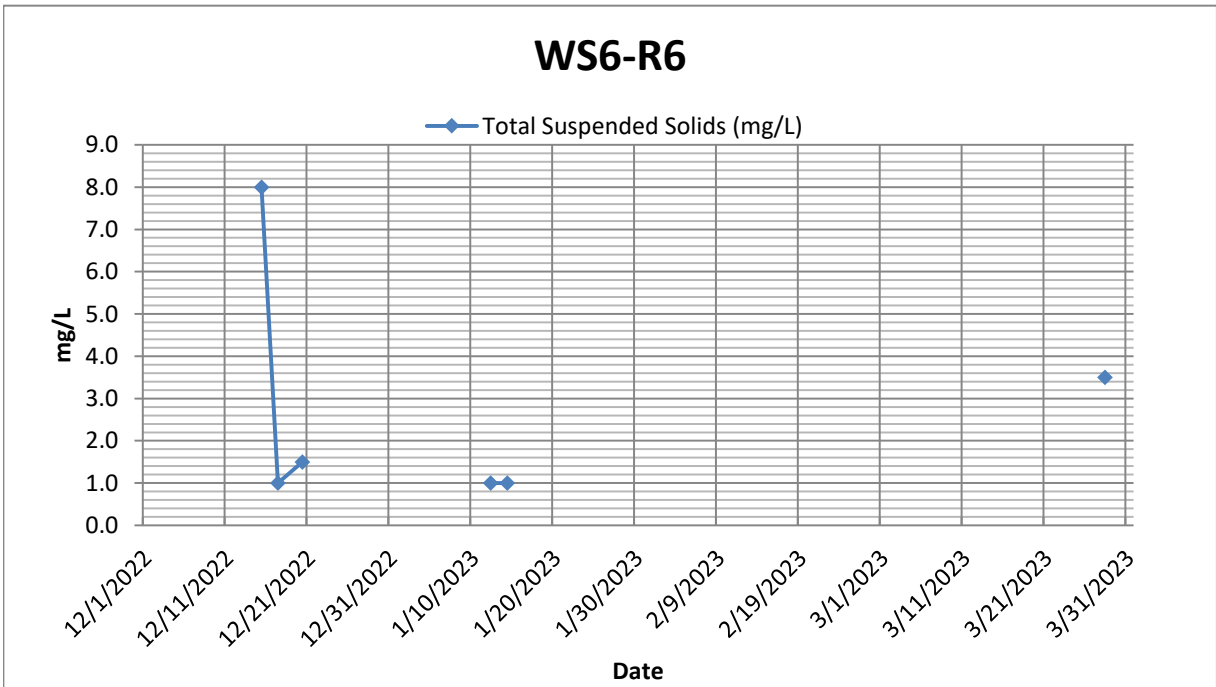
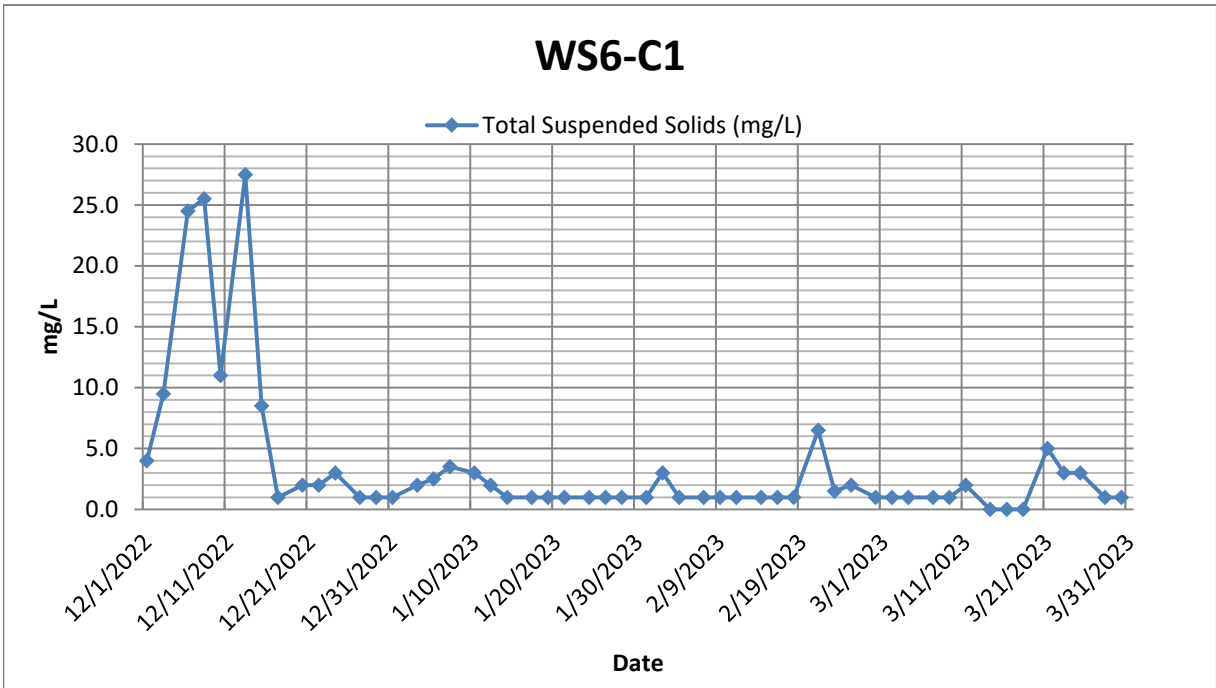


### WS6-R5

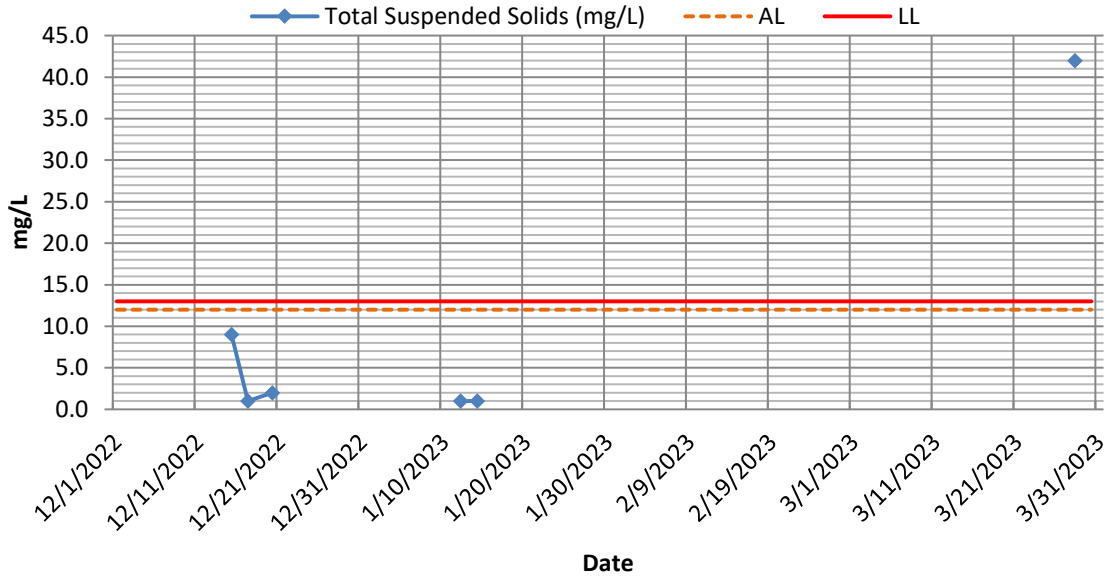


### WS6-I5





# WS6-I6



## Appendix I Statistics on Exceedances, Complaints, Notifications of Summons and Prosecutions

### Statistics on Monitoring Exceedance (Reporting Month)

Reporting Period	No. of Exceedance	
	AL	LL
No. of Exceedance This Month	0	0
Water Quality		
pH	0	0
DO	0	0
Turbidity	0	0
Suspended Solids	0	1

### Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Complaints	Notifications of Summons	Successful Prosecutions
No. of Complaints, Notifications of Summons and Successful Prosecutions This Month	0	0	0
<b>Cumulative Project-to-Date</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Environmental Complaints Log

Complaint Log No.	Date of Complaint Received	Received From	Received By	Nature of Complaint	Investigation/Mitigation Action	Status
<b>NIL</b>	--	--	--	--	--	--

Remark:

(1) No Complaints, Notifications of Summons or Successful Prosecutions was received in the reporting period.

**Appendix I2 Investigation Report on Limit Level of Non-compliance**

**Incident Report on Limit Level Non-compliance at WS6-I6  
 water sampling point**

Project	Environmental Team for Drainage Improvement Works at Ngong Ping (Contract No. DC/2019/06) (EP-456/2013/B)
Date	28 March 2022
Time	12:09 p.m.
Monitoring Location	WS6-I6 (Impact Point)
Parameter	Total Suspended Solids
Action & Limit Levels	Action Level: 12 mg/L or 120% of upstream control station of the same day: 4.2 mg/L Limit Level: 13 mg/L or 130% of upstream control station of the same day: 4.6 mg/L
Measured Level	Sampling result: 42 mg/L
Possible reason for Action or Limit Level Non-compliance	Reference water sampling point: WS6-R6 Sampling result: 3.5 mg/L  Reference water sampling point have also observed a relatively high level of Total Suspended Solids compared to the Control Point WS6-C6 (1.0 mg/L). The possible reason for reaching the LL, included the heavy rainfall recorded before the sampling day and stagnant water. Hence the dirt and soil were flushed down the stream and trapped at the sampling point.  According to the Contractor, only formwork erection was conducted, no excavation works nor water discharge which might cause pollution of the stream was conducted near WS6-I6 on the sampling day. Hence this exceedance is concluded as project non-related.
Actions taken / to be taken	<ul style="list-style-type: none"> <li>Identified the source of impact</li> <li>Informed IEC, Contractor, DSD and DEP</li> <li>Checked the monitoring data, all plant, equipment and Contractor working methods</li> <li>Discussed with IEC for the possible cause of exceedance</li> </ul>
Remarks	N.A.

Prepared by: Michelle Shum

Designation: Assistant Environment Consultant (ET member)

Signature: 

Date: 17/04/2023



## Appendix J Weather Condition

Date	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)				
March 2023								
1	1021.5	24.4	19.7	16.4	14.1	71	6	-
2	1023.8	23.2	19.8	17.8	14	70	28	-
3	1024.9	22.4	18.6	16.5	9.5	56	11	-
4	1024.4	23.8	19.6	17.3	12.4	65	49	-
5	1023.6	23.5	19.7	17.3	10.1	57	9	-
6	1022.4	24.1	20	17.4	8.5	50	9	-
7	1020.9	24.1	20.1	17.7	10.8	56	7	-
8	1019.7	25.7	21.6	19.1	17.3	77	34	-
9	1017.7	27	22.5	19.5	17.6	75	37	-
10	1017.6	26.6	22.4	20.3	15.8	68	23	-
11	1018.3	26	22.1	19.9	15.6	67	32	-
12	1018.9	25.6	22.6	20.2	16.8	71	70	0.1
13	1020.4	22.4	20.1	19.1	13.1	64	82	Trace
14	1016.8	22.9	19.7	18.7	14.8	73	68	-
15	1017.4	24.5	21	18.7	16.8	77	42	-
16	1018.4	25.8	22	19.4	16.3	72	59	Trace
17	1016.8	26.1	21.7	20	18.6	83	66	0.5
18	1015.5	26.8	22.3	19.8	18.7	80	76	-
19	1015.2	21.9	20.6	20	18.2	86	88	0.6
20	1012	24.4	21.8	20.1	19.7	88	90	0.3
21	1009.2	25.4	23.7	22.1	21	85	88	Trace
22	1008	25.6	24.7	24.1	21.7	83	93	Trace
23	1008.6	26.3	25	24.1	21.6	81	91	-
24	1011.4	29	25.6	23.3	21.8	80	79	-
25	1013.1	26.4	23.4	20.9	21.4	89	88	53.5
26	1014	21.6	20.8	20	19.2	91	89	5.9
27	1016.2	20	18.6	17.5	16.1	86	94	6.3
28	1017.6	20.1	18.7	17.2	15.9	84	100	Trace
29	1015.4	21.8	19.9	18.4	17.5	86	93	0.9
30	1012.9	21.4	20.8	19.8	18.9	89	98	0.3
31	1013.3	21.1	20.3	19.6	19	92	99	1.9

Trace means rainfall less than 0.05 mm

**Source: Hong Kong Observatory**