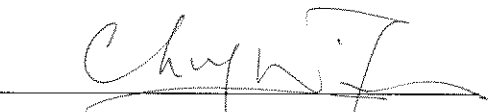


# **Civil Engineering and Development Department**

## **Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas**

### **Additional Baseline Water Quality Monitoring Report**

**(Version 1.0)**

<p>Certified By</p> <p></p> <p>Dr. Priscilla Choy</p> <p>(Environmental Team Leader)</p>
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#### **REMARKS:**

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

WELLAB accepts no responsibility for changes made to this report by third parties

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**Agreement No. CE 33/2019 (EP)**

**Independent Environmental Checker for Environmental Monitoring and Audit  
Works in Construction Phase for the First Phase Development of Kwu Tung  
North and Fanling North New Development Areas – Investigation**

**Additional Baseline Water Quality Monitoring Report**

22 March 2021

**BY Email**

Dear Sir,

We refer to email of 19 March 2021 attaching the Additional Baseline Water Quality Monitoring Report prepared by the Environmental Team (ET) of the captioned.

We would like to inform you that we have no adverse comment on the captioned submission. Therefore we write to verify the captioned submission in accordance with the Section 15.2.1 of the Updated EM&A Manual for Advance And First Stage Works of Kwu Tung North and Fanling North New Development Areas.

Should you have any queries, please contact the undersigned at 2828 5967.

Yours faithfully,  
For and on behalf of the  
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## TABLE OF CONTENTS

	Page
<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
Water Quality Monitoring.....	1
<b>1. INTRODUCTION .....</b>	<b>2</b>
Project Background.....	2
Purpose of Additional Baseline Water Quality Monitoring Report.....	2
Structure of Additional Baseline Water Quality Monitoring Report .....	3
<b>2. ADDITIONAL BASELINE WATER QUALITY MONITORING.....</b>	<b>4</b>
Monitoring Requirement.....	4
Monitoring Locations.....	4
Monitoring Equipment.....	5
Monitoring Parameters and Frequency .....	6
Monitoring Methodology .....	7
Laboratory Analytical Methods .....	7
QA/QC Requirements .....	8
<b>3. ADDITIONAL BASELINE WATER QUALITY MONITORING RESULTS AND OBSERVATIONS.....</b>	<b>9</b>
Results.....	9
Observations.....	11
Review of Baseline Water Quality Monitoring Data.....	11
Event and Action Plan for Impact Water Quality Monitoring.....	14
<b>4. CONCLUSIONS.....</b>	<b>15</b>

## **LIST OF TABLES**

Table I	Additional Baseline Water Quality Monitoring Period
Table 2.1	Water Quality Monitoring Stations
Table 2.2	Water Quality Monitoring Equipment
Table 2.3	Water Quality Monitoring Parameters and Frequency
Table 2.4	Method for Laboratory Analysis for Water Samples
Table 3.1	Summary of Baseline Water Quality Monitoring Results
Table 3.2	Summary of Control Stations corresponding to the Relevant Impact Stations
Table 3.3	Guidelines for Establishment of Action and Limit Levels
Table 3.4	Proposed Action and Limit Levels for Water Quality Monitoring
Table 3.5	Calculated Action and Limit Levels for Water Quality Monitoring

## **LIST OF FIGURES**

Figure 1	Location of Additional Water Quality Monitoring Stations at River Beas
Figure 2	Location of Additional Water Quality Monitoring Stations at River Indus and near Siu Hang San Tsuen Stream

## **LIST OF APPENDICES**

Appendix A	Calibration Certificates of Multi-parameter Water Quality System
Appendix B1	Additional Baseline Water Quality Monitoring Results
Appendix B2	Graphical Presentation of Additional Baseline Water Quality Monitoring Data
Appendix C	Laboratory Testing Reports
Appendix D	Quality Control Reports
Appendix E	Weather Conditions During Additional Baseline Water Quality Monitoring Period
Appendix F	Additional Baseline Water Quality Monitoring Schedule
Appendix G	Event and Action Plan



**EXECUTIVE SUMMARY**

1. This Additional Baseline Water Quality Monitoring Report is prepared by WELLAB Limited under the First Phase Development of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs), comprising the Advance Works and First Stage Works (the Project). This report presents the additional baseline water quality monitoring works performed for the Project in January 2021.
2. According to the comments provided by Environmental Protection Department (EPD) on the updated Environmental Monitoring and Audit (EM&A) Manual prepared by pre-construction Environmental Team (ET), additional water quality monitoring shall be conducted at River Beas, River Indus and near Siu Hang San Tsuen Stream during the relevant construction works.

**Water Quality Monitoring**

3. The additional baseline water quality monitoring was conducted at six monitoring stations between 6<sup>th</sup> January 2021 and 18<sup>th</sup> January 2021. Monitoring was conducted three times per week for two weeks to monitor dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature, salinity, suspended solids (SS) and arsenic (As). The data was processed, reviewed and analyzed to establish the baseline water quality conditions at River Beas, River Indus and near Siu Hang San Tsuen Stream prior to the commencement of the relevant construction works.

**Table I Additional Baseline Water Quality Monitoring Period**

Location(s)	Monitoring Station(s)	Parameters, unit	Baseline Monitoring Period
River Beas	SYR-CS1 SYR-IS1	<ul style="list-style-type: none"> <li>• Temperature (°C)</li> <li>• pH (pH unit)</li> <li>• Turbidity (NTU)</li> <li>• Water depth (m)</li> <li>• Salinity (ppt)</li> <li>• Dissolved Oxygen (DO) (mg/L and % of saturation)</li> <li>• Suspended Solid (SS) (mg/L)</li> <li>• Arsenic (As) (µg/L)</li> </ul>	6/1/2021 – 18/1/2021 (3 days per week, for 2 weeks prior to the commencement of construction works)
River Indus and near Siu Hang San Tsuen Stream	NTR-CS1 NTR-IS1 SHST-IS2 MWR-IS3	<ul style="list-style-type: none"> <li>• Temperature (°C)</li> <li>• pH (pH unit)</li> <li>• Turbidity (NTU)</li> <li>• Water depth (m)</li> <li>• Salinity (ppt)</li> <li>• Dissolved Oxygen (DO) (mg/L and % of saturation)</li> <li>• Suspended Solid (SS) (mg/L)</li> </ul>	

4. The baseline water quality data established in this report are considered representative of the baseline conditions for the Project.

## 1. INTRODUCTION

- 1.1. WELLAB Limited was commissioned by Civil Engineering and Development Department (CEDD) under “Service Contract No. NDO 04/2019 Environmental Team for Environmental Monitoring and Audit Works in Construction Phase for the First Phase Development of Kwu Tung North and Fanling North New Development Areas” (hereinafter called the “Service Contract”) as the Environmental Team to undertake the Environmental Monitoring and Audit (EM&A) services for the Works Contracts involved in the implementation of First Phase Development of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) Project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permits (EPs), updated Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the KTN FLN NDAs project and other relevant statutory requirements.

### **Project Background**

- 1.2. The Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) are one of the important sources of land and housing supply in the medium and long term. The development of the KTN and FLN NDAs will be implemented in phase for full completion by 2031. The Phase 1 of the NDAs development, comprising the Advance Works and First Stage Works, is targeted to be implemented from the second half of 2019 progressively. The Advance and First Stage Works would include site formation, engineering infrastructure works (including roads, drainage, sewerage, waterworks, landscaping works, pumping stations, and fresh water and flushing water service reservoirs), soil remediation, reprovisioning of North District Temporary Wholesale Market, development of a nature park at Long Valley and implementation of environmental mitigation measures.
- 1.3. The Project which covers KTN and FLN NDAs is a designated project (DP) under Schedule 3 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). In October 2013, the EIA Report (AEIAR-175/2013) for the Project was approved by the Director of Environmental Protection pursuant to the EIA Ordinance. The First Phase Development of the Project is governed by Environmental Permits (EPs) (EP-466/2013, EP-467/2013/A, EP-468/2013/A, EP-469/2013, EP-470/2013, EP-473/2013/A, EP-475/2013/A and EP-546/2017) under seven Contracts (Works Contracts No.: ND/2019/01, ND/2019/02, ND/2019/03, ND/2019/04, ND/2019/05, ND/2019/06 and ND/2019/07).

### **Purpose of Additional Baseline Water Quality Monitoring Report**

- 1.4. The purpose of the “Additional Baseline Water Quality Monitoring Report” (the “Report”) is to establish the baseline water quality conditions at the designated monitoring stations. These baseline levels will be used as the basis for the impact monitoring during the relevant construction works of the Project. This report presents the monitoring locations, equipment, period, methodology, results and observations for water quality measurement during the baseline period.

## **Structure of Additional Baseline Water Quality Monitoring Report**

1.5. The structure of the Report is summarized as follows:

Section 1: Introduction, purpose, background and the structure of the report.

Section 2: Water Quality Monitoring, which describes the additional baseline water quality monitoring

Section 3: Additional Baseline Water Quality Monitoring Results and Observations

Section 4: Conclusions

## 2. ADDITIONAL BASELINE WATER QUALITY MONITORING

### Monitoring Requirement

- 2.1. Baseline water quality monitoring were conducted at the designated monitoring stations three days per week for two or four weeks prior to commencement of related construction works in the rivers subject to the stability of the collected data. Dissolved Oxygen (DO), temperature, turbidity, pH and Suspended Solids (SS) were measured at all designated locations and arsenic was measured for the water quality monitoring stations at River Beas.
- 2.2. Replicate in-situ measurement and samples from each independent sampling event were collected to ensure a robust statistically interpretable database. DO, temperature, turbidity and pH were measured in-situ whereas SS and arsenic were determined by an accredited laboratory. Other relevant data were recorded, including monitoring location / position, time, water depth, weather conditions and any special phenomena or work underway at the construction site.
- 2.3. For all the monitoring stations, sampling were taken at 3 water depths, namely 1m below the water surface, mid depth and 1m above the river bed. For stations that are less than 3m in depth, only the mid depth sample was taken. Should the water depth is less than 6m, in which case the mid-depth station may be omitted. The interval between two sampling surveys was not less than 36 hours.

### Monitoring Locations

- 2.4. A total of six monitoring stations (SYR-CS1, SYR-IS1, NTR-CS1, NTR-IS1, SHST-IS2, MWR-IS3) are proposed for the water quality monitoring program. The locations of the proposed water quality monitoring stations are shown in **Table 2.1** and shown in **Figure 1a** and **1b**.

**Table 2.1 Water Quality Monitoring Stations**

Table 2.1 Water Quality Monitoring Stations			
Station	Description	Locations	Measurement Periods
River Beas			
SYR-CS1	Control Station	Upstream of river	During the construction site drainage along River Beas and construction of footbridge across River Beas
SYR-IS1	Impact Station	Downstream of river	
River Indus and near Siu Hang San Tsuen Stream			
NTR-CS1	Control Station	Upstream of river	During construction of bridge across River Indus
NTR-IS1	Impact Station	Downstream of river	
SHST-IS2	Impact Station	Water sensitive receiver at near Siu Hang San Tsuen Stream	
MWR-IS3	Impact Station	Water sensitive receiver at near Ma Wat River	

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## **Monitoring Equipment**

### Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 2.5. The instrument for measuring dissolved oxygen and temperature should be portable and weatherproof complete with cable, sensor, and use DC power source. The equipment was capable of measuring:
- A dissolved oxygen level in the range of 0-20mg/L and 0-200% saturation; and
  - The temperature within 0-45 degree Celsius.
- 2.6. The equipment had a membrane electrode with automatic temperature compensation complete with a cable.
- 2.7. Sufficient stocks of spare electrodes and cables were available for replacement where necessary.
- 2.8. Salinity compensation was built-in in the DO equipment. *In-situ* salinity was measured to calibrate the DO equipment prior to each DO measurement.

### Turbidity

- 2.9. Turbidity was measured *in situ* by using the nephelometric method. The instrument was portable and weatherproof using a DC power sources complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not less than 25m in length. The meter was calibrated in order to establish the relationship between NTU units and the levels of suspended Solids.

### Salinity

- 2.10. A portable salinometer capable of recording salinity within the range of 0-40 parts per thousand (ppt) was provided for measuring salinity of the water at each monitoring location.

### Water Depth Detector

- 2.11. A portable, battery-operated and hand held echo sounder was used for the determination of water depth at each designated monitoring station.

### pH

- 2.12. The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

### Water Sampling for Laboratory Analysis

- 2.13. A water sampler, consisting of a transparent Polyvinyl Chloride (PVC) of a capacity of not less than two litres which can be effectively sealed with cups at both ends was used. The water sampler had a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth. In addition, a

sampling cup attached to a fixed or extendable rod was also used for sampling at the monitoring stations with swallow water.

#### Sample Container and Storage

- 2.14. Following collection, water samples for laboratory analysis were stored in high density polyethylene bottles with appropriate preservatives added, packed in the ice (cooled to 4°C without being frozen). The sample were delivered to WELLAB Limited (HOKLAS Registration No.083) and analysed as soon as possible after collection of the water samples. Sufficient volume of samples was collected to achieve the detection limit.

#### Calibration of In Situ Instruments

- 2.15. The pH meter, DO meter and turbidimeter were checked and calibrated before use. DO meter and turbidimeter were certified by WELLAB Limited (HOKLAS Registration No.083) before use and subsequently re-calibrated at quarterly basis throughout all stage of water quality monitoring programme. Response of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring station.
- 2.16. For the on-site calibration of field equipment (Multi-parameter Water Quality System), the BS 1427:2009, “Guide to on-site test methods for analysis of waters” was observed.

#### Back-up Equipment

- 2.17. Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.
- 2.18. **Table 2.2** summarizes the equipment used in the water quality monitoring program. The copies of the calibration certificates of multi-parameter water quality system are shown in the **Appendix A**.

**Table 2.2 Water Quality Monitoring Equipment**

<b>Equipment</b>	<b>Model and Make</b>	<b>Oty.</b>
Water sampler and sampling cup	A 2-Litre transparent PVC cylinder with latex cups at both ends and sampling cup for monitoring stations with swallow water	1
Sonar Water Depth Detector	Garmin Striker plus 4	1
Multi-parameter Water Quality System	YSI EXO 1	1

#### **Monitoring Parameters and Frequency**

- 2.19. **Table 2.3** summarizes the monitoring parameters and frequencies of the water quality monitoring.

**Table 2.3 Water Quality Monitoring Parameters and Frequency**

Monitoring Station(s)		Parameters, unit	Depth	Frequency
River Beas	SYR-CS1 SYR-IS1	<ul style="list-style-type: none"> <li>• Temperature (°C)</li> <li>• pH (pH unit)</li> <li>• Turbidity (NTU)</li> <li>• Water depth (m)</li> <li>• Salinity (ppt)</li> <li>• Dissolved Oxygen (DO) (mg/L and % of saturation)</li> <li>• Suspended Solid (SS) (mg/L)</li> <li>• Arsenic (As) (µg/L)</li> </ul>	<ul style="list-style-type: none"> <li>• 3 water depths: 1m below water surface, mid-depth and 1m above river bed.</li> <li>• If the water depth was less than 3m, mid-depth sampling only.</li> <li>• If water depth was less than 6m, mid-depth might be omitted.</li> </ul>	3 days per week, for 2 weeks prior to the commencement of construction works
River Indus and near Siu Hang San Tsuen Stream	NTR-CS1 NTR-IS1 SHST-IS2 MWR-IS3	<ul style="list-style-type: none"> <li>• Temperature (°C)</li> <li>• pH (pH unit)</li> <li>• Turbidity (NTU)</li> <li>• Water depth (m)</li> <li>• Salinity (ppt)</li> <li>• Dissolved Oxygen (DO) (mg/L and % of saturation)</li> <li>• Suspended Solid (SS) (mg/L)</li> </ul>		

2.20. Monitoring location and position, time, sampling depth, weather conditions and any special phenomena or work underway nearby was also be recorded.

### Monitoring Methodology

#### Instrumentation

2.21. A multi-parameter meters (Model EXO 1) were used to measure DO, turbidity, salinity, pH and temperature.

#### Operating/Analytical Procedures

2.22. At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

### Laboratory Analytical Methods

2.23. Duplicate samples from each independent sampling event are required for all parameter. Analysis of suspended solids and arsenic were carried out by WELLAB Ltd. (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure the quality and consistency in results. The reporting limit and detection limit are provided in **Table 2.4**.

**Table 2.4 Method for Laboratory Analysis for Water Samples**

Determinant	Proposed Method	Limit of Reporting
Total Suspend Solids (SS)	APHA 17ed 2540 D	2.5 mg/L
Arsenic (As)	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

**QA/QC Requirements**Decontamination Procedures

- 2.24. Water sampling equipment used during the course of the monitoring process was decontaminated by manual washing and rinsed with distilled water after each sampling event. All of the disposal equipment was discarded after the sampling.

Sampling Management and Supervision

- 2.25. All sampling bottles were labelled with the sample I.D (Including the sampling station and tidal condition), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible. All the collected samples were stored in a cool box to keep the temperature less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

Quality Control Measures for Sample Testing

- 2.26. The samples testing was conducted by WELLAB Ltd. (HOKLAS Registration No.083). The following quality control programme was performed by the laboratories for every batch of 20 samples:
- One method blank; and
  - One set of quality control (QC) samples (including method QC and sample duplicate).
- 2.27. QA/QC procedures as attached in **Appendix D** are available for the samples analyzed in the HOKLAS accredited laboratory.



### **3. ADDITIONAL BASELINE WATER QUALITY MONITORING RESULTS AND OBSERVATIONS**

#### **Results**

- 3.1. Baseline water quality monitoring at six monitoring stations was conducted in the period between 6<sup>th</sup> January 2021 and 18<sup>th</sup> January 2021. The monitoring results are shown in **Appendix B1**. Graphical presentation of water quality at the monitoring stations is given in **Appendix B2**.
- 3.2. Laboratory Testing Reports and QA/QC procedures as attached in **Appendix C and Appendix D** are available for the laboratory analysis in the HOKLAS-accredited laboratory, WELLAB Limited.
- 3.3. Detailed weather conditions at the monitoring locations during the baseline monitoring period and schedules are shown in **Appendix E and Appendix F** respectively.
- 3.4. The results of DO, SS, turbidity and arsenic are summarized in **Table 3.1** respectively, which show the average and ranges of readings recorded.

**Table 3.1 Summary of Baseline Water Quality Monitoring Results**

Station(s)			DO (mg/L)			Turbidity (NTU)			SS (mg/L)			Arsenic (µg/L )		
			Mean	Max.	Min.	Mean	Max.	Min.	Mean	Max.	Min.	Mean	Max.	Min.
River Beas	SYR-CS1	Surface	-	-	-	-	-	-	-	-	-	-	-	-
		Middle	6.2	8.4	2.8	5.8	12.4	3.7	9.9	13.5	8.0	5.7	6.0	5.0
		Bottom	-	-	-	-	-	-	-	-	-	-	-	-
	SYR-IS1	Surface	-	-	-	-	-	-	-	-	-	-	-	-
		Middle	6.9	8.2	6.0	29.4	51.6	11.2	44.3	85.0	17.0	4.1	5.5	2.0
		Bottom	-	-	-	-	-	-	-	-	-	-	-	-
River Indus and near Siu Hang San Tsuen Stream	NTR-CS1	Surface	-	-	-	-	-	-	-	-	-	^	^	^
		Middle	8.4	9.2	7.3	3.7	5.0	3.1	10.6	23.5	5.5	^	^	^
		Bottom	-	-	-	-	-	-	-	-	-	^	^	^
	NTR-IS1	Surface	-	-	-	-	-	-	-	-	-	^	^	^
		Middle	6.7	8.3	5.7	4.6	6.1	3.3	6.9	9.0	5.5	^	^	^
		Bottom	-	-	-	-	-	-	-	-	-	^	^	^
	SHST-IS2	Surface	-	-	-	-	-	-	-	-	-	^	^	^
		Middle	8.0	8.7	6.8	3.3	4.8	2.1	3.2	4.0	<2.5	^	^	^
		Bottom	-	-	-	-	-	-	-	-	-	^	^	^
	MWR-IS3	Surface	-	-	-	-	-	-	-	-	-	^	^	^
		Middle	9.3	9.8	8.5	6.1	11.3	2.9	9.7	14.5	5.5	^	^	^
		Bottom	-	-	-	-	-	-	-	-	-	^	^	^

Notes:

1. “--” means the water depth less than 3m in depth, only the mid depth sample was taken.
2. “^” means no arsenic testing is required for the monitoring stations
3. Values are expressed as arithmetic mean, unless all samples were below LOR. For samples that are below LOR, the value is substituted with LOR to allow for calculation.

## Observations

- 3.5. During the baseline monitoring period, the weather conditions were mainly sunny and cloudy. No water-based construction works in the area (vicinity of all monitoring stations) was noted. There was no observable pollution source due to any works identified in the vicinity of all monitoring stations during the baseline monitoring programme. Therefore, the baseline monitoring results were considered representative of the ambient water quality levels.

## Review of Baseline Water Quality Monitoring Data

- 3.6. The baseline water quality monitoring was conducted at six monitoring stations. Monitoring was conducted to monitor the water depth, pH, DO, turbidity, SS, salinity, temperature and arsenic. Summary of the control stations corresponding to the relevant impact stations are shown in **Table 3.2**.

**Table 3.2** Summary of Control Stations corresponding to the Relevant Impact Stations

Locations	Control Station(s)	Impact Station(s)
River Beas	SYR-CS1 (Control Station at upstream of River Beas)	SYR-IS1 (Impact Stations at downstream of River Beas)
River Indus and near Siu Hang San Tsuen Stream	NTR-CS1 (Control Station at upstream of River Indus)	NTR-IS1 (Impact Station at downstream of River Indus), SHST-IS2 (Impact Station at water sensitive receiver at near Siu Hang San Tsuen Stream), MWR-IS3 (Impact Station at water sensitive receiver at near Ma Wat River)

- 3.7. All monitoring results at 6 water quality monitoring stations (i.e. SYR-CS1, SYR-IS1, NTR-CS1, NTR-IS1, SHST-IS2 and MWR-IS3) are shown in **Appendix B1 & C** and summarised in **Table 3.1**. With reference to the summary of monitoring results and graphical presentation in **Appendix B2**, the collected data is considered as stable. The two-week collected data is representative of the baseline condition at River Beas and River Indus and near Siu Hang San Tsuen Stream.
- 3.8. After reviewing the baseline water quality monitoring results, the measured turbidity and SS levels at control station, SYR-CS1, are much lower than those at the impact station, SYR-IS1. According to the requirement of AL levels for turbidity and SS set out in the updated EM&A Manual, which are summarised in **Table 3.3**, non-compliance of turbidity and SS would occur when monitoring result at impact stations was larger than the AL Level (i.e. Action Level: 95 percentile of baseline data or 120% of upstream control station / Limit Level (Turbidity): 99 percentile of baseline data or 130% of upstream control station / Limit Level (SS): 20 mg/L or 99 percentile of baseline data or 130% of upstream control station).

**Table 3.3 Guidelines for Establishment of Action and Limit Levels**

Parameters	Action Level	Limit Level
DO in mg/L (depth average) <sup>[1]</sup>	5 percentile of baseline data <sup>[2]</sup>	4 mg/L or 1 percentile of baseline data <sup>[2]</sup>
SS in mg/L (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station <sup>[3]</sup>	20 mg/L or 99 percentile of baseline data or 130% of upstream control station <sup>[3]</sup>
Turbidity in NTU (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station <sup>[3]</sup>	99 percentile of baseline data or 130% of upstream control station <sup>[3]</sup>
Arsenic in µg/L (depth average) <sup>[2]</sup>	95 percentile of baseline data or 120% of upstream control station <sup>[3]</sup>	50 µg/L <sup>[4]</sup>

Remarks:

[1] "Depth-averaged" is calculated by taking the arithmetic mean of reading of all three depths.

[2] For DO, non-compliance occurs when monitoring results is lower than the limits.

[3] For turbidity, SS and arsenic, non-compliance occurs when monitoring results is larger than the limits.

[4] There is no local criterion for heavy metal. Limit Level of heavy metal is adopted from Category III Surface Water Quality Standards (GB3838-2002) (地表水環境質量標準), which applicable for Shenzhen River on mainland side.

**River Beas**

- 3.9. The measured turbidity and SS levels at impact stations (SYR-IS1) had already been recorded much higher than that at control station (SYR-CS1) during the baseline monitoring period, invalid exceedance records would be anticipated during the impact water quality monitoring programme if impact water quality monitoring results at SYR-IS1 were compared with the AL levels derived from the Control Station (120% and 130% of upstream control station's SS/Turbidity). In order to study the water quality impact caused by construction works under the Contract, it was proposed AL Levels to be derived from baseline data only for SYR-IS1 to determine the valid exceedance of water quality criteria.

**River Indus and near Siu Hang San Tsuen Stream**

- 3.10. Separate Action and Limit Level are recommended for DO, turbidity and SS for individual impact monitoring stations in River Indus and near Siu Hang San Tsuen Stream. Seasonal change and weather condition should be taken into account during impact monitoring. Both 95 percentile of baseline data and the AL Levels derived from the Control Station (120% and 130% of upstream control station's SS/Turbidity) should be used for compliance checking.
- 3.11. The AL Levels are proposed to be derived from the baseline data collected and the proposed AL Levels are summarised in **Table 3.4**.

**Table 3.4 Proposed Action and Limit Levels for Water Quality Monitoring**

Parameters	Action Level	Limit Level
<b>River Beas (SYR-IS1)</b>		
DO in mg/L (depth average) <sup>[1]</sup>	5 percentile of baseline data <sup>[2]</sup>	4 mg/L or 1 percentile of baseline data <sup>[2]</sup>
SS in mg/L (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station, whichever is higher <sup>[3]</sup>	20 mg/L or 99 percentile of baseline data or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Turbidity in NTU (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station, whichever is higher <sup>[3]</sup>	99 percentile of baseline data or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Arsenic in µg/L (depth average) <sup>[2]</sup>	95 percentile of baseline data or 120% of upstream control station, whichever is higher <sup>[3]</sup>	50 µg/L <sup>[4]</sup>
<b>River Indus and near Siu Hang San Tsuen Stream (NTR-IS1, SHST-IS2, MWR-IS3)</b>		
DO in mg/L (depth average) <sup>[1]</sup>	5 percentile of baseline data <sup>[2]</sup>	4 mg/L or 1 percentile of baseline data <sup>[2]</sup>
SS in mg/L (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station, whichever is higher <sup>[3]</sup>	20 mg/L or 99 percentile of baseline data or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Turbidity in NTU (depth average) <sup>[1]</sup>	95 percentile of baseline data or 120% of upstream control station, whichever is higher <sup>[3]</sup>	99 percentile of baseline data or 130% of upstream control station, whichever is higher <sup>[3]</sup>

Remarks:

[1] "Depth-averaged" is calculated by taking the arithmetic mean of reading of all three depths.

[2] For DO, non-compliance occurs when monitoring results is lower than the limits.

[3] For turbidity, SS and arsenic, non-compliance occurs when monitoring results is larger than the limits.

[4] There is no local criterion for heavy metal. Limit Level of heavy metal is adopted from Category III Surface Water Quality Standards (GB3838-2002) (地表水環境質量標準), which applicable for Shenzhen River on mainland side.

- 3.12. The calculated Action and Limit Levels for each water quality monitoring stations derived from the baseline water quality monitoring data are shown in **Table 3.5**.

**Table 3.5 Calculated Action and Limit Levels for Water Quality Monitoring**

Parameters	Action Level	Limit Level
<b>River Beas (SYR-IS1)</b>		
DO in mg/L (depth average) <sup>[1]</sup>	SYR-IS1: <u>6.1</u> <sup>[2]</sup>	SYR-IS1: <u>6.0</u> <sup>[2]</sup>
SS in mg/L (depth average) <sup>[1]</sup>	SYR-IS1: <u>75.6</u> or 120% of upstream control station, whichever is higher <sup>[3]</sup>	SYR-IS1: <u>83.1</u> or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Turbidity in NTU (depth average) <sup>[1]</sup>	SYR-IS1: <u>48.2</u> or 120% of upstream control station, whichever is higher <sup>[3]</sup>	SYR-IS1: <u>50.9</u> or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Arsenic in µg/L (depth average) <sup>[2]</sup>	SYR-IS1: <u>5.4</u> or 120% of upstream control station, whichever is higher <sup>[3]</sup>	SYR-IS1: 50 µg/L <sup>[4]</sup>
<b>River Indus and near Siu Hang San Tsuen Stream (NTR-IS1, SHST-IS2, MWR-IS3)</b>		
DO in mg/L (depth average) <sup>[1]</sup>	NTR-IS1: <u>5.8</u> <sup>[2]</sup> SHST-IS2: <u>7.0</u> <sup>[2]</sup> MWR-IS3: <u>8.6</u> <sup>[2]</sup>	NTR-IS1: <u>5.7</u> <sup>[2]</sup> SHST-IS2: <u>6.8</u> <sup>[2]</sup> MWR-IS3: <u>8.5</u> <sup>[2]</sup>
SS in mg/L (depth average) <sup>[1]</sup>	NTR-IS1: <u>8.9</u> SHST-IS2: <u>4.0</u> MWR-IS3: <u>14.0</u> or 120% of upstream control station, whichever is higher <sup>[3]</sup>	NTR-IS1: <u>9.0</u> SHST-IS2: <u>4.0</u> MWR-IS3: <u>14.4</u> or 130% of upstream control station, whichever is higher <sup>[3]</sup>
Turbidity in NTU (depth average) <sup>[1]</sup>	NTR-IS1: <u>6.0</u> SHST-IS2: <u>4.4</u> MWR-IS3: <u>10.1</u> or 120% of upstream control station, whichever is higher <sup>[3]</sup>	NTR-IS1: <u>6.1</u> SHST-IS2: <u>4.7</u> MWR-IS3: <u>11.1</u> or 130% of upstream control station, whichever is higher <sup>[3]</sup>

Remarks:

[1] "Depth-averaged" is calculated by taking the arithmetic mean of reading of all three depths.

[2] For DO, non-compliance occurs when monitoring results is lower than the limits.

[3] For turbidity, SS and arsenic, non-compliance occurs when monitoring results is larger than the limits.

[4] There is no local criterion for heavy metal. Limit Level of heavy metal is adopted from Category III Surface Water Quality Standards (GB3838-2002) (地表水環境質量標準), which applicable for Shenzhen River on mainland side.

**Event and Action Plan for Impact Water Quality Monitoring**

- 3.13. If the impact water quality monitoring results at any impact monitoring stations indicate that Action and Limit Levels for any of parameters are exceeded, the ET will carry out actions in accordance with the Event and Action Plan provided in **Appendix G**.

#### **4. CONCLUSIONS**

- 4.1. The additional baseline water quality monitoring was conducted at six designated monitoring stations (SYR-CS1, SYR-IS1, NTR-CS1, NTR-IS1, SHST-IS2, MWR-IS3) from 6<sup>th</sup> January 2021 to 18<sup>th</sup> January 2021. The monitoring results were used to establish the Action and Limit Levels for the relevant parameters during impact/compliance monitoring and also post-project monitoring during related construction work of the Project.
- 4.2. No observable pollution source due to the works was observed at the monitoring stations. Since no observable pollution activity was identified for all stations during monitoring period, the baseline monitoring results are considered representative of the ambient water quality levels for the Project.

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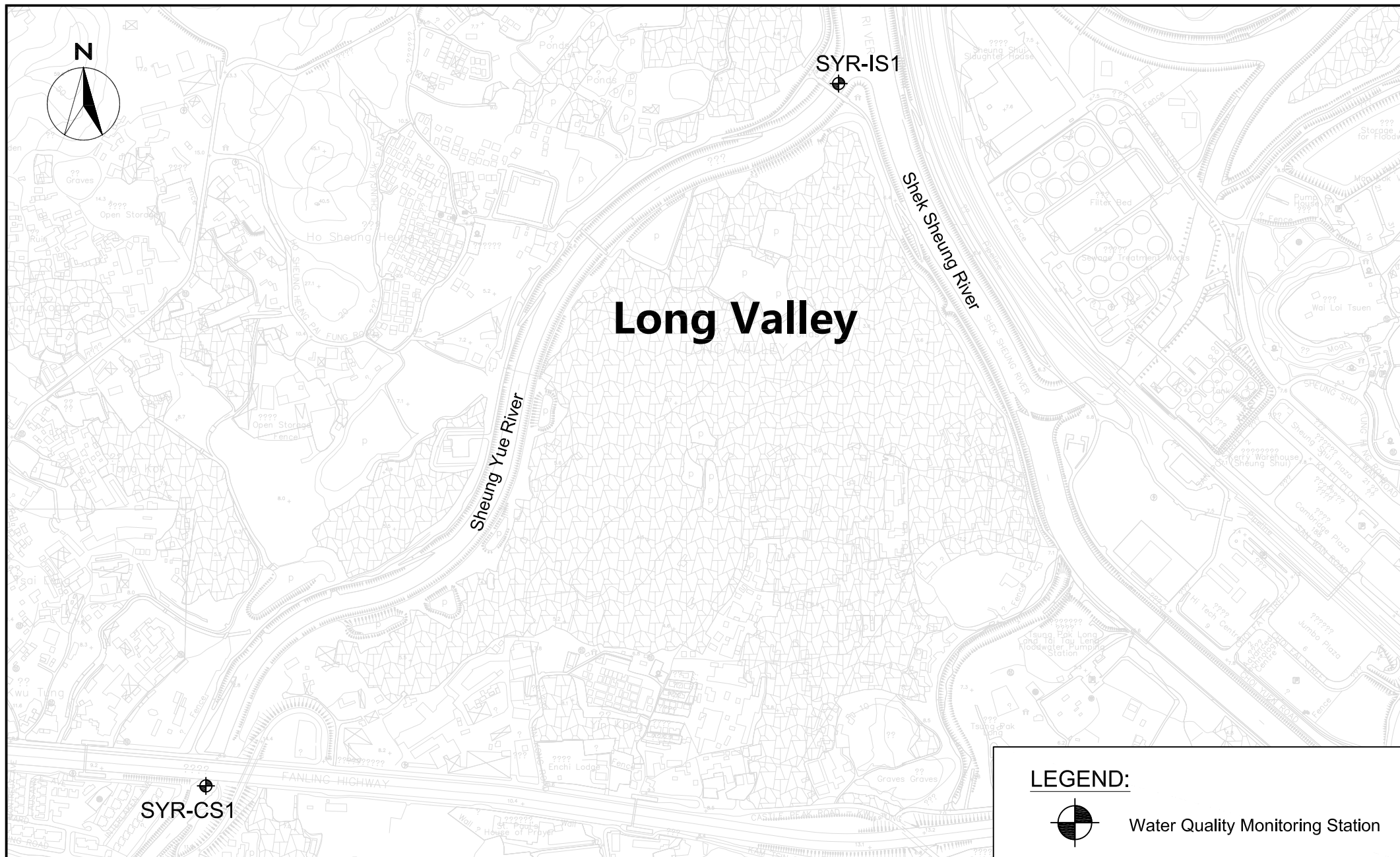
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## FIGURES

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# LEGEND:



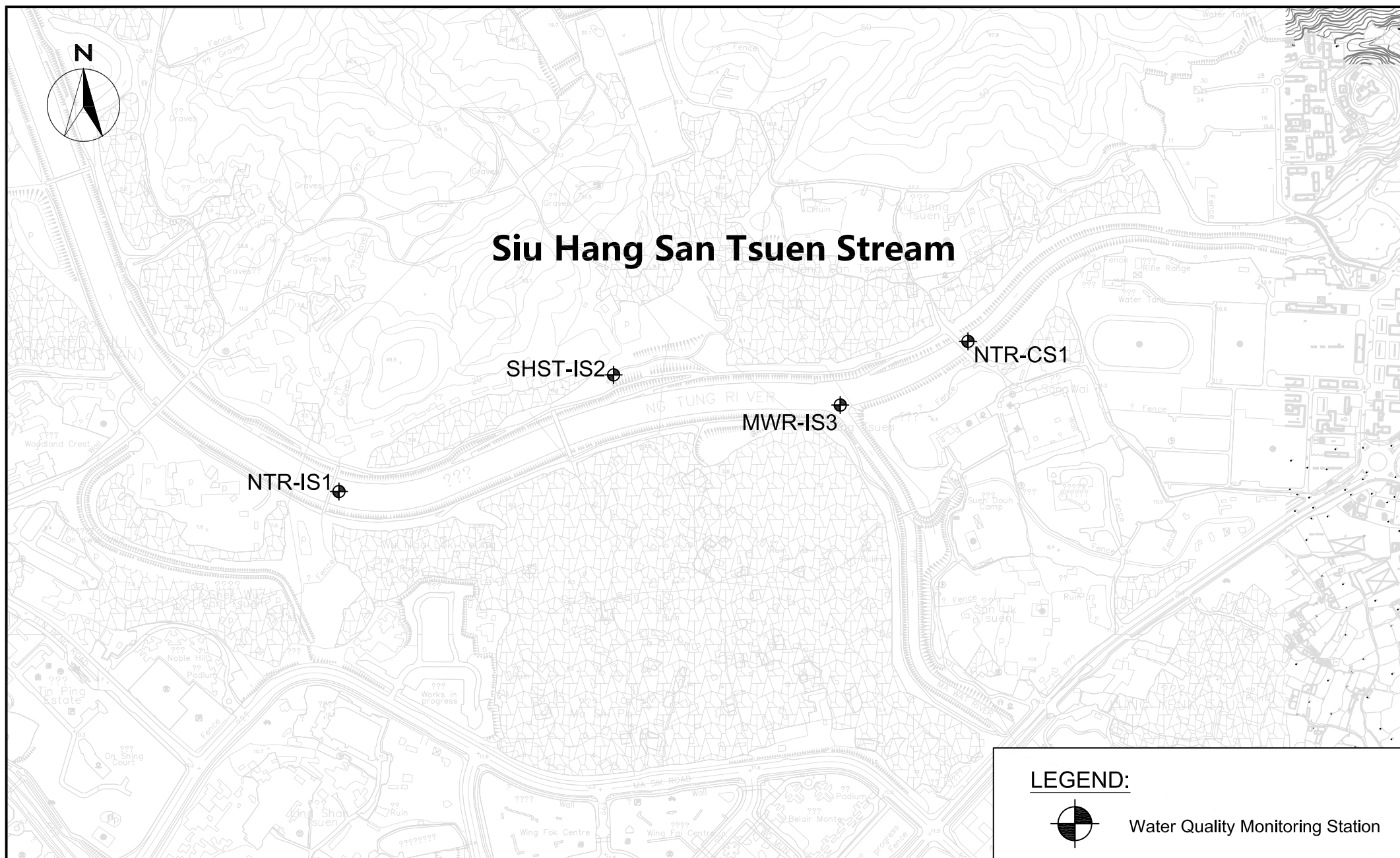
Water Quality Monitoring Station

**WELLAB 匯力**  
consulting . testing . research

Service Contract No. NDO 04/2019 Environmental Team for EM&A Works in Construction  
Phase for the First Phase Development of KTN and FLN NDAs

## Location of Additional Water Quality Monitoring Stations at River Beas

SCALE	A4 @ 1:20000	DATE	FEB 2021
CHECK	KL	DRAWN	NL
PROJECT No.	WMA20002	FIGURE NO.	1
		REV	—



# LEGEND:



Water Quality Monitoring Station

SCALE	A4 @ 1:20000	DATE	FEB 2021
CHECK	KL	DRAWN	NL
PROJECT No.	WMA20002	FIGURE NO.	2
		REV	—

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**APPENDIX A  
CALIBRATION CERTIFICATE OF  
MULTI-PARAMETER WATER QUALITY  
SYSTEM**

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## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A)  
RM 1808, Technology Park,  
18 On Lai Street,  
Shatin, N.T., Hong Kong

Test Report No.: 34222B  
Date of Issue: 2020-10-21  
Date Received: 2020-10-19  
Date Tested: 2020-10-19 to  
2020-10-21  
Date Completed: 2020-10-21

**ATTN:** Miss Mei Ling Tang

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

YSI EXO1 Multiparameter Sondes	Equipment No.: SW-08-149	
Manufacturer:	YSI Incorporated, a Xylem brand	
Description:	Model No.	Serial No.
- EXO1 Sonde, 100 meter Depth, 4 Sensor ports	599502-24	17B103704
- EXO Optical DO Sensor, Ti	599100-01	17B102236
- EXO conductivity/Temperature Sensor, Ti	599870	17B102032
- EXO Turbidity Sensor, Ti	599101-01	17B102279
- EXO pH Sensor Assembly, Guarded, Ti	599701	17B103656

**Test conditions:**

Room Temperature : 17-22 degree Celsius  
Relative Humidity : 40-70%

**Test Specifications:**

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.)  
and Turbidity

**Methodology:**

According to manufacturer instruction manual, APHA 20e 4500-O C

\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
General Manager



## TEST REPORT

Test Report No.:	34222B
Date of Issue:	2020-10-21
Date Received:	2020-10-19
Date Tested:	2020-10-19 to 2020-10-21
Date Completed:	2020-10-21

Page: 2 of 2

### Certificate of Calibration

#### Results:

#### Conductivity performance checking

	Instrument Readings ( $\mu\text{S}/\text{cm}$ )	Acceptance Criteria	Comment
KCl stock solution (12890 $\mu\text{S}/\text{cm}$ )	13000	12246-13534	Pass

#### Temperature performance checking

Reference thermometer- E431 Readings ( $^{\circ}\text{C}$ )	Instrument Readings ( $^{\circ}\text{C}$ )	Correction ( $^{\circ}\text{C}$ )	Comment
20.0	20.001	-0.001	N/A

#### pH performance checking

	Instrument Readings (pH unit)	Acceptance Criteria	Comment
pH QC buffer 4.00	4.02	$4.00 \pm 0.10$	Pass
pH QC buffer 6.86	6.89	$6.86 \pm 0.10$	Pass
pH QC buffer 9.18	9.18	$9.18 \pm 0.10$	Pass

#### D.O. performance checking

	Instrument Readings (mg/L)	Acceptance Criteria	Comment
Zero DO solution	0.08	$<0.1\text{mg/L}$	Pass

Winkler Titration value (mg/L)	Instrument Readings (mg/L)	Acceptance Criteria	Comment
8.01	8.02	Difference between Titration value and instrument reading $<0.2\text{mg/L}$	Pass

#### Turbidity performance checking

Turbidity stock solution	Instrument Readings (NTU)	Acceptance Criteria	Comment
10 NTU	10.04	9.0-11.0	Pass
50 NTU	51.00	45.0-55.0	Pass
100 NTU	100.6	90.0-110.0	Pass

#### Depth performance checking

Water Depth	Instrument Readings (m)	Acceptance Criteria	Comment
0.5 meter	0.50	0.45-0.55	Pass

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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**APPENDIX B1  
ADDITIONAL BASELINE WATER  
QUALITY MONITORING RESULTS**

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Contract No. NDO 04/2019

Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas

Water Quality Monitoring Results

Location: SYR-CS1

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	14:41	Middle	0.1	19.4	19.4	8.9	8.9	0.2	0.2	72.0	71.9	6.6	6.6	3.8	3.9	8	8.0	6	6.0
					19.4		8.8		0.2		71.8		6.6		3.9		8		6	
8-Jan-21	Cloudy	14:16	Middle	0.1	14.3	14.3	7.0	7.0	0.1	0.1	82.0	82.0	8.4	8.4	4.6	4.6	9	9.0	6	6.0
					14.3		7.0		0.1		81.9		8.4		4.6		9		6	
11-Jan-21	Cloudy	09:40	Middle	0.1	12.8	12.8	6.9	6.9	0.2	0.2	26.6	26.5	2.8	2.8	3.7	3.7	12	11.0	5	5.0
					12.8		6.9		0.2		26.4		2.8		3.6		10		5	
13-Jan-21	Sunny	11:57	Middle	0.1	13.6	13.6	8.0	8.0	0.2	0.2	64.5	63.8	6.7	6.7	4.4	4.4	8	8.5	5	5.5
					13.6		8.0		0.2		63.1		6.6		4.3		9		6	
15-Jan-21	Sunny	12:55	Middle	0.1	17.1	17.1	8.1	8.1	0.2	0.2	64.5	64.5	6.2	6.2	12.3	12.4	9	9.5	5	5.5
					17.1		8.0		0.2		64.4		6.2		12.5		10		6	
18-Jan-21	Sunny	13:19	Middle	0.1	17.2	17.2	9.1	9.1	0.2	0.2	69.9	69.2	6.7	6.7	5.7	5.8	12	13.5	6	6.0
					17.2		9.1		0.2		68.5		6.6		5.8		15		6	

Location: SYR-IS1

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	14:20	Middle	0.1	21.1	21.1	8.3	8.3	0.2	0.2	66.9	66.6	6.0	6.0	51.7	51.6	44	44.0	6	5.5
					21.1		8.3		0.2		66.2		5.9		51.5		44		5	
8-Jan-21	Cloudy	14:34	Middle	0.1	13.8	13.8	6.9	6.9	0.2	0.2	79.1	79.1	8.2	8.2	20.6	20.6	23	25.0	5	5.0
					13.8		6.9		0.2		79.1		8.2		20.5		27		5	
11-Jan-21	Cloudy	09:56	Middle	0.1	12.6	12.6	7.1	7.1	0.2	0.2	59.3	59.3	6.3	6.3	11.3	11.2	18	17.0	4	4.0
					12.6		7.0		0.2		59.2		6.3		11.0		16		4	
13-Jan-21	Sunny	12:13	Middle	0.5	15.2	15.2	7.4	7.4	0.3	0.3	66.2	66.3	6.6	6.7	37.6	37.9	49	47.5	2	2.0
					15.2		7.4		0.3		66.3		6.7		38.1		46		2	
15-Jan-21	Sunny	13:13	Middle	0.4	19.1	19.1	7.6	7.6	0.3	0.3	71.9	71.9	6.7	6.7	29.8	30.6	52	47.5	3	3.0
					19.1		7.6		0.3		71.9		6.6		31.3		43		3	
18-Jan-21	Sunny	13:02	Middle	0.5	17.8	17.8	8.5	8.5	0.2	0.2	79.9	79.9	7.6	7.6	24.7	24.6	85	85.0	5	5.0
					17.8		8.5		0.2		79.8		7.6		24.4		85		5	

Location: NTR-CS1

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	16:34	Middle	0.1	19.3	19.3	8.2	8.2	0.1	0.1	79.5	79.4	7.3	7.3	3.5	3.5	9	8.5	-	-
					19.3		8.2		0.1		79.2		7.3		3.5		8		-	
8-Jan-21	Cloudy	13:12	Middle	0.1	14.8	14.8	6.6	6.6	0.1	0.1	90.4	90.4	9.2	9.2	3.6	3.6	6	6.0	-	-
					14.8		6.6		0.1		90.3		9.2		3.6		6		-	
11-Jan-21	Cloudy	11:12	Middle	0.1	13.7	13.7	7.0	7.0	0.1	0.1	86.6	86.6	9.0	9.0	3.6	3.7	5	5.5	-	-
					13.7		7.0		0.1		86.5		9.0		3.7		6		-	
13-Jan-21	Sunny	11:17	Middle	0.1	13.9	13.9	7.6	7.6	0.1	0.1	88.8	89.1	9.2	9.2	3.0	3.1	23	23.5	-	-
					13.9		7.6		0.1		89.4		9.2		3.1		24		-	
15-Jan-21	Sunny	14:33	Middle	0.1	18.1	18.1	7.5	7.5	0.1	0.1	80.0	80.0	7.6	7.6	5.0	5.0	13	12.0	-	-
					18.1		7.5		0.1		79.9		7.6		5.0		11		-	
18-Jan-21	Sunny	12:34	Middle	0.1	16.9	16.9	8.3	8.3	0.1	0.1	84.5	84.4	8.2	8.2	3.3	3.3	8	8.0	-	-
					16.9		8.3		0.1		84.3		8.2		3.3		8		-	

Contract No. NDO 04/2019

**Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas  
Water Quality Monitoring Results**

**Location: NTR-IS1**

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	15:08	Middle	0.5	19.5	19.5	8.2	8.2	0.2	0.2	66.0	66.0	6.1	6.1	3.8	3.8	6	5.5	-	-
					19.5		8.1		0.2		66.0		6.1		3.8		5		-	
8-Jan-21	Cloudy	13:35	Middle	0.5	13.6	13.6	6.9	6.9	0.1	0.1	79.4	79.3	8.3	8.3	6.1	6.1	7	6.5	-	-
					13.6		6.9		0.1		79.2		8.2		6.0		6		-	
11-Jan-21	Cloudy	10:19	Middle	0.5	13.4	13.4	6.9	6.9	0.1	0.1	66.4	66.4	6.9	6.9	3.2	3.3	6	5.5	-	-
					13.4		6.9		0.1		66.3		6.9		3.3		5		-	
13-Jan-21	Sunny	10:14	Middle	0.2	13.9	13.9	7.6	7.6	0.1	0.1	55.2	55.1	5.7	5.7	5.4	5.5	8	8.5	-	-
					13.9		7.6		0.1		55.0		5.7		5.6		9		-	
15-Jan-21	Sunny	13:46	Middle	0.3	16.8	16.8	7.7	7.7	0.1	0.1	65.0	64.8	6.3	6.3	5.5	5.5	6	6.5	-	-
					16.8		7.7		0.1		64.6		6.3		5.5		7		-	
18-Jan-21	Sunny	11:21	Middle	0.3	16.3	16.4	7.5	7.5	0.1	0.1	69.2	69.1	6.8	6.8	3.3	3.3	8	9.0	-	-
					16.4		7.5		0.1		69.0		6.8		3.2		10		-	

**Location: SHST-IS2**

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	16:04	Middle	0.1	17.8	17.8	9.1	9.1	0.1	0.1	71.9	71.8	6.8	6.8	3.1	3.0	<2.5	2.8	-	-
					17.8		9.1		0.1		71.7		6.8		2.9		3		-	
8-Jan-21	Cloudy	12:52	Middle	0.1	13.0	13.0	7.0	7.0	0.1	0.1	78.1	78.1	8.2	8.2	3.1	3.2	4	4.0	-	-
					13.0		7.0		0.1		78.1		8.2		3.2		4		-	
11-Jan-21	Cloudy	10:57	Middle	0.1	11.5	11.5	7.5	7.5	0.1	0.1	79.1	79.1	8.6	8.6	3.2	3.2	3	2.8	-	-
					11.5		7.5		0.1		79.0		8.6		3.1		<2.5		-	
13-Jan-21	Sunny	10:59	Middle	0.1	11.8	11.8	8.5	8.5	0.1	0.1	80.0	79.9	8.7	8.7	2.1	2.1	<2.5	<2.5	-	-
					11.8		8.5		0.1		79.8		8.6		2.1		<2.5		-	
15-Jan-21	Sunny	14:03	Middle	0.1	15.3	15.3	8.5	8.5	0.1	0.1	82.5	82.4	8.3	8.3	3.3	3.3	4	4.0	-	-
					15.3		8.5		0.1		82.2		8.2		3.3		4		-	
18-Jan-21	Sunny	11:45	Middle	0.1	15.0	15.0	8.1	8.1	0.1	0.1	75.0	75.0	7.6	7.6	4.7	4.8	<2.5	2.8	-	-
					15.0		8.1		0.1		75.0		7.6		4.8		3		-	

**Location: MWR-IS3**

Date	Weather Condition	Start Time	Sampling Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		Arsenic (µg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
6-Jan-21	Cloudy	16:21	Middle	0.1	20.6	20.6	8.4	8.4	0.2	0.2	94.3	94.3	8.5	8.5	11.2	11.3	15	14.5	-	-
					20.6		8.4		0.2		94.3		8.5		11.3		14		-	
8-Jan-21	Cloudy	13:02	Middle	0.1	14.5	14.5	6.6	6.6	0.1	0.1	96.4	96.4	9.8	9.8	5.2	5.2	6	6.0	-	-
					14.5		6.6		0.1		96.4		9.8		5.2		6		-	
11-Jan-21	Cloudy	10:32	Middle	0.1	13.4	13.4	7.0	7.0	0.1	0.1	83.7	83.6	8.7	8.7	4.1	4.2	5	5.5	-	-
					13.4		7.0		0.1		83.5		8.7		4.3		6		-	
13-Jan-21	Sunny	10:34	Middle	0.1	14.2	14.2	7.7	7.7	0.2	0.2	90.6	90.4	9.3	9.3	2.9	2.9	8	8.0	-	-
					14.2		7.7		0.2		90.2		9.3		2.9		8		-	
15-Jan-21	Sunny	14:18	Middle	0.1	20.4	20.4	7.5	7.6	0.2	0.2	107.3	107.6	9.7	9.7	6.2	6.3	13	12.5	-	-
					20.4		7.6		0.2		107.9		9.7		6.3		12		-	
18-Jan-21	Sunny	12:03	Middle	0.1	17.0	17.0	7.9	7.9	0.1	0.1	101.7	101.8	9.8	9.8	6.4	6.4	11	11.5	-	-
					17.0		7.9		0.1		101.9		9.8		6.3		12		-	

Remarks: The reporting limit for laboratory analysis of suspended solids is 2.5 mg/L. For the results below the reporting limit, the SS level will be taken as 2.5 mg/L for the calculation of depth-averaged value.



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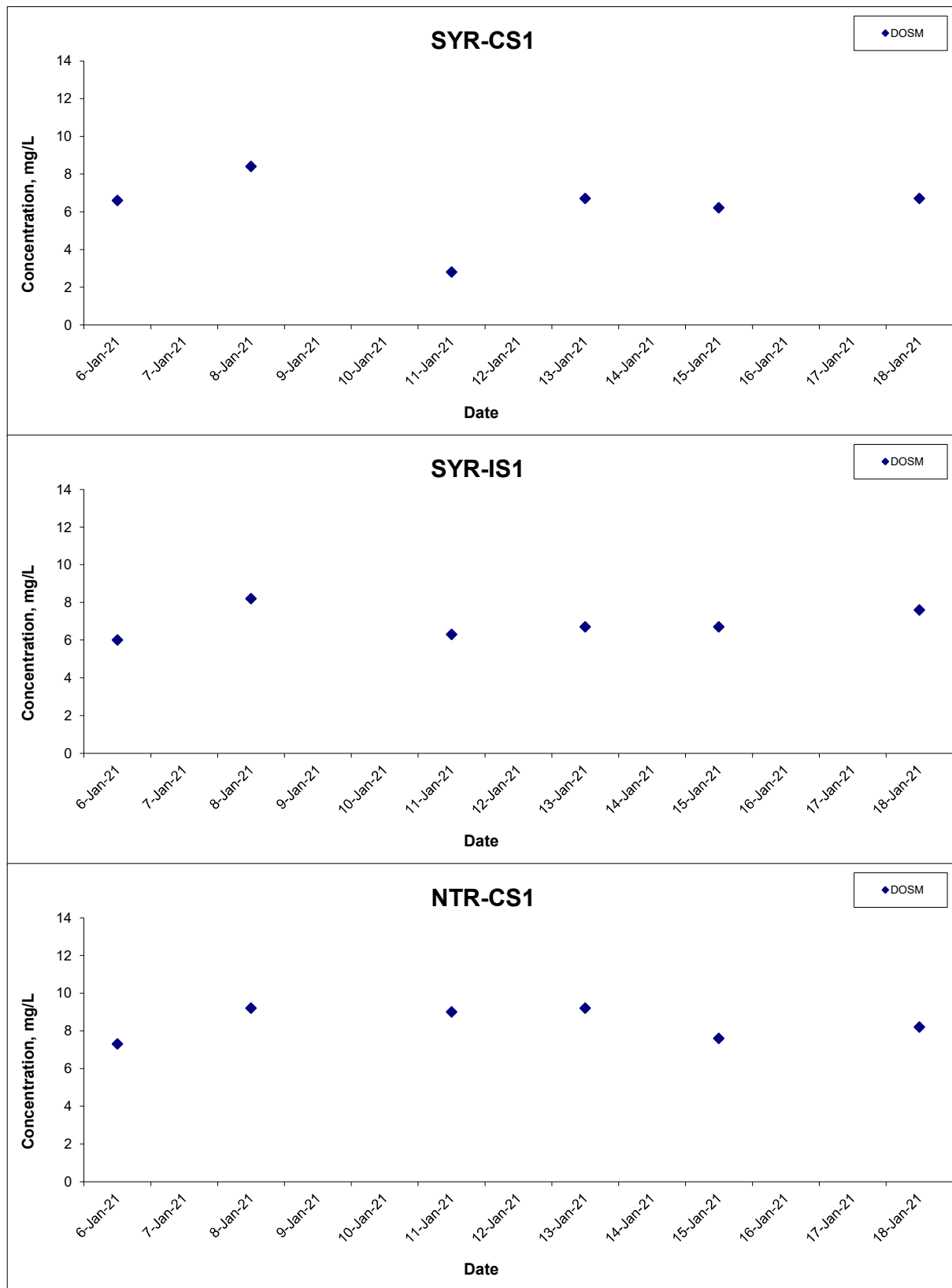
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**APPENDIX B2  
GRAPHICAL PRESENTATION OF  
ADDITIONAL BASELINE WATER  
QUALITY MONITORING DATA**

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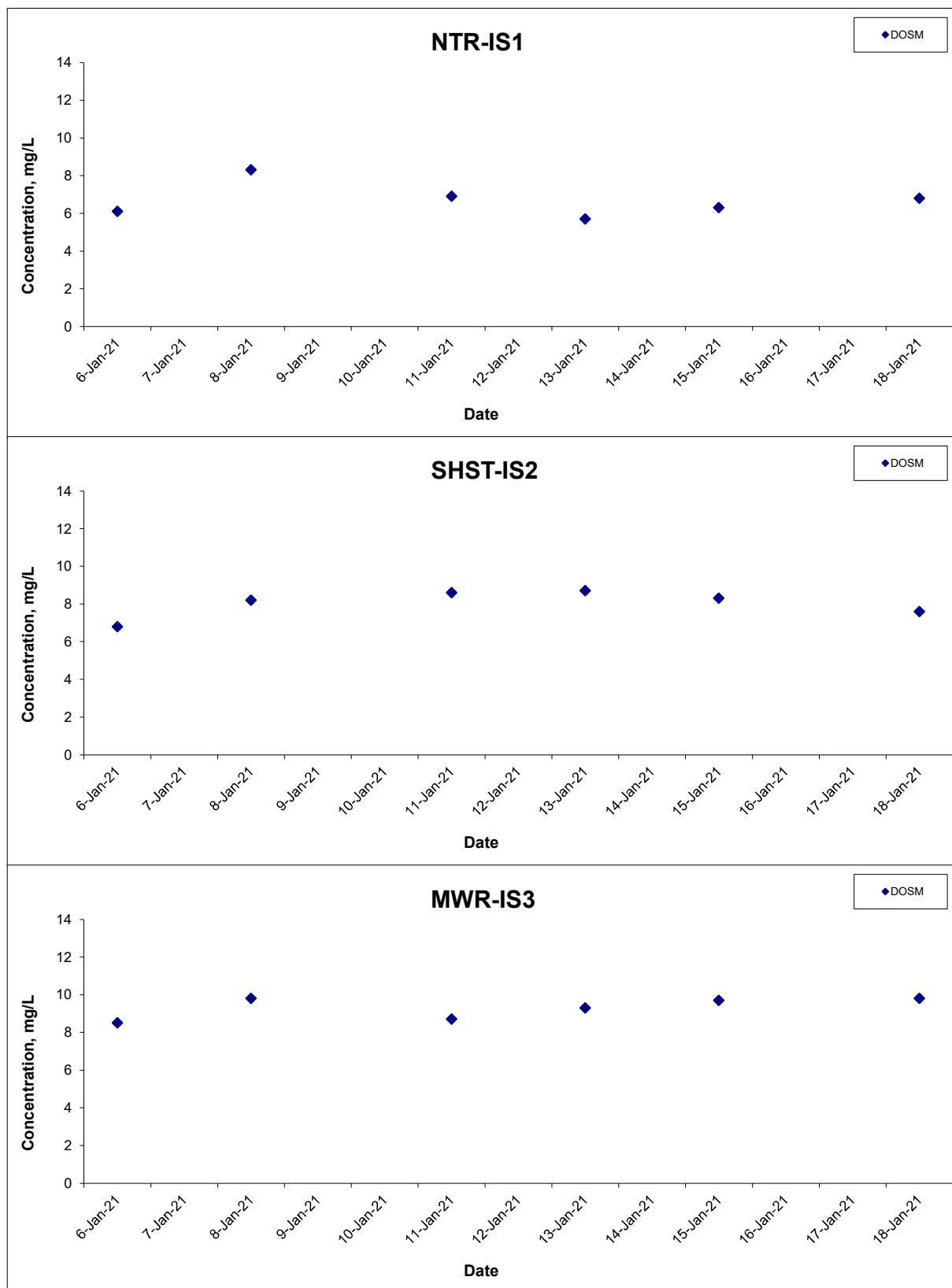
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## Dissolved Oxygen (Middle)



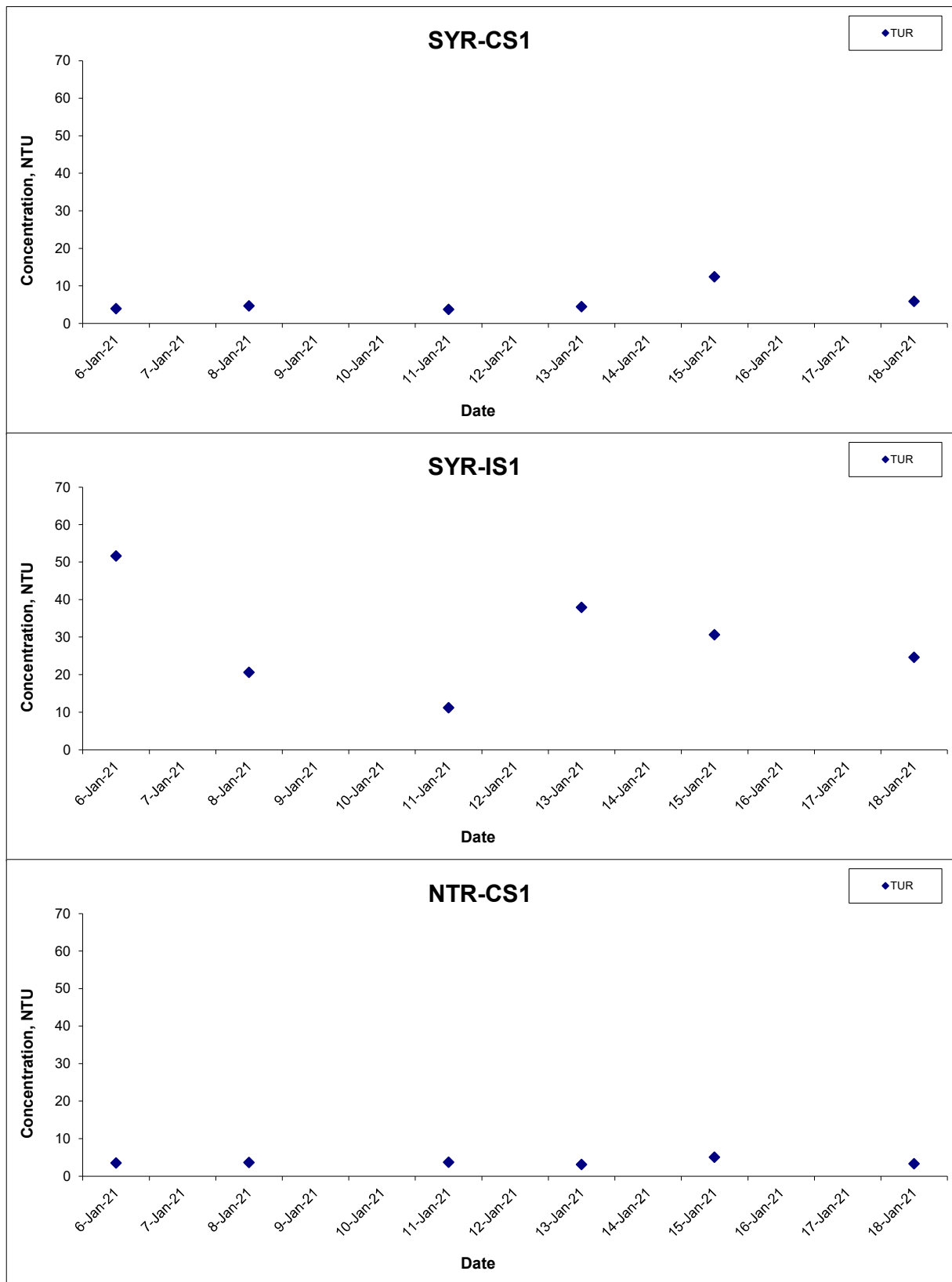
Title	Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas	Scale N.T.S	Project No. WMA20002	
	Graphical Presentation of Water Quality Monitoring Results	Date Jan 21	Appendix B2	


## Dissolved Oxygen (Middle)



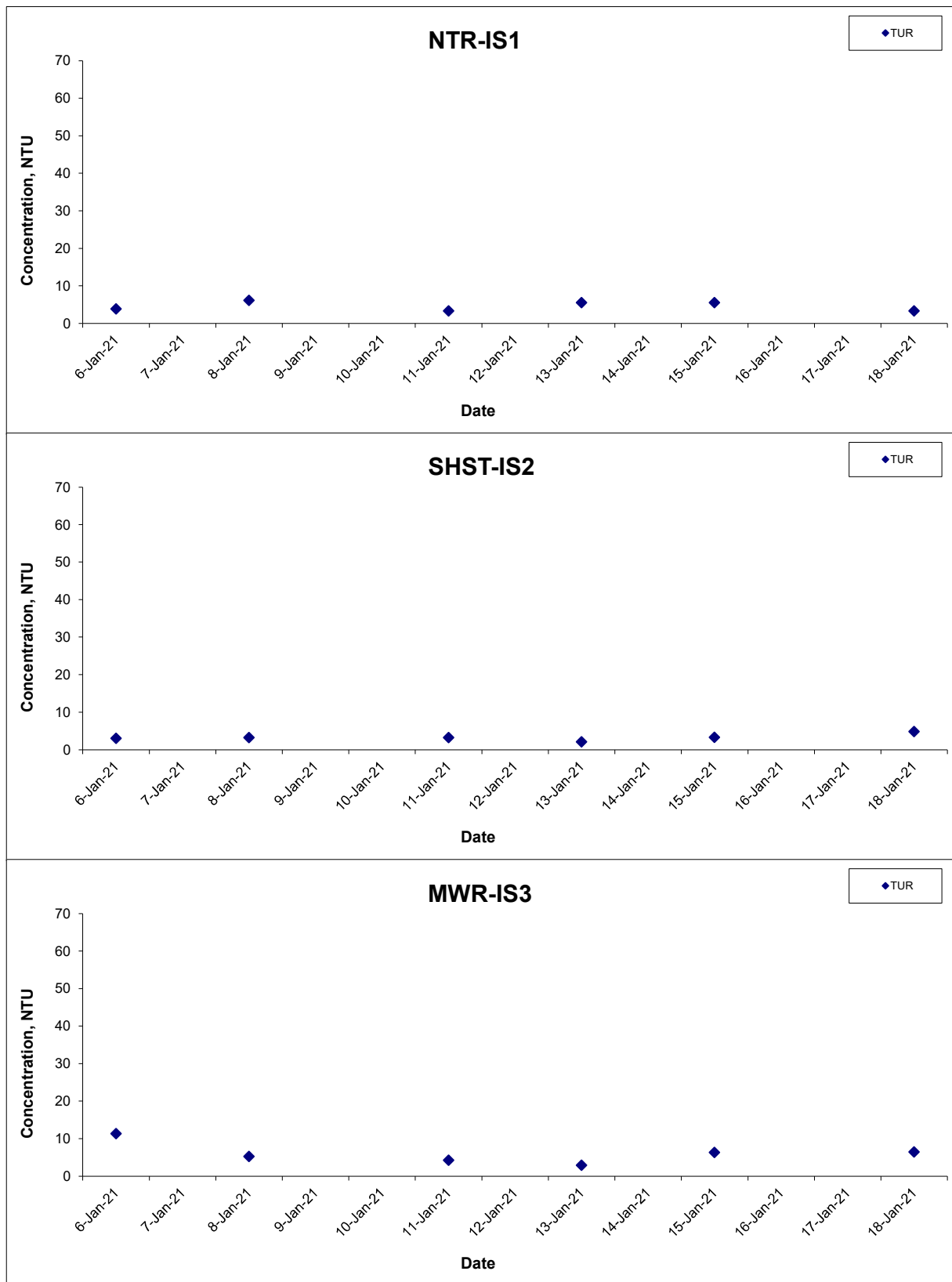
Title	Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas	Scale N.T.S	Project No. WMA20002	
	Graphical Presentation of Water Quality Monitoring Results	Date Jan 21	Appendix B2	


## Turbidity (Depth-averaged)



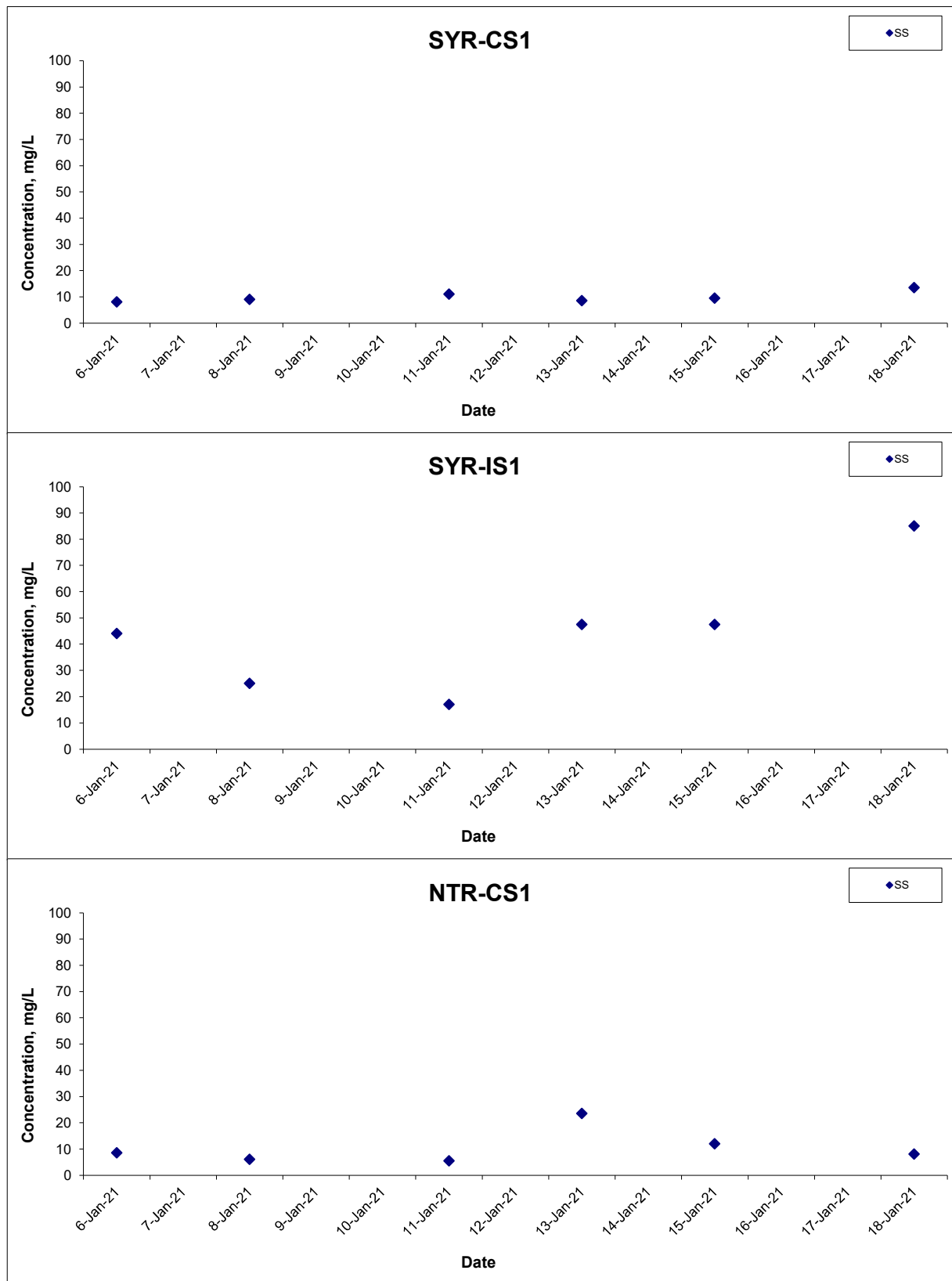
<b>Title</b> Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas  Graphical Presentation of Water Quality Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> WMA20002	 consulting . testing . research
	<b>Date</b> Jan 21	<b>Appendix</b> B2	


## Turbidity (Depth-averaged)



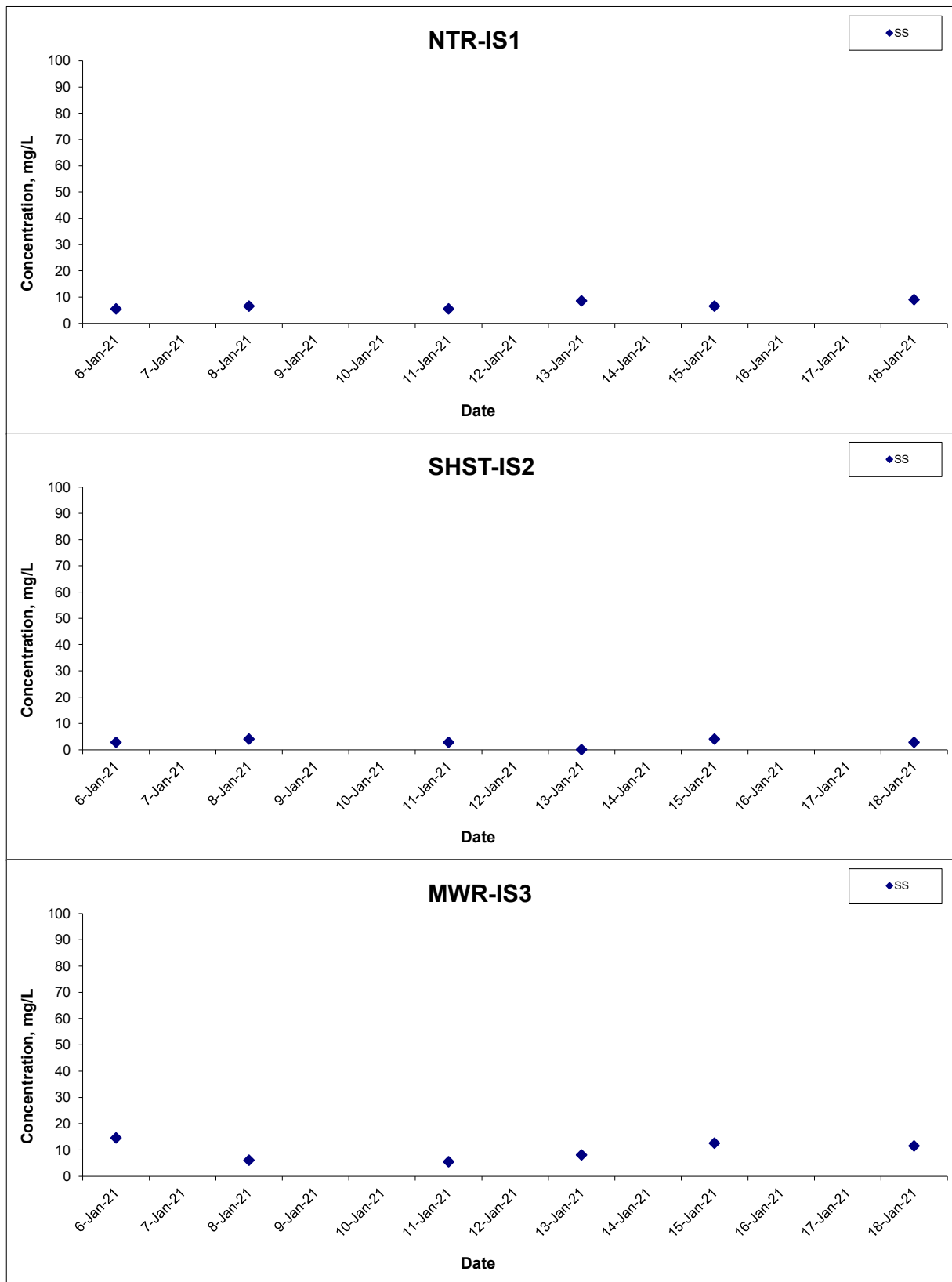
<b>Title</b> Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas  Graphical Presentation of Water Quality Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> WMA20002	 consulting . testing . research
	<b>Date</b> Jan 21	<b>Appendix</b> B2	

## Suspended Solids (Depth-averaged)




<b>Title</b> Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas  Graphical Presentation of Water Quality Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> WMA20002	 consulting . testing . research
	<b>Date</b> Jan 21	<b>Appendix</b> B2	

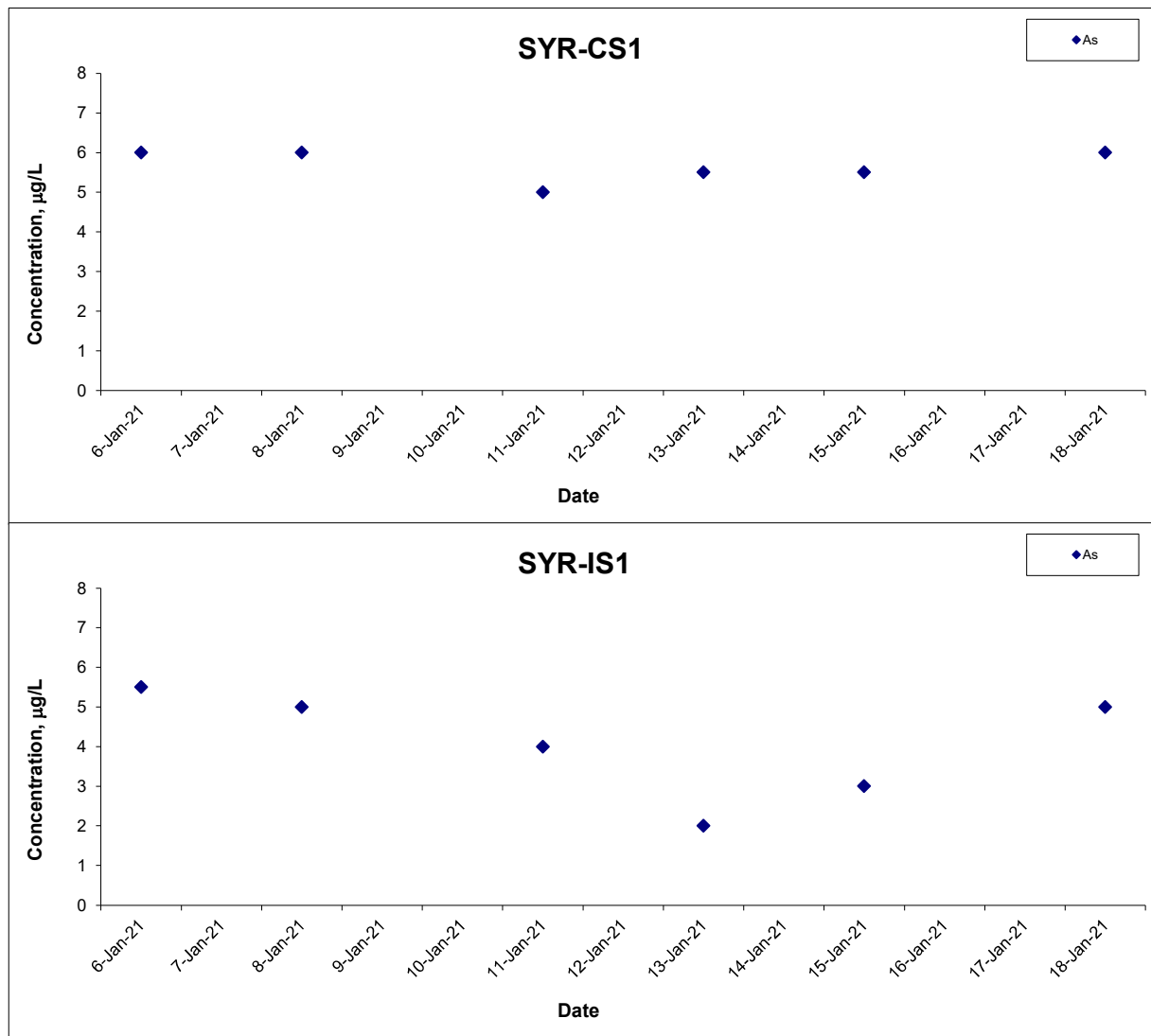
## Suspended Solids (Depth-averaged)



Remarks: The graphical point at zero concentration is presented as <2.5 mg/L

<b>Title</b> Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas  Graphical Presentation of Water Quality Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> WMA20002	 consulting . testing . research
	<b>Date</b> Jan 21	<b>Appendix</b> B2	

## Arsenic (Depth-averaged)



<b>Title</b> Contract No. NDO 04/2019 Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas Graphical Presentation of Water Quality Monitoring Results	<b>Scale</b> N.T.S	<b>Project No.</b> WMA20002	<b>WELLAB 匯力</b> consulting . testing . research
	<b>Date</b> Jan 21	<b>Appendix</b> B2	



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**APPENDIX C**  
**LABORATORY TESTING REPORTS**  
**FOR LABORATORY ANALYSIS**

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## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	34564
Date of Issue:	2021-01-12
Date Received:	2021-01-06
Date Tested:	2021-01-06
Date Completed:	2021-01-12

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description :** 12 liquid samples as received from client said to be water  
**Laboratory No. :** 34564  
**Project No. :** WMA20002  
**Project Name :** Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No. :** WMA20002/210106  
**Sampling Date :** 2021-01-06

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

### Results:

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34564-2	34564-3	34564-5	34564-6
Total Suspended Solids (mg/L)	8	8	44	44
Arsenic (µg/L)	6	6	6	5

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34564-8	34564-9	34564-11	34564-12
Total Suspended Solids (mg/L)	9	8	6	5
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager

## TEST REPORT

Report No.:	34564
Date of Issue:	2021-01-12
Date Received:	2021-01-06
Date Tested:	2021-01-06
Date Completed:	2021-01-12

Page: 2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34564-14	34564-15	34564-17	34564-18
Total Suspended Solids (mg/L)	<2.5	3	15	14
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	34573
Date of Issue:	2021-01-14
Date Received:	2021-01-08
Date Tested:	2021-01-08
Date Completed:	2021-01-14

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description** : 12 liquid samples as received from client said to be water  
**Laboratory No.** : 34573  
**Project No.** : WMA20002  
**Project Name** : Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No.** : WMA20002/210108  
**Sampling Date** : 2021-01-08

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

### Results:

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34573-2	34573-3	34573-5	34573-6
Total Suspended Solids (mg/L)	9	9	23	27
Arsenic (µg/L)	6	6	5	5

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34573-8	34573-9	34573-11	34573-12
Total Suspended Solids (mg/L)	6	6	7	6
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager

## TEST REPORT

Report No.:	34573
Date of Issue:	2021-01-14
Date Received:	2021-01-08
Date Tested:	2021-01-08
Date Completed:	2021-01-14

Page: 2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34573-14	34573-15	34573-17	34573-18
Total Suspended Solids (mg/L)	4	4	6	6
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*



## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	34586
Date of Issue:	2021-01-15
Date Received:	2021-01-11
Date Tested:	2021-01-11
Date Completed:	2021-01-15

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description :** 12 liquid samples as received from client said to be water  
**Laboratory No. :** 34586  
**Project No. :** WMA20002  
**Project Name :** Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No. :** WMA20002/210111  
**Sampling Date :** 2021-01-11

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

### Results:

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34586-2	34586-3	34586-5	34586-6
Total Suspended Solids (mg/L)	12	10	18	16
Arsenic (µg/L)	5	5	4	4

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34586-8	34586-9	34586-11	34586-12
Total Suspended Solids (mg/L)	5	6	6	5
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*  
PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager

## TEST REPORT

Report No.:	34586
Date of Issue:	2021-01-15
Date Received:	2021-01-11
Date Tested:	2021-01-11
Date Completed:	2021-01-15

Page: 2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34586-14	34586-15	34586-17	34586-18
Total Suspended Solids (mg/L)	3	<2.5	5	6
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	34592
Date of Issue:	2021-01-18
Date Received:	2021-01-13
Date Tested:	2021-01-13
Date Completed:	2021-01-18

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description :** 12 liquid samples as received from client said to be water  
**Laboratory No. :** 34592  
**Project No. :** WMA20002  
**Project Name :** Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No. :** WMA20002/210113  
**Sampling Date :** 2021-01-13

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

### Results:

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34592-2	34592-3	34592-5	34592-6
Total Suspended Solids (mg/L)	8	9	49	46
Arsenic (µg/L)	5	6	2	2

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34592-8	34592-9	34592-11	34592-12
Total Suspended Solids (mg/L)	23	24	8	9
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager



## TEST REPORT

Report No.:	34592
Date of Issue:	2021-01-18
Date Received:	2021-01-13
Date Tested:	2021-01-13
Date Completed:	2021-01-18
Page:	2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34592-14	34592-15	34592-17	34592-18
Total Suspended Solids (mg/L)	<2.5	<2.5	8	8
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*

**TEST REPORT**

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.: 34603  
Date of Issue: 2021-01-21  
Date Received: 2021-01-15  
Date Tested: 2021-01-15  
Date Completed: 2021-01-21

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description** : 12 liquid samples as received from client said to be water  
**Laboratory No.** : 34603  
**Project No.** : WMA20002  
**Project Name** : Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No.** : WMA20002/210115  
**Sampling Date** : 2021-01-15

**Tests Requested & Methodology:**

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

**Results:**

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34603-2	34603-3	34603-5	34603-6
Total Suspended Solids (mg/L)	9	10	52	43
Arsenic (µg/L)	5	6	3	3

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34603-8	34603-9	34603-11	34603-12
Total Suspended Solids (mg/L)	13	11	6	7
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*

**PREPARED AND CHECKED BY:**For and On Behalf of **WELLAB Ltd.**  
**PATRICK TSE**  
General Manager

## TEST REPORT

Report No.:	34603
Date of Issue:	2021-01-21
Date Received:	2021-01-15
Date Tested:	2021-01-15
Date Completed:	2021-01-21

Page: 2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34603-14	34603-15	34603-17	34603-18
Total Suspended Solids (mg/L)	4	4	13	12
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	34609
Date of Issue:	2021-01-22
Date Received:	2021-01-18
Date Tested:	2021-01-18
Date Completed:	2021-01-22

**ATTN:** Ms. Ivy Tam

Page: 1 of 2

**Sample Description :** 12 liquid samples as received from client said to be water  
**Laboratory No. :** 34609  
**Project No. :** WMA20002  
**Project Name :** Contract No. NDO 04/2019  
Advance and First Stage Works of Kwu Tung North and Fanling North New  
Development Areas  
**Custody No. :** WMA20002/210115  
**Sampling Date :** 2021-01-18

### Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	Total Suspended Solids	APHA 17ed 2540 D	2.5 mg/L
2	Arsenic	In-house method SOP022 (ICP-AES) and SOP076 (ICP-MS)	1 µg/L

### Results:

Sample ID	SYR-CS1-a	SYR-CS1-b	SYR-IS1-a	SYR-IS1-b
Sample No.	34609-2	34609-3	34609-5	34609-6
Total Suspended Solids (mg/L)	12	15	85	85
Arsenic (µg/L)	6	6	5	5

Sample ID	NTR-CS1-a	NTR-CS1-b	NTR-IS1-a	NTR-IS1-b
Sample No.	34609-8	34609-9	34609-11	34609-12
Total Suspended Solids (mg/L)	8	8	8	10
Arsenic (µg/L)	N/A	N/A	N/A	N/A

\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICK TSE**  
General Manager



## TEST REPORT

Report No.:	34609
Date of Issue:	2021-01-22
Date Received:	2021-01-18
Date Tested:	2021-01-18
Date Completed:	2021-01-22
Page:	2 of 2

### Results:

Sample ID	SHST-IS2-a	SHST-IS2-b	MWR-IS3-a	MWR-IS3-b
Sample No.	34609-14	34609-15	34609-17	34609-18
Total Suspended Solids (mg/L)	<2.5	3	11	12
Arsenic (µg/L)	N/A	N/A	N/A	N/A

Remarks: 1) < = less than

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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**APPENDIX D**  
**QUALITY CONTROL REPORTS FOR**  
**LABORATORY ANALYSIS**

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## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	QC34564
Date of Issue:	2021-01-12
Date Received:	2021-01-06
Date Tested:	2021-01-06
Date Completed:	2021-01-12

**ATTN:** Ms. Ivy Tam

Page: 1 of 1

### QC report

#### Method Blank

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	<0.5	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

#### Method QC

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	96	94	80-120
Arsenic (%)	91	N/A	80-120

#### Sample Spike

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	100	N/A	80-120

#### Sample Duplicate

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	2	3	RPD≤5%
Arsenic (%)	0	N/A	RPD≤20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34573.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICIK TSE**  
General Manager

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	QC34573
Date of Issue:	2021-01-14
Date Received:	2021-01-08
Date Tested:	2021-01-08
Date Completed:	2021-01-14

Page: 1 of 1

**ATTN:** Ms. Ivy Tam

### QC report

#### Method Blank

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	<0.5	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

#### Method QC

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	102	101	80-120
Arsenic (%)	99	N/A	80-120

#### Sample Spike

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	106	N/A	80-120

#### Sample Duplicate

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	1	2	RPD ≤ 5%
Arsenic (%)	6	N/A	RPD ≤ 20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34573.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICIA TSE**  
General Manager



## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	QC34586
Date of Issue:	2021-01-15
Date Received:	2021-01-11
Date Tested:	2021-01-11
Date Completed:	2021-01-15

Page: 1 of 1

**ATTN:** Ms. Ivy Tam

**QC report**

**Method Blank**

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	<0.5	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

**Method QC**

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	101	105	80-120
Arsenic (%)	95	N/A	80-120

**Sample Spike**

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	90	N/A	80-120

**Sample Duplicate**

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	1	2	RPD≤5%
Arsenic (%)	12	N/A	RPD≤20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34586.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**

  
**PATRICIK TSE**  
General Manager

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	QC34592
Date of Issue:	2021-01-18
Date Received:	2021-01-13
Date Tested:	2021-01-13
Date Completed:	2021-01-18

Page: 1 of 1

**ATTN:** Ms. Ivy Tam

### QC report

#### Method Blank

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	<0.5	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

#### Method QC

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	96	102	80-120
Arsenic (%)	94	N/A	80-120

#### Sample Spike

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	98	N/A	80-120

#### Sample Duplicate

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	3	1	RPD ≤ 5%
Arsenic (%)	3	N/A	RPD ≤ 20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34592.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRIC TSE**  
General Manager

## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.:	QC34603
Date of Issue:	2021-01-21
Date Received:	2021-01-15
Date Tested:	2021-01-15
Date Completed:	2021-01-21

Page: 1 of 1

**ATTN:** Ms. Ivy Tam

### QC report

#### Method Blank

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	<0.5	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

#### Method QC

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	106	101	80-120
Arsenic (%)	91	N/A	80-120

#### Sample Spike

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	83	N/A	80-120

#### Sample Duplicate

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	3	5	RPD≤5%
Arsenic (%)	4	N/A	RPD≤20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34603.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICIA TSE**  
General Manager



## TEST REPORT

**APPLICANT:** Wellab Limited (EM&A Department)  
Rm 1701, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Report No.: QC34609  
Date of Issue: 2021-01-22  
Date Received: 2021-01-18  
Date Tested: 2021-01-18  
Date Completed: 2021-01-22

Page: 1 of 1

**ATTN:** Ms. Ivy Tam

### QC report

#### Method Blank

Parameter	Method Blank 1	Method Blank 2	Acceptance
Total Suspended Solids (mg/L)	<0.5	N/A	<0.5
Arsenic (µg/L)	<0.2	N/A	<0.2

#### Method QC

Parameter	MQC1	MQC2	Acceptance
Total Suspended Solids (%)	102	99	80-120
Arsenic (%)	96	N/A	80-120

#### Sample Spike

Parameter	Sample Spike 1	Sample Spike 2	Acceptance
Total Suspended Solids (%)	N/A	N/A	N/A
Arsenic (%)	101	N/A	80-120

#### Sample Duplicate

Parameter	Sample Duplicate 1	Sample Duplicate 2	Acceptance
Total Suspended Solids (%)	0	1	RPD≤5%
Arsenic (%)	2	N/A	RPD≤20%

Remarks: 1) < = less than

2) N/A = Not applicable

3) This report is the summary of quality control data for report number 34609.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

  
**PATRICIK TSE**  
General Manager

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**APPENDIX E**  
**WEATHER CONDITIONS DURING**  
**ADDITIONAL BASELINE WATER**  
**QUALITY MONITORING PERIOD**

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**Appendix E – Weather Conditions during Additional Baseline Water Quality  
Monitoring Period**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
6 Jan 21	17.1	72	-
7 Jan 21	15.3	67	-
8 Jan 21	9.1	52	-
9 Jan 21	10.7	38	-
10 Jan 21	12.8	40	-
11 Jan 21	10.6	44	-
12 Jan 21	11.9	33	-
13 Jan 21	13.4	48	-
14 Jan 21	15.2	55	-
15 Jan 21	17.3	59	-
16 Jan 21	17.6	68	-
17 Jan 21	16.6	58	-
18 Jan 21	14.2	53	-

\* The above information was extracted from the daily weather summary by Hong Kong Observatory.

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**APPENDIX F**  
**ADDITIONAL BASELINE WATER**  
**QUALITY MONITORING SCHEDULE**

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**Contract No. NDO 04/2019**  
**Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas**  
**Baseline Water Quality Monitoring Schedule (January 2021)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jan	2-Jan
3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan
			<u>Water Quality Monitoring</u>		<u>Water Quality Monitoring</u>	
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
	<u>Water Quality Monitoring</u>		<u>Water Quality Monitoring</u>		<u>Water Quality Monitoring</u>	
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
	<u>Water Quality Monitoring</u>					
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
31-Jan						



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**APPENDIX G**  
**EVENT AND ACTION PLAN**

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**Appendix G – Event / Action Plan****Table G: Event / Action Plan for Water Quality**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	1. Inform IEC, Contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; and 3. Discuss remedial measures with IEC and Contractor and ER.	1. Discuss with ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the Effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the Implemented mitigation measures; 2. Make agreement on the remedial measures to be implemented; 3. Supervise the implementation of agreed remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the noncompliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and 7. Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Inform IEC, Contractor and ER; 3. Check monitoring data, all plant, equipment and Contractor's working methods;	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET	1. Discuss with ET, IEC and Contractor on the proposed mitigation measures; 2. Make agreement on the remedial measures to be implemented; and 3. Discuss with ET, IEC and Contractor on the effectiveness of the	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	4. Discuss remedial measures with IEC, contractor and ER; and 5. Ensure remedial measures are implemented	and ER on the effectiveness of the implemented mitigation measures.	implemented remedial measures.	equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	1. Repeat measurement on next day of exceedance to confirm findings; 2. Inform IEC, Contractor and ER; 3. Rectify unacceptable practice; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Consider changes of working methods; 6. Discuss mitigation measures with IEC, ER and Contractor; and 7. Ensure the agreed remedial measures are implemented	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; and 4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the noncompliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
				6. Implement the agreed remedial measures.
Limit level being exceeded by more than one consecutive sampling days	1. Inform IEC, contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; 3. Discuss mitigation measures with IEC, ER and Contractor; and; 4. Ensure mitigation measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; 4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the noncompliance in writing; 3. Rectify Unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; 6. Implement the agreed remedial measures; and 7. As directed by the ER, to slow down or stop all or part of the dredging activities until no exceedance of Limit level.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, ER – Engineer's Representative