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Water Supplies Department

Contract No. 13/WSD/17

Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Monthly EM&A Report No.46
(Period from 1 December to 31 December 2023)

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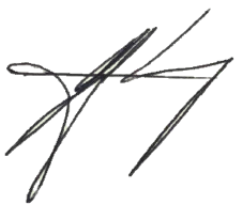
	Prepared by:	Reviewed and Certified by:
Name	Alex LEUNG	Jacky LEUNG
Position	Environmental Team Member	Environmental Team Leader
Signature		
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Acuity Sustainability Consulting Limited
Flat/RM E, 12/F, Ford Glory Plaza,
Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong
tel +852 2698 6833
fax +852 2698 9383 | e-mail admin@acuityhk.com
http www.acuityhk.com | www.aurecongroup.com

ANEWR

Water Supplies Department
New Works Branch
Consultants Management Division
6/F Sha Tin Government Offices
1 Sheung Wo Che Road
Sha Tin
New Territories

Your reference:

Our reference: HKWSD202/50/109487

Date: 7 February 2024

Attention: Mr Sam Hui/ Mr H L Lai

BY EMAIL & POST
(email: wl_hui@wsd.gov.hk/
jack_hl_lai@wsd.gov.hk)

Dear Sirs

Agreement No. CE 5/2019 (EP)
Independent Environmental Checker for First Stage of
Tseung Kwan O Desalination Plant – Investigation
Verification of Monthly EM&A Report No.46 (December 2023) _v4

We refer to email of 7 February 2024 attaching Monthly EM&A Report No.46 (December 2023) _v4 for the captioned project prepared by the ET.

We have no further comment and hereby verify the captioned report in accordance with Clause 3.5 of the Environmental Permit no. EP-503/2015/A and Further Environmental Permit no. FEP-01/503/2015/A.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Alex Chan
Independent Environmental Checker

CYCA/lsmt

ANewR Consulting Limited
Unit 1813, 1815-16, 18/F, Tower A, Regent Centre
63 Wo Yi Hop Road, Kwai Chung, Hong Kong
Tel: (852) 2618 2831 Fax: (852) 3007 8648
Email: info@anewr.com
Web: www.anewr.com

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REVISION HISTORY

REV.	DESCRIPTION OF MODIFICATION	DATE
1.	First Issue for Comments	17/01/2024
2.	Revised According to the Comments	25/01/2024
3	Revised According to the Comments	25/01/2024
4	Revised based on the reporting issue	07/02/2024

CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

A1. The Project, Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (TKODP), is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is currently governed by a Further Environmental Permit (EP No. FEP – 01/503/2015/A) for the construction and operation of the Contract.

A2. In accordance with the Environmental Monitoring and Audit (EM&A) Manual for the Contract, EM&A works for marine water quality, noise, waste management and ecology should be carried out by Environmental Team (ET), Acuity Sustainability Consulting Limited (ASCL), during the construction phase of the Contract.

A3. This is the 46th Monthly EM&A Report, prepared by ASCL, for the Contract summarizing the monitoring results and audit findings of the EM&A programme at and around Tseung Kwan O Area 137 (TKO 137) during the reporting period from 1 December to 31 December 2023.

A4. The EM&A programme for this contract has covered environmental monitoring on construction noise level at selected NSRs and Contractor's environmental performance auditing in the aspects of construction dust, construction noise, water quality, waste management, Landscape and Visual and Ecology.

SUMMARY OF MAIN WORKS UNDERTAKEN & KEY MITIGATION MEASURES IMPLEMENTED

A5. Key activities carried out in this reporting period for the Contract included the followings:

Administration Building • Carrying out the floor tiles works at G/F • External wall painting works • Construction of block work for pipe duct • Installation of building services, cable laying, electrical switchboard, testing and commissioning
Chemical building • Installation of leakage collection pit cover • Underground utility construction work • Landscape work at roof • Defect rectification
Main Electrical & Central Chiller Plant Building • Installation of chillers, building services, electrical switchboard and cable laying • Installation of Roof Tile for Fuel Tank Room

ActiDAFF • Underground utility construction work • Installation of access opening cover • Construction of staircase no 2 • Installation of mechanical equipment, piping system, installation of building services, electrical switchboards and cable laying, fiber-reinforced plastic cover Installation
Product Water Storage Tank Building • Installation of Cat Ladders in Water Tank A • Sealing slab opening in water Tank A • Re-construction of Wall PW8 in Water Tank A • Installation of metal cladding, building services, cable laying, mechanical equipment, steel pipe • Underground utility construction
OSCG Building • Protective Coating for dangerous goods Rooms • Placing Soil Mix at Roof • Installation of Metal Cladding (at East Side) and Roller Shutters and Window • Underground utility construction work • Installation of building services, mechanical equipment and cable laying, testing and commissioning
Reverse Osmosis Building • Installation of building services, electrical switchboard, cable laying, Installation of mechanical equipment, steel pipe, Glass Reinforced Plastic pipe, raised floor, testing and commissioning • Installation of metal cladding, handrailing, roller shutters, glass canopy and glass house • Underground utility construction work • Construction of Reinforced Concrete External Wall for Male Toilet
Post Treatment Building • Installation of building services, Installation of mechanical equipment and piping system, Pressure Test • Underground utility construction work • Installation of Cat Ladders in Water Tanks • Installation of Metal Cladding • Placing Soil Mix at Roof
Inspection corridor • Installation of building services, Lift installation • Construction of roof tiling works and staircases no. 2 • Installation of Movement Joints and glass window

CO_2 Tanks
- Installation of pipes and electrical wiring, testing and commissioning

Combined Shaft and Pump room
- Finishing, Grating; window; louvre installation

Other
- Watermain works at CLP 132 kV Substation
- Staircases construction; Steel Bridge assembly and installation at elevated walkway
- Road Construction, Footpath Construction, Landscape Construction, Irrigation System Construction, Water Pressure Test for Fire Services and Plumbing System in Zone A, B, C
- Structure Construction, steel fence erection of Wave Deflector Wall at seawall area

A6. The major environmental impacts brought by the above construction works include:

- Construction dust and noise generation from construction works and excavation works;
- Waste generation from the construction activities

A7. The key environmental mitigation measures implemented for the Contract in this reporting period associated with the above construction works include:

- Dust suppression by regular wetting and water spraying for construction works;
- Reduction of noise from equipment and machinery on-site and regular inspection to machinery and plants/vehicles on-site to ensure proper functioning;
- Deployment of silt curtain at the marine areas; and
- Sorting and storage of general refuse and construction waste;

SUMMARY OF EXCEEDANCE & INVESTIGATION & FOLLOW-UP

A8. No noise monitoring was conducted during the reporting period since there are no Contract -related construction activities undertaken within a radius of 300m from the monitoring locations. No exceedance of the action Level was recorded during the reporting period.

A9. The construction phase marine water quality programme was ceased from 1 September 2023 due to the completion of marine-related construction works.

A10. The EM&A works for commissioning phase water quality were conducted during the reporting period in accordance with the EM&A Manual. Thirty-five (35) of the commissioning phase water quality monitoring results of SS obtained had exceeded the Action Level. Twenty-seven (27) of the commissioning phase water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. After investigation, all exceedances were concluded unrelated to the Project.

A11. Seven (7) of dechlorinated effluent sample were taken in contact tank/ product water tank on 3 December 2023. No TRC exceedance of action or limit levels was obtained during the discharge of dechlorinated effluent.

A12. In this reporting period, 72 times of landfill gas monitoring were conducted at TKO Area 137 (Ch1+340 – Ch1+600). No action or limit level exceedance was recorded during the reporting period.

A13. Joint site inspections of the construction work by ET and IEC were carried out on 5, 12, 19, 27 December 2023 to audit the mitigation measures implementation status. Reminders were recorded in the site inspection checklists and provided to the contractors together with the appropriate follow-up actions where necessary.

COMPLAINT HANDLING AND PROSECUTION

A14. No environmental complaint, notification of summons and prosecution was received in the reporting period.

REPORTING CHANGE

A15. There was no change to be reported that may affect the on-going EM&A programme.

SUMMARY OF UPCOMING KEY ISSUES AND KEY MITIGATION MEASURES

A16. Key activities anticipated in the next reporting period for the Contract will include the followings:

Administration Building • Landscaping works on roof of building. • External wall aluminum features installation • Finishing works for doghouse. • Installation of building services, cable laying, electrical switchboard, Pressure Test, electrical switchboard, testing and commissioning
Chemical building • Landscape work at roof • Construction of hose reel cabinet. • Defect rectification
Main Electrical & Central Chiller Plant Building • Installation of Roof Tile for Fuel Tank Room • Minor Installation of building services, electrical switchboard, cable laying, pressure test
ActiDAFF • Underground utility construction work • Installation of access opening covers for filtered water tank • Carrying out finishing works for staircase no. 3

• Minor Installation of mechanical equipment, piping system, building services, electrical switchboards and cable laying, fiber-reinforced plastic cover Installation
Product Water Storage Tank Building • Water Test in Tank A • Waterproofing work at Roof Slab on Tank A • Tank A water test and defect rectification • Installation of building services, cable laying, Installation of mechanical equipment, steel pipe, Pressure Test
OSCG Building • Installation of Railing on Brine Maker Tank • Protective Coating for dangerous goods Rooms • Installation of building services, mechanical equipment and cable laying, Lightning Installation, testing and commissioning
Reverse Osmosis Building • Installation of Handrailings • Installation of Glass House • Installation of building services, electrical switchboard, cable laying, Photovoltaic Panel. Minor Installation of mechanical equipment and raised floor, testing and commissioning • Underground utility construction work
Post Treatment Building • Installation of Cat Ladders in Water Tanks • Placing Soil Mix at Roof • Curb Construction for Rescue Opening at Water Tanks • Installation of building services, mechanical equipment and piping system, Pressure Test
Inspection corridor • Construction of roof tiling works • Installation of steel balustrade at roof • Installation of Movement Joints • Installation of glass window • Installation of building services, Lift Installation
CO_2 Tanks • Tank surface cleaning, testing and commissioning Combined Shaft and Pump room • Internal finishing, defect rectification Guard House • Installation of Building Services • Workshop construction work

Other

- Glass Roof and Glass Canopy installation at elevated walkway
- Security Fence footing construction work
- Manhole 5 Glass Reinforced Plastic Installation work
- Underground utility rectification work
- Road Construction
- Traffic signage work
- Footpath Construction
- Landscape Construction
- Landscape planting work
- Irrigation System Construction
- Slope work – Shotcreteing; Rock anchor installation, Rock break
- Water Pressure Test for Fire Services and Plumbing System
- Open Channel and Wave deflector Wall
- Traffic signage work

A17. The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from excavation and construction works;
- Waste generation from construction activities

A18. The key environmental mitigation measures for the Contract in the coming reporting period associated with the above construction works will include:

- Reduction of noise from equipment and machinery on-site;
- Dust suppression by regular wetting and water spraying for construction works and at main haul road;
- Sorting and storage of general refuse and construction waste; and
- Deployment of silt curtain at the marine areas.

1. BASIC CONTRACT INFORMATION

BACKGROUND

1.1. The Acciona Agua, S.A. Trading, Jardine Engineering Corporation, Limited and China State Construction Engineering (Hong Kong) Limited as AJC Joint Venture (AJCJV) is contracted to carry out the Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (DPTKO) under Contract No. 13/WSD/17 (the Contract).

1.2. Acuity Sustainability Consulting Limited (ASCL) is commissioned by AJCJV to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-192/2015) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Contract; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements and Contract No. 13/WSD/17 Specification requirements.

1.3. Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection granted the Environmental Permit (No. EP-01/503/2015) and Variation of Environmental Permit (No. EP-01/503/2015/A) to Water Supplies Department (WSD); and granted the Further Environmental Permit (No. FEP-01/503/2015/A) to AJCJV for the Contract.

THE REPORTING SCOPE

1.4. This is the 46th Monthly EM&A Report for the Contract which summarizes the key findings of the EM&A programme during the reporting period from 1 December to 31 December 2023.

CONTRACT ORGANIZATION

1.5. The Contract Organization structure for Construction Phase is presented in **Figure 1.1**.

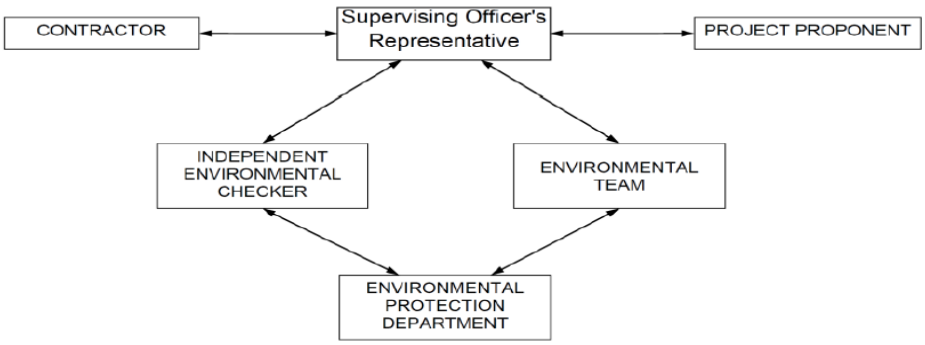

Figure 1.1 Contract Organization Chart

1.6. Contact details of the key personnel are presented in **Table 1.1** below:

Table 1.1 Contact Details of Key Personnel

Party	Position	Name	Telephone no.
Contract Proponent (Water Supplies Department)	SE/CM2	Milton Law	2634-3573
Supervising Officer (Binnies Hong Kong Limited)	Project Manager	Christina Ko	2608-7302
	Chief Resident Engineer	Roger Wu	6343-1002
The Jardine Engineering Corporation, Limited, China State Construction Engineering (Hong Kong) Limited and Acciona Agua, S.A. Trading	Project Manager	Stephen Yeung	2807-4665
	Environmental Monitoring Manager	Brian Kam	9456-9541
	Environmental Monitoring Manager	Joy Chan	6468-1782
Acuity Sustainability Consulting Limited	Environmental Team Leader	Jacky Leung	2698-6833
ANewR Consulting Limited	Independent Environmental Checker (IEC)	Mr. CHAN Yi Chun, Alex	2618-2831

SUMMARY OF CONSTRUCTION WORKS

1.7. Details of the major construction activities undertaken in this reporting period are shown below. The master programme is presented in **Appendix A**.

1.8. Key activities carried out in this reporting period for the Contract included the followings:

Administration Building • Carrying out the floor tiles works at G/F • External wall painting works • Construction of block work for pipe duct • Installation of building services, cable laying, electrical switchboard, testing and commissioning
Chemical building • Installation of leakage collection pit cover • Underground utility construction work • Landscape work at roof • Defect rectification

Main Electrical & Central Chiller Plant Building • Installation of chillers, building services, electrical switchboard and cable laying • Installation of Roof Tile for Fuel Tank Room
ActiDAFF • Underground utility construction work • Installation of access opening cover • Construction of staircase no 2 • Installation of mechanical equipment, piping system, installation of building services, electrical switchboards and cable laying, fiber-reinforced plastic cover Installation
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Reverse Osmosis Building • Installation of building services, electrical switchboard, cable laying, Installation of mechanical equipment, steel pipe, Glass Reinforced Plastic pipe, raised floor, testing and commissioning • Installation of metal cladding, handrailing, roller shutters, glass canopy and glass house • Underground utility construction work • Construction of reinforced concrete External Wall for Male Toilet
Post Treatment Building • Installation of building services, Installation of mechanical equipment and piping system, Pressure Test • Underground utility construction work • Installation of Cat Ladders in Water Tanks • Installation of Metal Cladding • Placing Soil Mix at Roof

Inspection corridor • Installation of building services, Lift installation • Construction of roof tiling works and staircases no. 2 • Installation of Movement Joints and glass window
CO_2 Tanks • Installation of pipes and electrical wiring, testing and commissioning Combined Shaft and Pump room • Finishing, Grating; window; louvre installation Other • Watermain works at CLP 132 kV Substation • Staircases construction; Steel Bridge assembly and installation at elevated walkway • Road Construction, Footpath Construction, Landscape Construction, Irrigation System Construction, Water Pressure Test for Fire Services and Plumbing System in Zone A, B, C • Structure Construction, steel fence erection of Wave Deflector Wall at seawall area

1.9. A summary of the valid permits, licences, and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

Table 1.2 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licences	Valid Period		Status	Remark
	From	To		
Environmental Permit				
EP-503/2015/A	Throughout the Contract		Valid	-
FEP – 01/503/2015/A	Throughout the Contract		Valid	-
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)				
451539	Throughout the Contract		Valid	-
Billing Account for Disposal of Construction Waste				
7036276	Throughout the Contract		Valid	-
Chemical Waste Producer Registration				
5213-839-A2987-01	Throughout the Contract		Valid	-
Wastewater Discharge Licence (Land and Marine works)				
WT00035775-2020	23/08/2021	31/07/2025	Valid	-
WT00044188-2023	16/06/2023	30/06/2028	Valid	For Plant T&C and operation

Permit/ Licences	Valid Period		Status	Remark
	From	To		
Construction Noise Permit				
GW-RE0640-23	22/06/2023	21/12/2023	Valid	Expired in the reporting month
GW-RE1514-23	22/12/2023	21/06/2024	Valid	-

1.10. The status for all environmental aspects is presented in **Table 1.3**.

Table 1.3 Summary of Status for Key Environmental Aspects under the EM&A Manual

Parameters	Status
Water Quality	
Baseline Monitoring under EM&A Manual	The baseline water quality monitoring was conducted between 12 May 2020 to 6 Jun 2020.
Construction Phase Impact Monitoring	Ceased from 1 September 2023
Commissioning Phase Marine Impact Monitoring	On-going
Impact Monitoring of Effluent Discharge from Main Disinfection	On-going
Noise	
Baseline Monitoring	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4
Impact Monitoring	Completed
Waste Management	
Mitigation Measures in Waste Management Plan	On-going
Landfill Gas	
Regular Monitoring when construction works are within the 250 m Consultation Zone	On-going
Environmental Audit	
Site Inspection covering Measures of Air Quality, Noise Impact, Water Quality, Waste, Ecological Quality, Fisheries, Landscape and Visual	On-going

1.11. Other than the EM&A work by ET, environmental briefings, trainings, and regular environmental management meetings were conducted, in order to enhance environmental awareness and closely monitor the environmental performance of the contractors.

1.12. The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the EM&A Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Contract during the reporting period is provided in **Appendix C**.

2. NOISE

MONITORING REQUIREMENTS

2.1. To ensure no adverse noise impact, noise monitoring is recommended to be carried out within 300m radius from the nearby noise sensitive receivers (NSRs), during construction phase. The NSRs selected as monitoring station are (i) NSR4 – Creative Secondary School, (ii) NSR24 – PLK Laws Foundation College, and (iii) NSR31 – School of Continuing and Professional Studies – CUHK respectively.

2.2. Construction noise level were measured in terms of the A-weighted equivalent continuous sound pressure level (LAeq). Leq 30min was used as the monitoring parameter for the time period between 0700 and 1900 on normal weekdays. Construction works would follow stipulations of the valid Construction Noise Permits if works had to be conducted during restricted hours or public holidays. **Table 2.1** summarizes the monitoring parameters, frequency, and duration of the impact noise monitoring.

Table 2.1 Noise Monitoring Parameters, Time, Frequency and Duration

Time	Duration	Interval	Parameters
Daytime: 0700-1900	Day time: 0700-1900 (during normal weekdays)	Continuously in $L_{eq\ 5min}$/$L_{eq\ 30min}$ (average of 6 consecutive $L_{eq\ 5min}$)	$L_{eq\ 30min}$ $L_{10\ 30min}$ & $L_{90\ 30min}$

MONITORING LOCATIONS

2.3. The monitoring locations were normally made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. A correction of +3dB(A) should be made to the free-field measurements.

2.4. According to the environmental findings detailed in the EIA report and Baseline Monitoring Report, the designated locations for the construction noise monitoring are listed in **Table 2.2** below.

Table 2.2 Noise Sensitive Receivers

NSR ID	Noise Sensitive Receivers	Monitoring Location	Position
NSR 4	Creative Secondary School	Roof Floor	1 m from facade
NSR 24	PLK Laws Foundation College	Pedestrian Road on Ground Floor	Free-field
NSR 31	School of Continuing and Professional Studies - CUHK	Roof Floor	1 m from facade

2.5. Three noise monitoring locations for impact monitoring at the nearby sensitive receivers are shown in **Figure 2.1-2.3**.

Figure 2.1 NSR4 Creative Secondary School

Figure 2.2 NSR24 PLK Laws Foundation College

Figure 2.3 NSR31 School of Continuing and Professional Studies - CUHK

IMPACT MONITORING METHODOLOGY

2.6. Integrated sound level meter will be used for the noise monitoring. The meter will be in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications. Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration levels before and after the noise measurements agree to within 1.0 dB(A).

2.7. Noise measurements were not made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

ACTION AND LIMIT LEVELS

2.8. The Action/Limit Levels are in line with the criteria of Practice Note for Professional Persons (ProPECC PN 2/93) "Noise from Construction Activities – Non-statutory Controls" and Technical Memorandum on Environmental Impact Assessment Process issued by HKSAR Environmental Protection Department ["EPD"] under the Environmental Impact Assessment Ordinance, Cap 499, S.16 are presented in **Table 2.3**.

Table 2.3 Action and Limit Levels for Noise per EM&A Manual

Time Period	Action	Limit (dB(A))
0700-1900 on normal weekdays	When one documented complaint is received from any one of the noise sensitive receivers	• 70 dB(A) for school and • 65 dB(A) during examination period

Note: Limits specified in the GW-TM and IND-TM for construction and operation noise, respectively.

2.9. If exceedances were found during noise monitoring, the actions in accordance with the Event and Action Plan shall be carried out according to **Appendix E.**

MONITORING RESULTS AND OBSERVATIONS

2.10. Referring to EM&A Manual Section 4.1.2, the impact noise monitoring should be carried out when there are Contract-related construction activities undertaken within a radius of 300m from the monitoring stations. No monitoring station was located within a radius of 300m of the Contract site as shown in **Figure 2.4**, no impact noise monitoring was conducted in the reporting period.

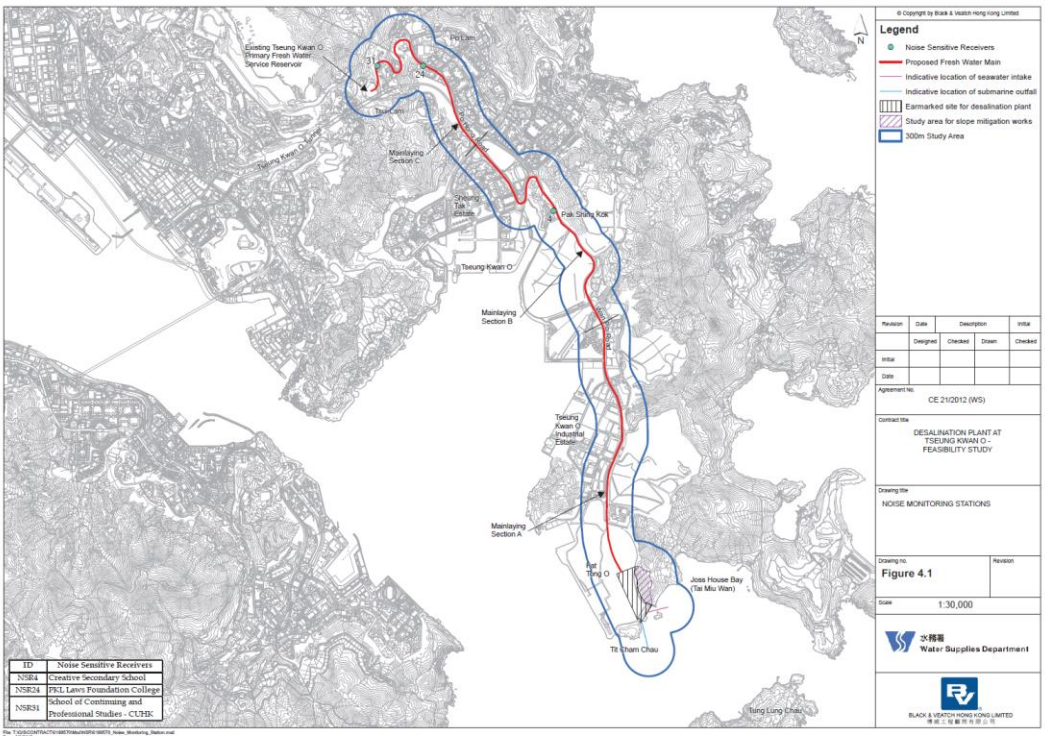


Figure 2.4 Site Layout Plan with Noise Sensitive Receivers and Desalination Plant

3. WATER QUALITY

3.1. In accordance with the recommendations of the EIA, water quality monitoring is required during dredging for the submarine pipelines and, during operation phase. The following Section provides details of the water quality monitoring to be undertaken by the Environmental Team (ET) to verify the distance of sediment and brine plume dispersion and to identify whether the potential exists for any indirect impacts to occur to ecological sensitive receivers.

3.2. The water quality monitoring programme was be carried out to allow any deteriorating water quality to be readily detected and timely action taken to rectify the situation.

3.3. Water quality monitoring for the Contract can be divided into the following stages:

- Dredging activities during construction phase;
- Discharge of effluent from main disinfection during construction phase; and
- Operation activities during commissioning phase

WATER QUALITY PARAMETERS

3.4. The parameters that have been selected for measurement in situ and in the laboratory are those that were either determined in the EIA to be those with the most potential to be affected by the construction works or are a standard check on water quality conditions. Parameters to be measured in the impact monitoring are listed in **Table 3.1**.

Table 3.1 Parameters measured in the Impact Marine Water Quality Monitoring

Parameters	Unit	Abbreviation
In-situ measurements		
Dissolved oxygen	mg/L	DO
Temperature	^{o}C	-
pH	-	-
Turbidity	NTU	-
Salinity	0/00	-
Total Residual Chlorine NOTE1	mg/L	TRC
Laboratory measurements		
Suspended Solids	mg/L	SS
Iron-Soluble	mg/L	Fe
Anti-scalant as Reactive Phosphorus	mg/L	PO4 as P-

NOTE 1: Monitoring of Total Residual Chlorine will be conducted when cleaning and sterilization of the new freshwater main is carried out.

3.5. In addition to the water quality parameters, other relevant data were also being measured and recorded in Water Quality Monitoring Logs, including the location of the sampling stations, water depth, time, weather conditions, sea conditions, tidal stage, current direction and velocity, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results.

MONITORING EQUIPMENT

3.6. For water quality monitoring, the following equipment were used:

Dissolved Oxygen and Temperature Measuring Equipment - The instrument was a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and was operable from a DC power source. It was capable of measuring: dissolved oxygen levels in the range of 0 - 20 mg/L and 0 - 200% saturation; and a temperature of 0 - 45 degrees Celsius. It has a membrane electrode with automatic temperature compensation complete with a cable of not less than 35 m in length. Sufficient stocks of spare electrodes and cables were available for replacement where necessary (e.g. YSI model 59 DO meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

Turbidity Measurement Equipment - The instrument was a portable, weatherproof turbidity-measuring unit complete with cable, sensor and comprehensive operation manuals. The equipment was operated from a DC power source, it has a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU and complete with a cable with at least 35 m in length (for example Hach 2100P or an approved similar instrument).

Salinity Measurement Instrument - A portable salinometer capable of measuring salinity in the range of 0 - 40 ppt was provided for measuring salinity of the water at each monitoring location.

Water Depth Gauge – A portable, battery-operated echo sounder (for example Seafarer 700 or a similar approved instrument) was used for the determination of water depth at each designated monitoring station. This unit will preferably be affixed to the bottom of the work boat if the same vessel is to be used throughout the monitoring programme. The echo sounder was suitably calibrated.

Positioning Device – A Global Positioning System (GPS) was used during monitoring to allow accurate recording of the position of the monitoring vessel before taking measurements. The Differential GPS, or equivalent instrument, was suitably calibrated at appropriate checkpoint (e.g. Quarry Bay Survey Nail) to verify that the monitoring station is at the correct position before the water quality monitoring commence.

Water Sampling Equipment - A water sampler, consisting of a PVC or glass cylinder of not less than two litres, which can be effectively sealed with cups at both ends, was used. The water sampler has a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

Total Residual Chlorine -Total residual chlorine (TRC) shall be measured in-situ using approved test kit.

SAMPLING / TESTING PROTOCOLS

3.7. All in situ monitoring instruments were checked, calibrated, and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at monthly intervals throughout the stages of the water

quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use.

3.8. On-site calibration of field equipment was following the "*Guide to On-Site Test Methods for the Analysis of Waters*", BS 1427: 2009. Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was made available so that monitoring can proceed uninterrupted even when equipment is under maintenance, calibration etc.

LABORATORY MEASUREMENT AND ANALYSIS

3.9. Sufficient volume of each water sample was collected for carrying out the laboratory analyses. Using chain of custody forms, collected water samples were transferred to a HOKLAS accredited laboratory (Acumen Laboratory and Testing Limit - HOKLAS 241) for immediate processing. The determination work was start within the next working day after collection of the water samples. Analytical methodology and sample preservation of other parameters were based on the latest edition of Standard Methods for the Examination of Waste and Wastewater published by APHA, AWWA and WPCF and methods by USEPA, or suitable method in accordance with requirements of HOKLAS or another internationally accredited scheme. The QA/QC details were in accordance with the requirements of HOKLAS or another internationally accredited scheme.

3.10. Parameters for laboratory measurements, standard methods and detection limits are presented in **Table 3.2**.

Table 3.2 Laboratory measurements, standard methods, and corresponding detection limits of marine water quality monitoring

Parameters	Standard Methods	Detection Limit	Reporting Limit	Precision
Dissolved oxygen	Instrumental, CTD	0.1	-	±25%
Temperature	Instrumental, CTD	0.1	-	±25%
pH	Instrumental, CTD	0.1	-	±25%
Turbidity	Instrumental, CTD	0.1	-	±25%
Salinity	Instrumental, CTD	0.1	-	±25%
Suspended Solids	APHA 23rd Ed 2540D	1.0	2.5	±17%
Iron	APHA 3111 B	0.2	-	±25%
Total residual chlorine	HACH DR300 Test-kit	Lowest limit = 0.01mg/L; Upper limit = 8 mg/L	-	±25%
	Lovibond MD200	Lowest limit = 0.01mg/L; Upper limit = 6 mg/L	-	±25%

MONITORING LOCATION

Construction Phase

3.11. The Impact water quality monitoring was ceased from 1 September 2023 due to the completion of marine-related construction works.

Commissioning Phase

3.12. The commissioning phase impact water quality monitoring locations are in accordance with the EM&A Manual and detailed in **Table 3.3** below. A schedule for water quality monitoring was prepared by the ET and submitted to IEC and EPD prior to the commencement of the monitoring.

Table 3.3 Location of Impact Water Quality Monitoring Stations

Station	Easting	Northing	Description
CE	843550	815243	Upstream control station at ebb tide
CF	846843	810193	Upstream control station at flood tide
WSR1	846864	812014	Ecological sensitive receiver at Tung Lung Chau
WSR2	847645	812993	Fisheries sensitive receiver at Tung Lung Chau
WSR3	848023	813262	Ecological sensitive receiver at Tung Lung Chau
WSR4	847886	814154	Ecological sensitive receiver at Tai Miu Wan
WSR16	845039	815287	Ecological sensitive receiver at Fat Tong Chau
WSR33	847159	814488	Ecological sensitive receiver at Tai Miu Wan
WSR36	846878	814081	Ecological sensitive receiver at Kwun Tsai
WSR37	846655	813810	Ecological sensitive receiver at Tit Cham Chau
NF1	846542	813614	Edge of nixing zone, ~ 200m west of outfall diffuser
NF2	846942	813614	Edge of nixing zone, ~ 200m east of outfall diffuser
NF3	846742	813414	Edge of nixing zone, ~ 200m south of outfall diffuser

3.13. WSR1 to WSR37 were identified in accordance with Annex 14 of the EIAO-TM as well as Clause 3.4.4.2 of the Environmental Impact Assessment Study Brief for Desalination Plant at Tseung Kwan O (No. ESB-266/2013). WSR1 to WSR3 are sited near the Tung Lung Chau Fish Culture Zone; WSR16 and WSR36 are sited near the coral assemblages along the coastlines of Fat Tong Chau and Kwun Tsai respectively; WSR 4 and WSR33 are sited near the Coastal Protection Area and coral assemblages in waters of Tai Miu Wan; WSR37 is sited near the fisheries resource including spawning and nursery grounds at the coastal water of Tit Cham Chau. NF1 to NF3 are the Edge of nixing zone.

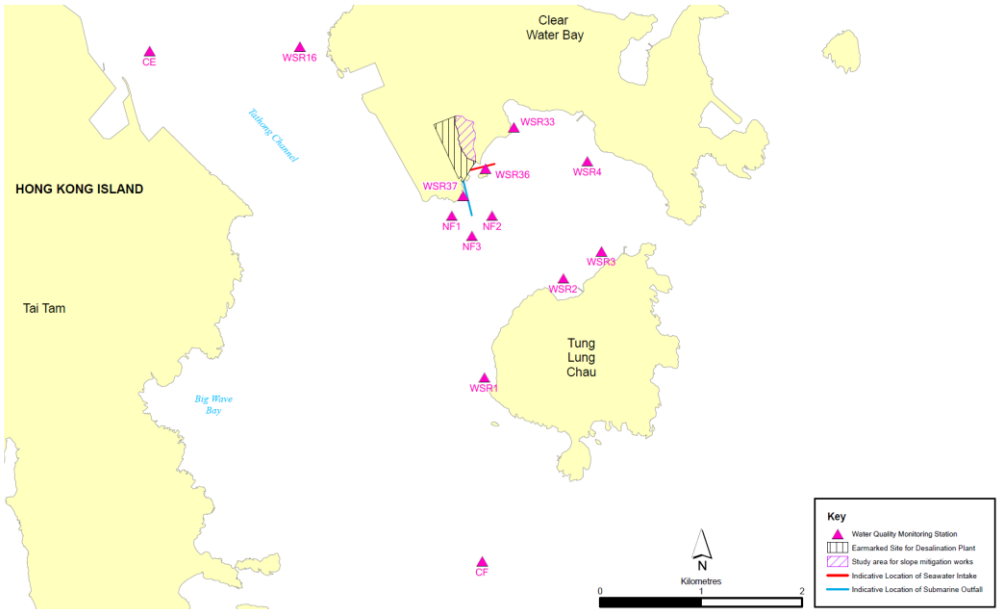


Figure 3.1 Impact water quality monitoring locations under EM&A Manual

Disinfection

3.14. Effluent of disinfection from desalination plant shall be collected at a suitable location after all treatment process before discharge. The sampling location should be agreed with WSD and EPD, and should fulfil the following requirements:

- Effluent collected at the sampling location is representative to the effluent discharged at the outfall diffuser.
- Sampling works at the sampling location would not interfere with the desalination plant operation.
- Sampling works at the sampling location would not induce safety hazard (e.g. staff sampling effluent drops into the culvert)

3.15. According to the approved Flushing and Disinfection Procedure and Supplementary of the Disinfection Procedure for Desalination Plant at Tseung Kwan O, the sampling point of the dechlorinated effluent was located at Contact tank/Product Water Tank (PWT) and T1GKC01AA502/manhole 18. The approved sampling location was shown in Table 3.4, Figure 3.2 and Figure 3.3 below.

Table 3.4 Sampling location of dechlorinated effluent

System/Loop	Discharge location	Sampling Location
Contact tank/ Product Water Tank (PWT)	Culvert	Contact tank/PWT
Connection to dist. network	Manhole 18 in connection point	Sampling point T1GKC01AA502/manhole 18

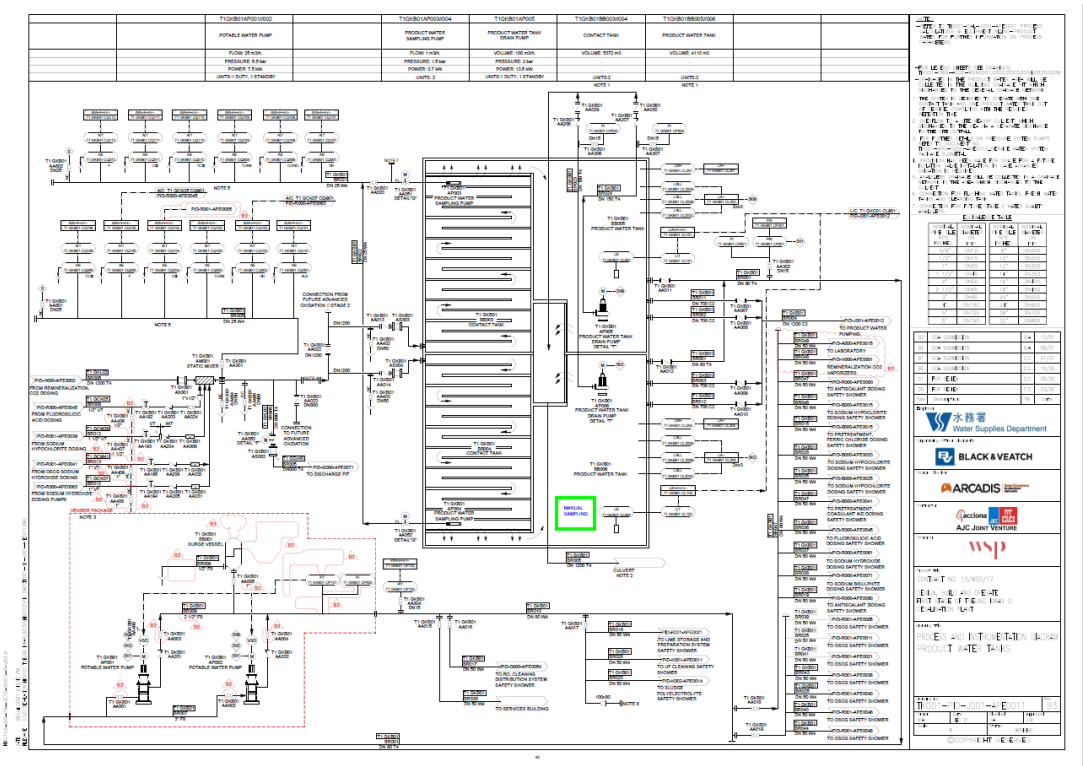


Figure 3.2 Impact water quality monitoring point for dechlorinated effluent (Contact tank/PWT)

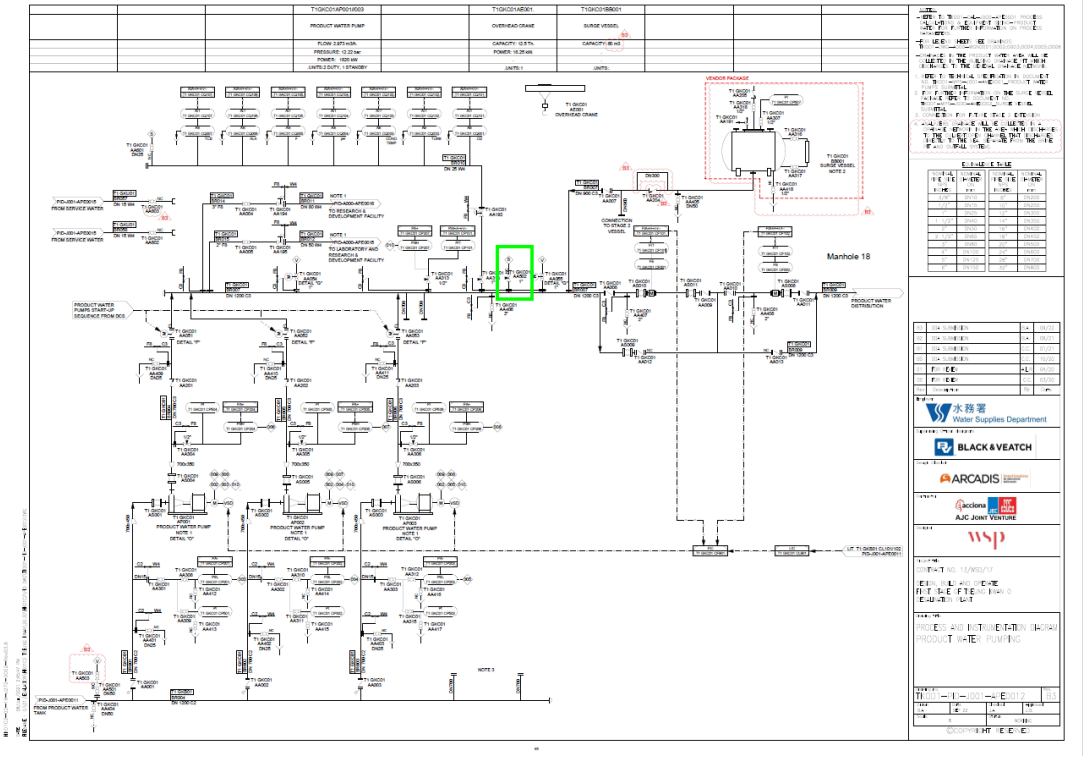


Figure 3.3 Impact water quality monitoring point for dechlorinated effluent (Sampling point T1GKC01AA502/manhole 18)

SAMPLING FREQUENCY

Commissioning Phase

3.16. Impact water quality monitoring were carried out three days per week during the commissioning phase. Monitoring at each station was undertaken once per day. The interval between two sets of monitoring was not less than 36 hours. The monitoring frequency would be increased in the case of exceedances of Action/Limit Levels if considered necessary by ET. Monitoring frequency would be maintained as far as practicable.

Disinfection

3.17. For the discharge of dechlorinated effluent used after main sterilization, in-situ testing of total residual chlorine should be conducted every 1 hour (not less than) at the discharge point(s) when dechlorinated effluent is being discharged.

SAMPLING DEPTHS & REPLICATION

3.18. During impact water quality monitoring, each station was sampled, and measurements/ water samples were taken at three depths, 1 m below the sea surface, mid-depth, and 1 m above the seabed. For in situ measurements, duplicate readings were made at each water depth at each station. Duplicate water samples were collected at each water depth at each station.

ACTION AND LIMIT LEVELS

Commissioning Phase

3.19. The Action and Limit Levels have been set based on the derivation criteria specified in the EM&A Manual. The Action/Limit Levels have been derived and are presented in **Table 3.6**.

Disinfection

3.20. The Action and Limit Levels have been set in accordance with the approved EM&A Manual and presented in **Table 3.6**. For the TRC, the discharge should be suspended if the TRC level of the dechlorinated effluent exceeds the 0.1 mg/L. Chlorinated water should be fully neutralized before discharge. Discharge of the water will be done once it is ensured that the chlorine has been neutralized and it is below the discharge limit.

Table 3.6 Derived Action and Limit Levels for Water Quality

Parameters	Action	Limit
Commissioning Phase Impact Monitoring		
DO in mg/L	Surface and Middle 7.30 mg L^{-1} Bottom 7.31 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.1 mgL^{-1} or level at control station (Whichever the lower)	Surface and Middle 4 mg L^{-1} Bottom 2 mg L^{-1} Tung Lung Chau Fish Culture Zone 5.0 mgL^{-1} or level at control station (Whichever the lower)
SS in mg/L (Depth-averaged)	5.00 mg L^{-1} or 20% exceedance of value at any impact station compared with corresponding data from control station	6.00 mg L^{-1} or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	2.41 NTU or 20% exceedance of value at any impact station compared with corresponding data from control station	2.84 NTU or 30% exceedance of value at any impact station compared with corresponding data from control station
Salinity in PSU (Depth-averaged)	34.25 PSU or 9% exceedance of value at any impact station compared with corresponding data from control station	34.56 PSU or 10% exceedance of value at any impact station compared with corresponding data from control station
Iron in mg/L (Depth-averaged)	0.3 mg/L	0.3 mg/L
Total residual chlorine in mg/L	0.01 mg/L	0.01 mg/L
Total residual chlorine in mg/L (Disinfection)	0.1 mg/L	0.1 mg/L

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For Turbidity, SS, iron and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
iv. Monitoring of Total Residual Chlorine will be conducted when cleaning and sterilization of the new freshwater main is carried out.

MONITORING RESULTS AND OBSERVATIONS

Construction Phase

3.21. Referring to EM&A Manual, the general water quality monitoring should be carried out when there are marine-related construction activities undertaken. General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) was ceased from 1 September 2023 due to the completion of marine-related construction works.

Commissioning Phase

3.22. Considering the first testing and commissioning(T&C) phase of Tseung Kwan O Desalination Plant was started in the reporting period, additional marine water quality monitoring was conducted at the thirteen monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2 and NF3) from 12 December 2023. The Action and Limit Level would be referred to the approved EM&A Manual Table 5.4 First-year Operation Phase Marine Water Monitoring

3.23. Thirty-five (35) of the commissioning phase water quality monitoring results of SS obtained had exceeded the Action Level. Twenty-seven (27) of the commissioning phase water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

3.24. Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 12, 14, 16, 19, 21, 23, 26 and 28 December 2023 were concluded to be unrelated to the Contract as detailed in the Incident Reports on Action Level or Limit Level Non-compliance along with supporting materials in Appendix K.

3.25. Monitoring results of 8 key parameters: Salinity, DO, turbidity, SS, pH, temperature, Total Residual Chlorine and Iron in this reporting, are summarized in Table 3.7, and detailed results are presented in Appendix G.

Table 3.7 Summary of Impact Water Quality Monitoring Results

Locations		Parameters								
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp. (°C)	TRC (mg/L)	Iron (mg/L)
			Surface & Middle	Bottom						
CE	Avg.	33.1	9.1	9.0	7.2	3.0	3.9	21.8	<0.01	<0.1
	Min.	32.1	7.4	7.4	6.6	2.2	3.0	21.0	<0.01	<0.1
	Max.	34.5	10.1	10.1	7.6	3.8	6.0	22.4	<0.01	<0.1
CF	Avg.	33.0	9.2	9.2	7.1	3.2	3.8	21.9	<0.01	<0.1
	Min.	32.3	7.9	7.8	6.6	2.5	2.5	20.9	<0.01	<0.1
	Max.	34.2	10.0	10.1	7.4	4.0	7.0	22.6	<0.01	<0.1
WSR1	Avg.	33.2	9.0	9.1	7.2	2.2	4.0	21.9	<0.01	<0.1
	Min.	32.3	7.8	7.9	6.6	1.7	2.5	21.2	<0.01	<0.1
	Max.	34.4	10.3	10.3	7.4	2.5	6.0	22.8	<0.01	<0.1
WSR2	Avg.	33.0	9.0	8.9	7.5	2.2	3.8	23.7	<0.01	<0.1
	Min.	32.1	7.7	7.6	6.7	1.4	2.5	21.1	<0.01	<0.1
	Max.	33.7	9.9	9.9	8.4	2.6	8.0	28.0	<0.01	<0.1
WSR3	Avg.	33.1	9.2	9.3	7.2	2.1	4.1	21.9	<0.01	<0.1
	Min.	32.5	7.8	7.9	6.7	1.2	2.5	21.1	<0.01	<0.1
	Max.	33.5	10.1	10.1	7.4	2.6	7.0	22.6	<0.01	<0.1
WSR4	Avg.	33.1	9.1	9.0	7.1	2.0	4.0	22.0	<0.01	<0.1
	Min.	32.4	7.3	7.3	6.6	1.2	2.5	21.2	<0.01	<0.1
	Max.	34.2	10.5	10.4	7.5	2.5	7.0	22.8	<0.01	<0.1
WSR16	Avg.	33.1	9.1	9.2	7.1	2.1	4.3	22.0	<0.01	<0.1
	Min.	32.3	8.4	8.4	6.6	1.1	2.5	21.1	<0.01	<0.1
	Max.	34.2	10.4	10.4	7.4	2.8	10.0	22.7	<0.01	<0.1

Locations		Parameters								
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp. (°C)	TRC (mg/L)	Iron (mg/L)
			Surface & Middle	Bottom						
WSR33	Avg.	33.1	9.0	8.9	7.2	2.2	3.9	22.0	<0.01	<0.1
	Min.	32.3	8.2	8.2	6.8	1.9	2.5	21.2	<0.01	<0.1
	Max.	33.7	10.1	10.1	7.4	2.8	7.0	22.7	<0.01	<0.1
WSR36	Avg.	33.5	9.2	9.2	7.2	2.4	4.1	21.9	<0.01	<0.1
	Min.	32.7	8.2	8.2	6.7	2.1	2.5	21.1	<0.01	<0.1
	Max.	34.6	10.3	10.5	7.5	2.6	8.0	22.6	<0.01	<0.1
WSR37	Avg.	33.0	9.0	9.0	7.5	2.2	4.1	23.7	<0.01	<0.1
	Min.	31.8	7.5	7.5	6.7	1.8	2.5	21.1	<0.01	<0.1
	Max.	33.8	10.3	10.2	8.4	2.5	9.0	28.0	<0.01	<0.1
NF1	Avg.	33.1	9.0	9.0	7.2	2.2	4.1	21.9	<0.01	<0.1
	Min.	32.5	8.2	8.2	6.7	1.6	2.5	20.9	<0.01	<0.1
	Max.	33.6	9.8	10.1	7.4	2.5	8.0	22.8	<0.01	<0.1
NF2	Avg.	32.9	9.0	9.0	7.1	2.0	4.0	21.8	<0.01	<0.1
	Min.	32.3	7.4	7.4	6.5	1.3	2.5	20.9	<0.01	<0.1
	Max.	33.5	10.1	10.1	7.4	2.6	7.0	22.6	<0.01	<0.1
NF3	Avg.	33.0	9.0	8.8	7.2	2.1	4.1	21.9	<0.01	<0.1
	Min.	32.3	7.6	7.6	6.6	1.3	2.5	20.9	<0.01	<0.1
	Max.	34.0	10.1	10.0	7.5	2.6	8.0	22.8	<0.01	<0.1

Notes:

i. "Avg", "Min" and "Max" is the average, minimum and maximum respectively of the data from measurements conducted under mid-flood and mid-ebb tides at three water depths, except that of DO where the data for "Surface & Middle" and "Bottom" are calculated separately.

ii. Measurement data of Suspending Solids would be rounding to 2.5mg/L if the value was less than 2.5mg/L to facilitate data analysing.

Disinfection

3.26. Dechlorinated effluent monitoring at two sampling locations (Contact Tank / Product Water Tank) was carried out by AJCJV on 24 November 2023. The disinfection for the Connection to distribution network was carried out on 2 & 3 December 2023.

3.27. Seven (7) of dechlorinated effluent sample were taken in contact tank/ product water tank.

3.28. No TRC exceedance of action or limit levels was obtained during the discharge of dechlorinated effluent.

3.29. Monitoring results of TRC in this reporting month summarized in **Table 3.8**.

Table 3.8 Summary of dechlorinated effluent Monitoring Results

Location	**Contact Tank / Product Water Tank flushing after neutralization**						
Date	02 Dec 2023	03 Dec 2023	03 Dec 2023	03 Dec 2023	03 Dec 2023	03 Dec 2023	03 Dec 2023
Time	23:59	01:00	02:00	03:00	04:00	05:00	06:00
TRC (mg/L)	0.04	0.04	0.03	0.02	0.01	0.00	0.01

4. WASTE

4.1. The waste generated from this Contract includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the Contract are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Contract, the quantities of different types of waste generated in the reporting month are summarized in **Table 4.1**. Details of cumulative waste management data are presented as a waste flow table in **Appendix H**.

Table 4.1 Quantities of Waste Generated from the Contract during the reporting period

Reporting Month	**Actual Quantities of Inert C&D Materials Generated Monthly**						**Actual Quantities of C&D Wastes Generated Monthly**				
	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	Plastics (1)	Chemical Waste	Others, e.g., general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Dec 2023	215.229	0.000	0.000	0.000	215.220	0.000	0.000	0.000	0.000	0.000	79.680

Notes: (1) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

5. LANDFILL GAS MONITORING

MONITORING REQUIREMENT

5.1. In accordance with Section 11 of the EM&A Manual, monitoring of landfill gas is required for construction works within the 250m Consultation Zone. Part of the desalination plant and the indicative area of natural slope mitigation works fall within the SENT Landfill Extension Consultation Zone; and part of the 1,200 mm diameter fresh water mains along Wan Po Road falls within the SENT Landfill and SENT Landfill Extension Consultation Zones, TKO Stage II/III Restored Landfill and TKO Stage I Restored Landfill Consultation Zones.

MONITORING PROGRAMME

5.2. Since part of the desalination plant (Wan Po Road and MIC compound/Basketball Court) and the indicative area of natural slope mitigation works fall within the SENT Landfill Extension Consultation Zone in this contract (Figure 5.1), landfill gas monitoring would be required for Wan Po Road and MIC compound/Basketball Court (Figure 5.2) if excavations were conducted at more than 300mm deep. Although SENT Landfill Extension has commenced operation since November 2021, no excavation works were conducted at MIC compound/Basketball Court. Hence no landfill gas monitoring would be scheduled for MIC compound/Basketball Court at the current stage.

MONITORING LOCATION

5.3. Monitoring of oxygen, methane, carbon dioxide and barometric pressure would be performed for excavations at 1m depth or more within the consultation Zone.

5.4. During construction of works within the consultation zones, excavations of 1m depth or more was monitored:

- At the ground surface before excavation commences;
- Immediately before any worker enters the excavation;
- At the beginning of each working day for the entire period the excavation remains open; and
- Periodically through the working day whilst workers are in the excavation.

5.5. For excavations between 300mm and 1m deep, measurements were carried out:

- Directly after the excavation has been completed; and
- Periodically whilst the excavation remains open.

5.6. The area required to be monitored for landfill gas in the reporting period is shown in **Figure 5.1**.

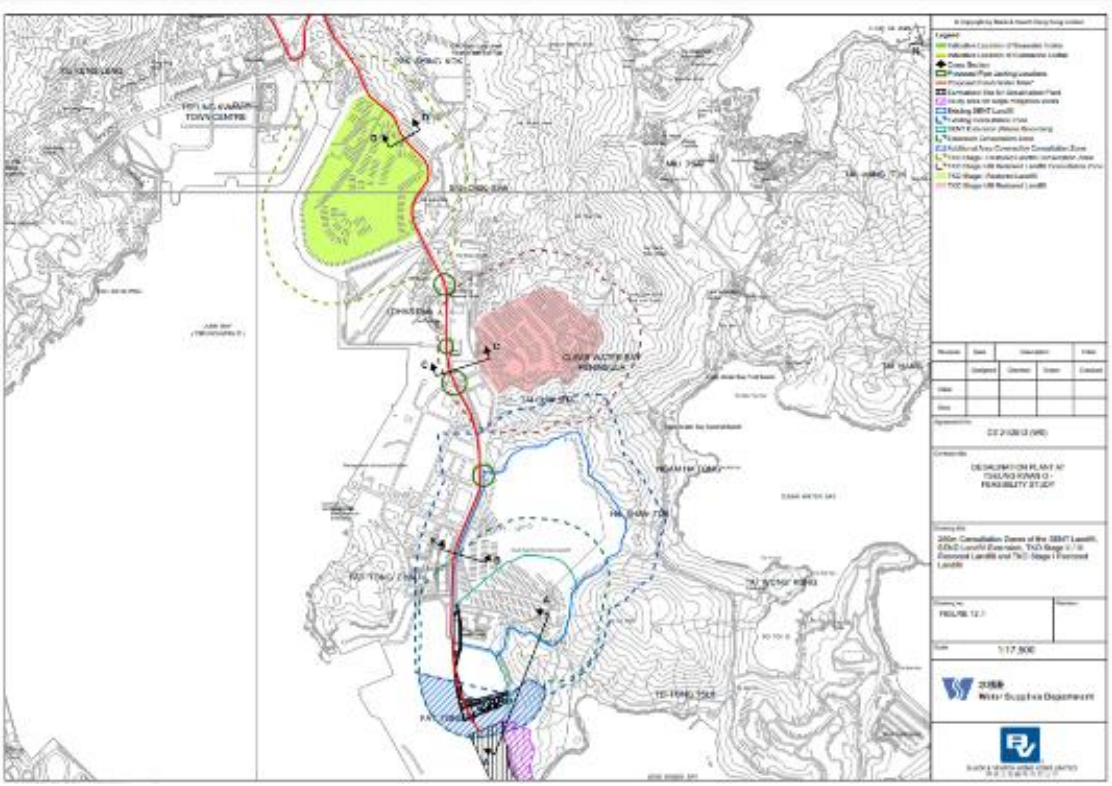


Figure 5.1 Overview of the SENT Extension Consultation Zone and the Contract Site Area

MONITORING PARAMETERS

5.7. The landfill gas monitoring parameters and the action and limit level are summarized in **Table 5.1**.

Table 5.1 Action and Limit Level for Landfill Gas Monitoring Equipment

Parameters	Action Level	Limit Level
Oxygen (O_2)	<19% O_2	<19% O_2
Methane (CH_4)	>10% LEL	>20% LEL
Carbon Dioxide (CO_2)	>0.5% CO_2	>1.5% CO_2

MONITORING EQUIPMENT

5.8. Landfill Gas monitoring was carried out using intrinsically-safe, portable multi-gas monitoring instruments. The gas monitoring equipment is:

- Complying with the Landfill Gas Hazard Assessment Guidance Note as intrinsically safe;
- Capable of continuous barometric pressure and gas pressure measurements;
- Normally operated in diffusion mode unless required for spot sampling, when it should be capable of operating by means of an aspirator or pump;
- Having low battery, fault and over range indication incorporated;
- Capable of storing monitoring data, and shall be capable of being downloaded directly;
- Measure in the following ranges:

methane	0-100% LOWER EXPLOSION LIMIT (LEL) AND 0-100% V/V;
oxygen	0-25% V/V;
carbon dioxide	0-5% v/v; and
barometric pressure	mBar (absolute)

- alarm (both audibly and visually) in the event that the concentrations of the following are exceeded:

methane	>10% LEL;
oxygen	<19%
carbon dioxide	>0.5% by volume
barometric pressure	mBar (absolute)

5.9. Monitoring equipment used in the reporting period are summarized in **Table 5.2**. The Landfill Gas monitoring equipment calibration certificate is presented in **Appendix F**.

Table 5.2 Landfill Gas Monitoring Equipment

Equipment	Brand and Model	Calibration Expiry Date
Portable Gas Detector	GMI PS500 – 25492809/21	21 August 2024

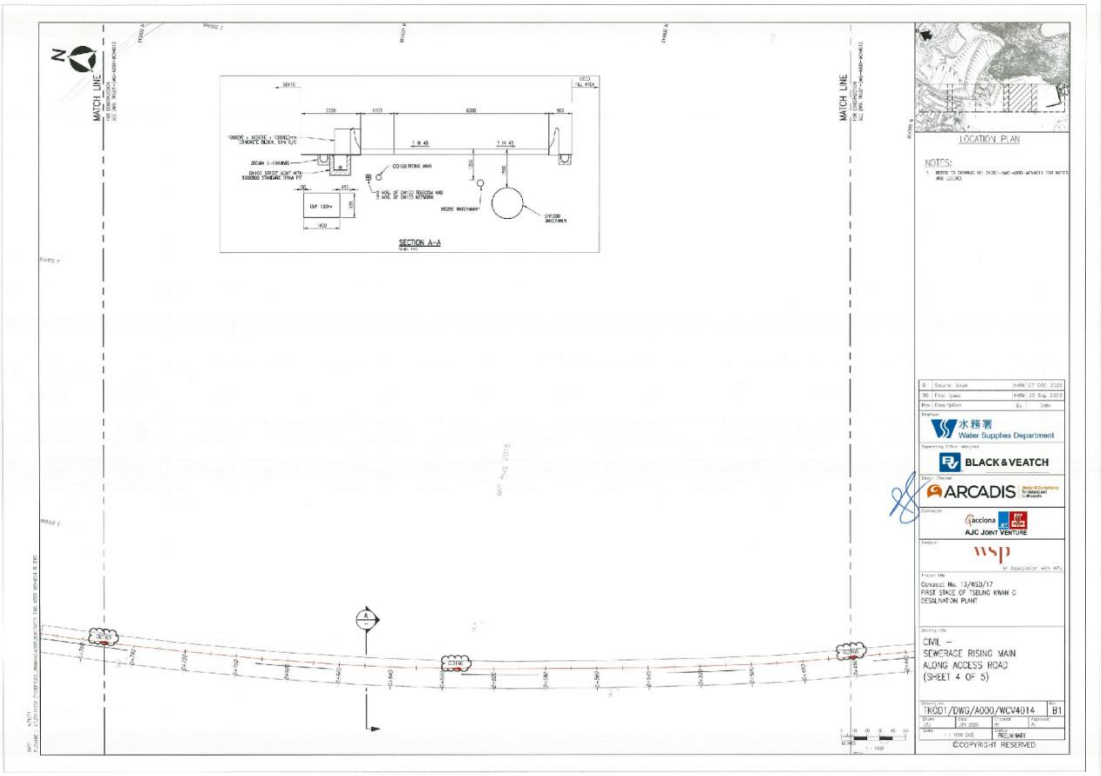


Figure 5.2 Location Map for Landfill Gas Monitoring at TKO Area 137 (-0+440 – -0+760)

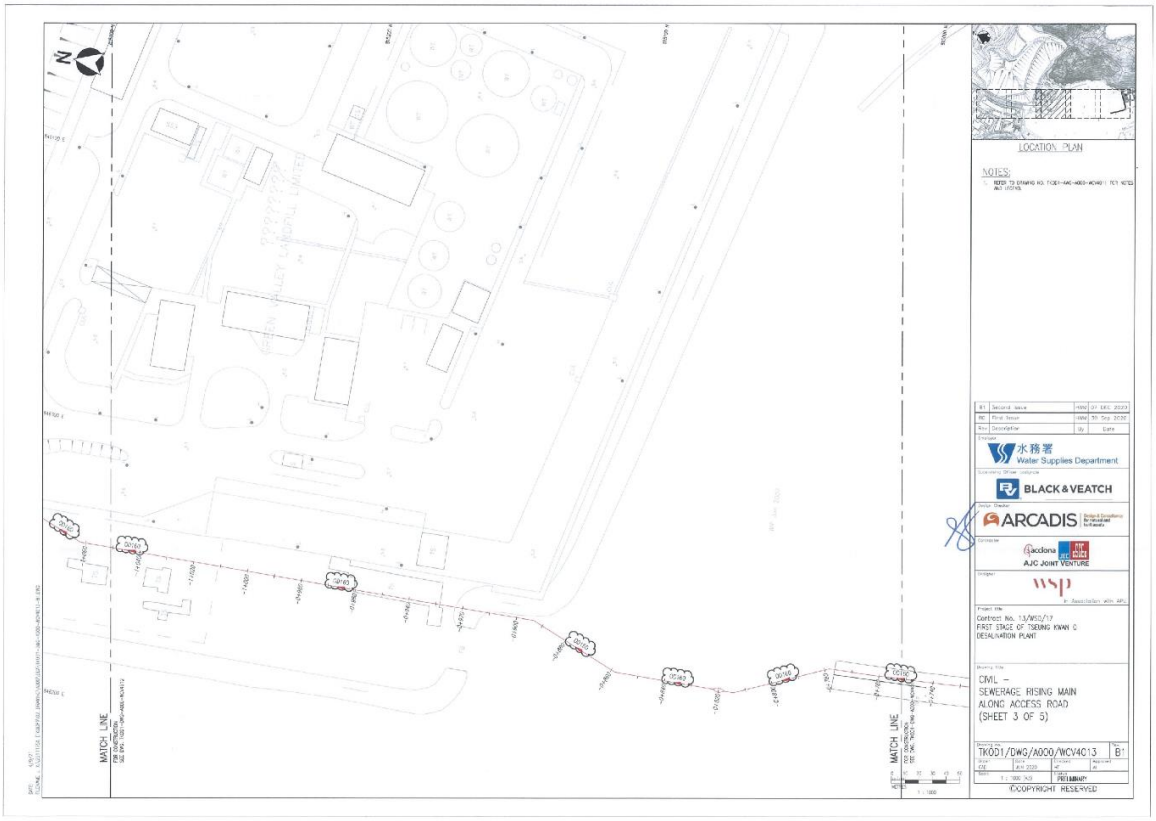


Figure 5.3 Location Map for Landfill Gas Monitoring at TKO Area 137 (-0+740 – -1+060)

MONITORING RESULTS AND OBSERVATIONS

5.10. In this reporting period, 72 times of landfill gas monitoring were conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day at TKO Area 137 (Ch1+340 – Ch1+600). No exceedance of action or limit levels for methane, oxygen and carbon dioxide was recorded. Detail of landfill gas monitoring results are presented in **Appendix G**.

6. ECOLOGY

MONITORING REQUIREMENTS

6.13. In accordance with Section 8.1 of the EM&A Manual, weekly site audit shall be carried out by the ET include checking whether good site practices are being properly implemented by the Contractor and the extent of the works area within the Clear Water Bay Country Park should be checked by the ET during the weekly site audit.

SITE INSPECTION

6.14. Weekly site audit was carried out by the ET in the reporting month, no trespass by the Contractor outside the works area of the Project and Clear Water Bay Country Park, and no damage to the vegetation and rocky shore outside the Project area was observed in the reporting month. Retained trees was properly protected during the construction works, no unacceptable construction works was observed.

6.15. If non-compliance were found during the construction works, the actions in accordance with the Event and Action Plan will be carried out according to **Appendix E.**

7. SUMMARY OF EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

7.13. The Environmental Complaint Handling Procedure is shown in below **Figure 6.1**:

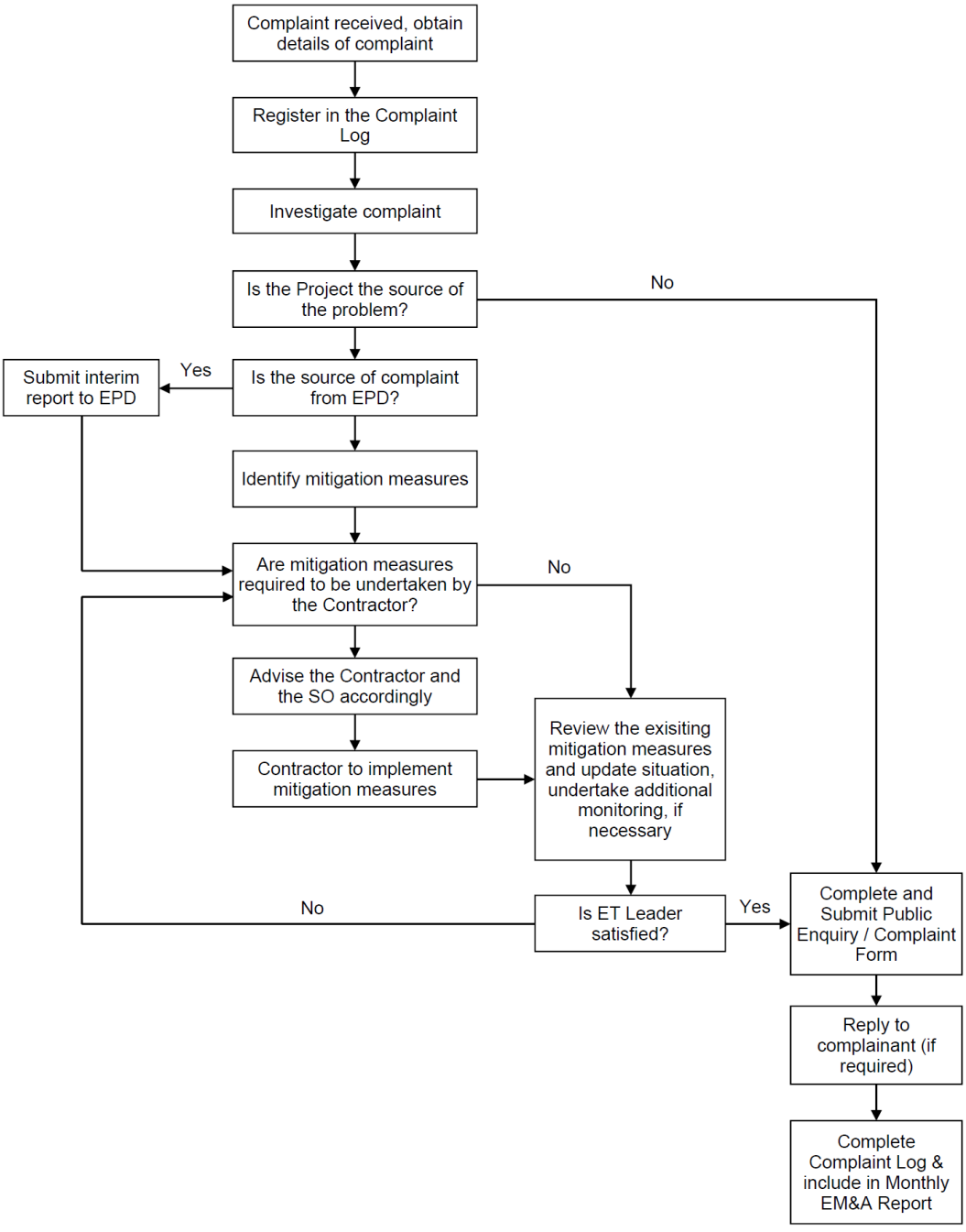


Figure 6.1 Environmental Complaint Handling Procedures

7.14. No noise monitoring was conducted during the reporting period since there are no Contract-related construction activities undertaken within a radius of 300m from the monitoring locations. No action Level exceedance for construction noise monitoring was recorded in the reporting month.

7.15. General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) are ceased from 1 September 2023 due to the completion of marine-related construction works.

7.16. The EM&A works for commissioning phase water quality were conducted during the reporting period in accordance with the EM&A Manual

7.17. Thirty-five (35) of the commissioning phase water quality monitoring results of SS obtained had exceeded the Action Level. Twenty-seven (27) of the commissioning phase water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. After investigation, all exceedances were concluded unrelated to the Project.

7.18. Seven (7) of dechlorinated effluent sample were taken in contact tank/ product water tank on 3 December 2023.

7.19. No TRC exceedance of action or limit levels was obtained during the discharge of dechlorinated effluent.

7.20. In this reporting period, 72 times of landfill gas monitoring were conducted at TKO Area 137 (Ch1+340 – Ch1+600). No action or limit level exceedance was recorded during the reporting period.

7.21. No environmental complaint, notification of summons and prosecution was received in the reporting month. Statistics on complaint and notification of summons and prosecution are summarized in **Appendix J**.

8. EM&A SITE INSPECTION

8.13. Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, site inspections were carried out on 5, 12, 19 and 27 December 2023 at the site portions listed in **Table 7.1** below.

Table 7.1 Summaries of Site Inspection Record

Date	Inspected Site Portion	Time
5 December 2023	TKO Area 137	14:30 – 15:30
12 December 2023	TKO Area 137	14:30 – 15:30
19 December 2023	TKO Area 137	14:30 – 15:30
27 December 2023	TKO Area 137	09:15 – 10:45

8.14. Joint site inspections with IEC were carried out on 12 and 27 December 2023.

8.15. Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 7.2**.

Table 7.2 Site Observations

Date	Environmental Observations	Follow-up Status
5 Dec 2023	No major environmental deficiency was observed.	N/A
12 Dec 2023	No major environmental deficiency was observed.	N/A
19 Dec 2023	No major environmental deficiency was observed.	N/A
27 Dec 2023	No major environmental deficiency was observed.	N/A

7.1. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix C**. Site inspection proforma of the reporting period is provided in **Appendix I**.

9. FUTURE KEY ISSUES

9.13. Works to be undertaken in the next reporting month are:

Administration Building • Landscaping works on roof of building. • External wall aluminum features installation • Finishing works for dog house. • Installation of building services, cable laying, electrical switchboard, Pressure Test, electrical switchboard, testing and commissioning
Chemical building • Landscape work at roof • Construction of hose reel cabinet. • Defect rectification
Main Electrical & Central Chiller Plant Building • Installation of Roof Tile for Fuel Tank Room • Minor Installation of building services, electrical switchboard, cable laying, Pressure Test
ActiDAFF • Underground utility construction work • Installation of access opening covers for filtered water tank • Carrying out finishing works for staircase no. 3 • Minor Installation of mechanical equipment, piping system, building services, electrical switchboards and cable laying, fiber-reinforced plastic cover Installation
Product Water Storage Tank Building • Water Test in Tank A • Waterproofing work at Roof Slab on Tank A • Tank A water test and defect rectification • Installation of building services, cable laying, Installation of mechanical equipment, steel pipe, Pressure Test
OSCG Building • Installation of Railing on Brine Maker Tank • Protective Coating for dangerous goods Rooms • Installation of building services, mechanical equipment and cable laying, Lightning Installation, testing and commissioning
Reverse Osmosis Building • Installation of Handrailings • Installation of Glass House

• Installation of building services, electrical switchboard, cable laying, Photovoltaic Panel. Minor Installation of mechanical equipment and raised floor, testing and commissioning • Underground utility construction work
Post Treatment Building • Installation of Cat Ladders in Water Tanks • Placing Soil Mix at Roof • Curb Construction for Rescue Opening at Water Tanks • Installation of building services, mechanical equipment and piping system, Pressure Test
Inspection corridor • Construction of roof tiling works • Installation of steel balustrade at roof • Installation of Movement Joints • Installation of glass window • Installation of building services, Lift Installation
CO_2 Tanks • Tank surface cleaning, testing and commissioning Combined Shaft and Pump room • Internal finishing, defect rectification Guard House • Installation of Building Services • Workshop construction work Other • Glass Roof and Glass Canopy installation at elevated walkway • Security Fence footing construction work • Manhole 5 Glass Reinforced Plastic Installation work • Underground utility rectification work • Road Construction • Traffic signage work • Footpath Construction • Landscape Construction • Landscape planting work • Irrigation System Construction • Slope work – Shotcreteing; Rock anchor installation, Rock break • Water Pressure Test for Fire Services and Plumbing System • Open Channel and Wave deflector Wall • Traffic signage work

9.14. The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from excavation and construction works;
- Waste generation from construction activities

9.15. The key environmental mitigation measures for the Project in the coming reporting period associated with the above construction works will include:

- Dust suppression by regular wetting and water spraying for construction works;
- Reduction of noise from equipment and machinery on-site by regular checking of on-site plant/vehicle to ensure proper functioning;
- Sorting and storage of general refuse and construction waste; and
- Deployment of silt curtain at the marine areas.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1. This is the 46th Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 December to 31 December 2023, in accordance with the EM&A Manual and the requirement under FEP-01/503/2015/A.

10.2. No noise monitoring was conducted in the reporting period due to the over distant monitoring station from the works location, in which construction activities were not undertaken within a radius of 300m from the monitoring locations.

10.3. The marine water quality programme was ceased from 1 September 2023 due to the completion of marine-related construction works.

10.4. The EM&A works for commissioning phase water quality were conducted during the reporting period in accordance with the EM&A Manual

10.5. Thirty-five (35) of the commissioning phase water quality monitoring results of SS obtained had exceeded the Action Level. Twenty-seven (27) of the commissioning phase water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. After investigation, all exceedances were concluded unrelated to the Project.

10.6. Seven (7) of dechlorinated effluent sample were taken in contact tank/ product water tank on 3 December 2023.

10.7. No TRC exceedance of action or limit levels was obtained during the discharge of dechlorinated effluent.

10.8. In this reporting period, 72 times of landfill gas monitoring were conducted at TKO Area 137 (Ch2+340 -Ch1+600). No action or limit level exceedance was recorded in the reporting period.

10.9. Weekly environmental site inspections were conducted during the reporting period. Observations and reminders were reported during the site inspections. All items are rectified within the reporting period. The environmental performance of the project was therefore considered satisfactory.

10.10. According to the environmental site inspections performed in the reporting month, the Contractor is reminded to pay attention on chemical storage, site hygiene and dust suppression mitigation measures.

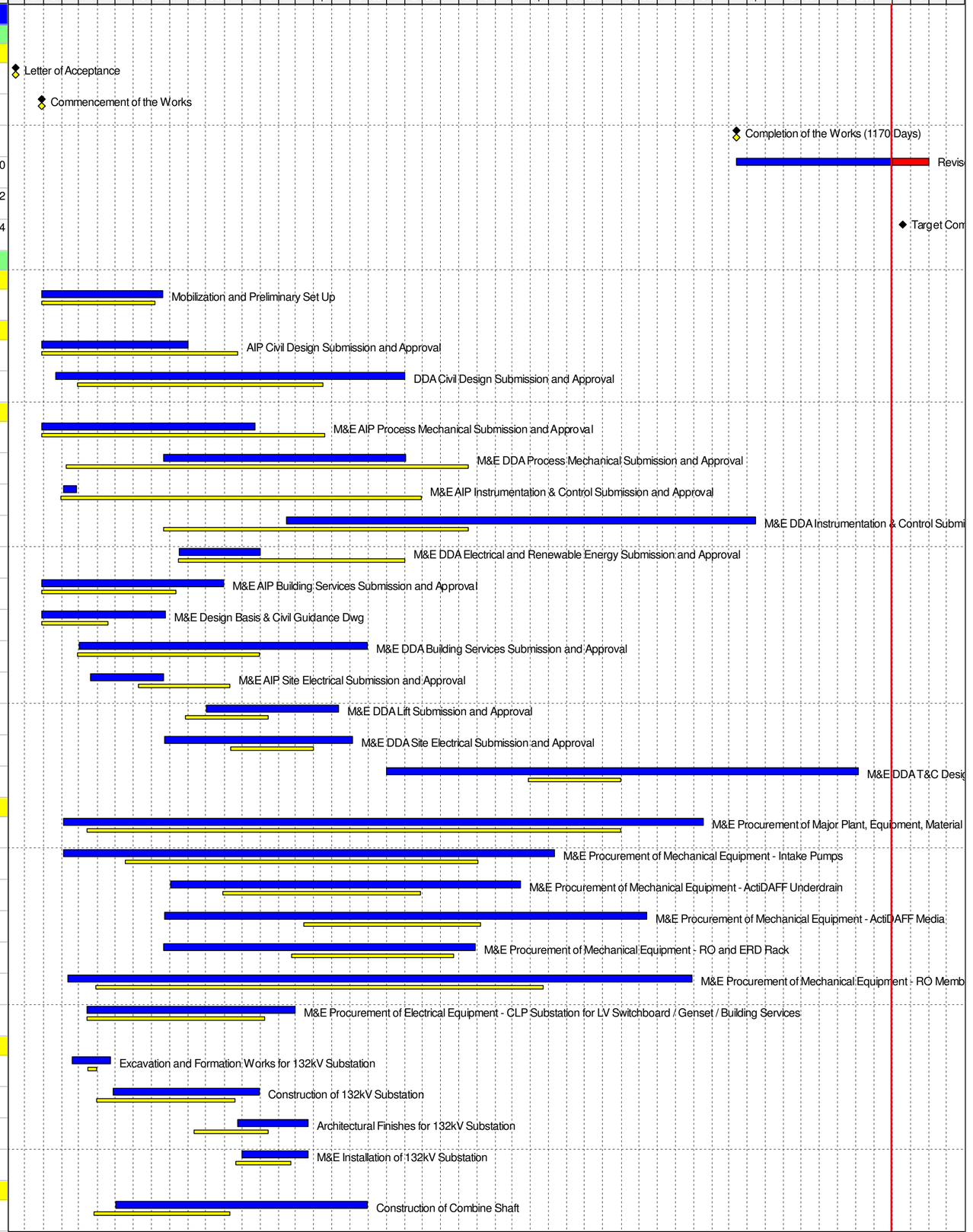
10.11. No environmental complaint, notification of summons and prosecution was received in the reporting period.

10.12. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A

Master Programme

Activity ID	Activity Name	Baseline Duration	Baseline Start	Baseline Finish	Remaining Duration	Actual / Planned Start	Actual / Planned Finish	Actual % Complete	Variance Finish Date	Total Float
Project Programme Updated as at_30 Nov 2023 (Level 2)										
Key Dates										
Commencement and Completion Date										
KD0000100	Letter of Acceptance	0	15-Nov-19		0	15-Nov-19 A		100%	0	
KD0000110	Commencement of the Works	0	30-Dec-19		0	30-Dec-19 A		100%	0	
KD0000120	Completion of the Works (1170 Days)	0		13-Mar-23	0		13-Mar-23 A	100%	0	
KD0000130	Revised Completion of the Works (324 Days EOT Granted)	0			62	14-Mar-23 A	31-Jan-24	80.86%		0
KD0000510	Planned Completion of the Works	0			0		20-Aug-24	0%		-202
KD0000520	Target Completion of the Works (Best Endeavour)	0			0		18-Dec-23	0%		44
Executive Summaries										
Preliminary Setup										
ES0001000	Mobilization and Preliminary Set Up	191	30-Dec-19	07-Jul-20	0	30-Dec-19 A	20-Jul-20 A	100%	-13	
Civil Design AIP and DDA										
ES0001010	AIP Civil Design Submission and Approval	330	30-Dec-19	23-Nov-20	0	30-Dec-19 A	31-Aug-20 A	100%	84	
ES0001020	DDA Civil Design Submission and Approval	414	28-Feb-20	16-Apr-21	0	22-Jan-20 A	01-Sep-21 A	100%	-138	
M&E Design AIP and DDA										
ES0002000	M&E AIP Process Mechanical Submission and Approval	477	30-Dec-19	19-Apr-21	0	30-Dec-19 A	22-Dec-20 A	100%	118	
ES0002010	M&E DDA Process Mechanical Submission and Approval	679	08-Feb-20	17-Dec-21	0	21-Jul-20 A	02-Sep-21 A	100%	106	
ES0002020	M&E AIP Instrumentation & Control Submission and Approval	607	31-Jan-20	28-Sep-21	0	04-Feb-20 A	25-Feb-20 A	100%	581	
ES0002030	M&E DDA Instrumentation & Control Submission and Approval	514	22-Jul-20	17-Dec-21	0	13-Feb-21 A	14-Apr-23 A	100%	-483	
ES0002050	M&E DDA Electrical and Renewable Energy Submission and Approval	382	16-Aug-20	01-Sep-21	0	17-Aug-20 A	31-Dec-20 A	100%	244	
ES0002060	M&E AIP Building Services Submission and Approval	226	30-Dec-19	11-Aug-20	0	30-Dec-19 A	30-Oct-20 A	100%	-80	
ES0002065	M&E Design Basis & Civil Guidance Dwg	112	30-Dec-19	19-Apr-20	0	30-Dec-19 A	24-Jul-20 A	100%	-96	
ES0002070	M&E DDA Building Services Submission and Approval	306	28-Feb-20	29-Dec-20	0	01-Mar-20 A	30-Jun-21 A	100%	-183	
ES0002085	M&E AIP Site Electrical Submission and Approval	155	09-Jun-20	10-Nov-20	0	21-Mar-20 A	22-Jul-20 A	100%	111	
ES0002090	M&E DDA Lift Submission and Approval	140	27-Aug-20	13-Jan-21	0	01-Oct-20 A	12-May-21 A	100%	-119	
ES0002095	M&E DDA Site Electrical Submission and Approval	140	11-Nov-20	30-Mar-21	0	23-Jul-20 A	04-Jun-21 A	100%	-66	
ES0002100	M&E DDA T&C Design Submission and Approval	155	29-Mar-22	30-Aug-22	0	01-Aug-21 A	05-Oct-23 A	100%	-401	
Procurement of Major Plant & Equipment Schedule										
ES0002320	M&E Procurement of Major Plant, Equipment, Material and Delivery	901	14-Mar-20	31-Aug-22	0	04-Feb-20 A	16-Jan-23 A	100%	-138	
ES2420	M&E Procurement of Mechanical Equipment - Intake Pumps	595	18-May-20	02-Jan-22	0	04-Feb-20 A	11-May-22 A	100%	-129	
ES2430	M&E Procurement of Mechanical Equipment - ActiDAFF Underdrain	333	30-Oct-20	27-Sep-21	0	02-Aug-20 A	14-Mar-22 A	100%	-168	
ES2440	M&E Procurement of Mechanical Equipment - ActiDAFF Media	298	15-Mar-21	06-Jan-22	0	23-Jul-20 A	14-Oct-22 A	100%	-281	
ES2450	M&E Procurement of Mechanical Equipment - RO and ERD Rack	274	22-Feb-21	22-Nov-21	0	22-Jul-20 A	28-Dec-21 A	100%	-36	
ES2460	M&E Procurement of Mechanical Equipment - RO Membrane	755	29-Mar-20	22-Apr-22	0	12-Feb-20 A	28-Dec-22 A	100%	-250	
ES2470	M&E Procurement of Electrical Equipment - CLP Substation for LV Switchboard / Genset / Building Services	300	14-Mar-20	07-Jan-21	0	14-Mar-20 A	28-Feb-21 A	100%	-52	
132kV Substation										
ES0001460	Excavation and Formation Works for 132kV Substation	15	16-Mar-20	30-Mar-20	0	19-Feb-20 A	23-Apr-20 A	100%	-24	
ES0001470	Construction of 132kV Substation	233	31-Mar-20	18-Nov-20	0	27-Apr-20 A	30-Dec-20 A	100%	-42	
ES0001480	Architectural Finishes for 132kV Substation	126	11-Sep-20	14-Jan-21	0	23-Nov-20 A	22-Mar-21 A	100%	-67	
ES0002240	M&E Installation of 132kV Substation	93	20-Nov-20	20-Feb-21	0	01-Dec-20 A	22-Mar-21 A	100%	-30	
Combine Shaft										
ES0001060	Construction of Combine Shaft	229	27-Mar-20	10-Nov-20	0	02-May-20 A	30-Jun-21 A	100%	-232	

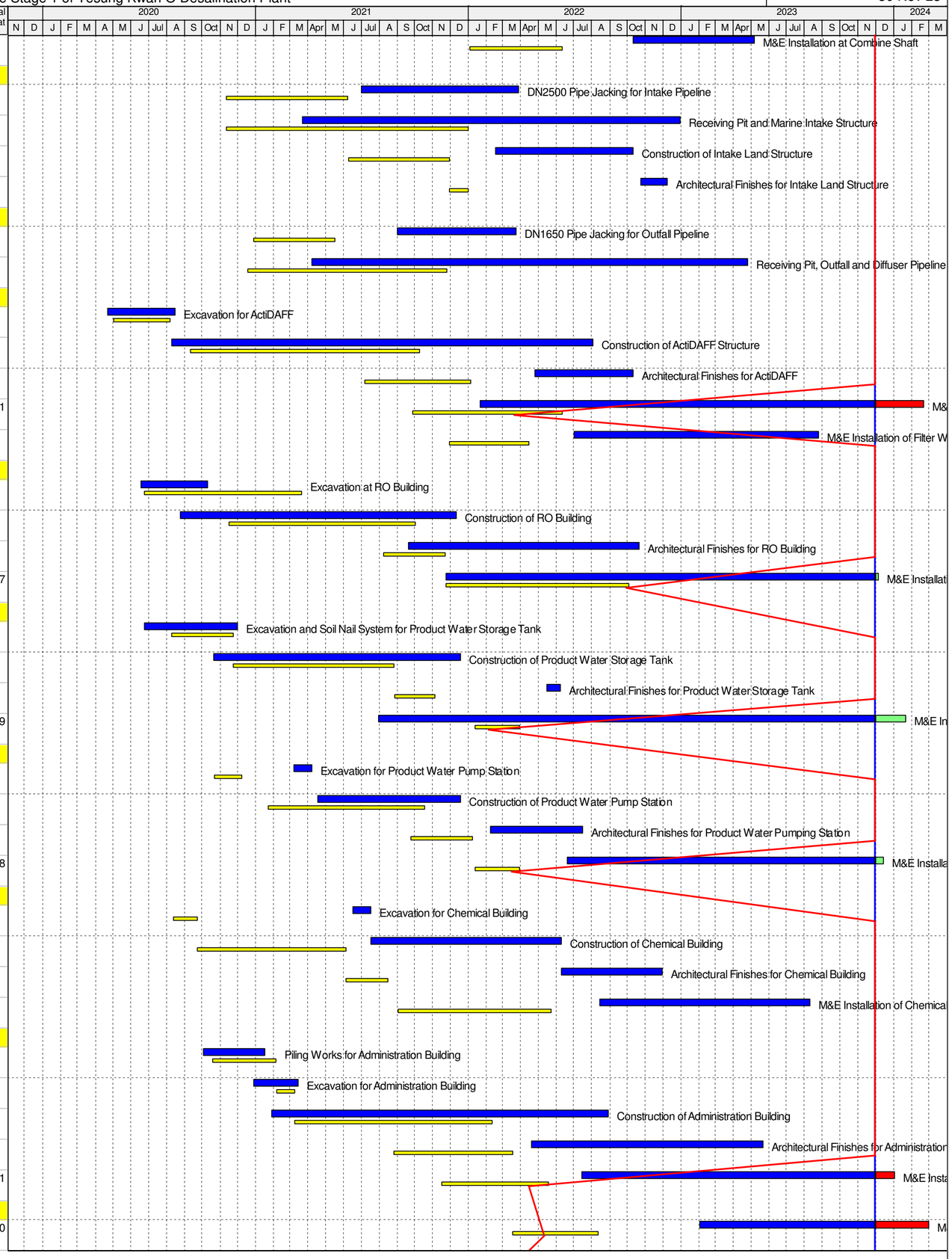


Summary Bar | Actual Work | Target Milestone
Actual Level of Effort | Early Bar | Milestone
Target Bar | Critical Bar

Appendix E - Project Programme (Level 2) Update

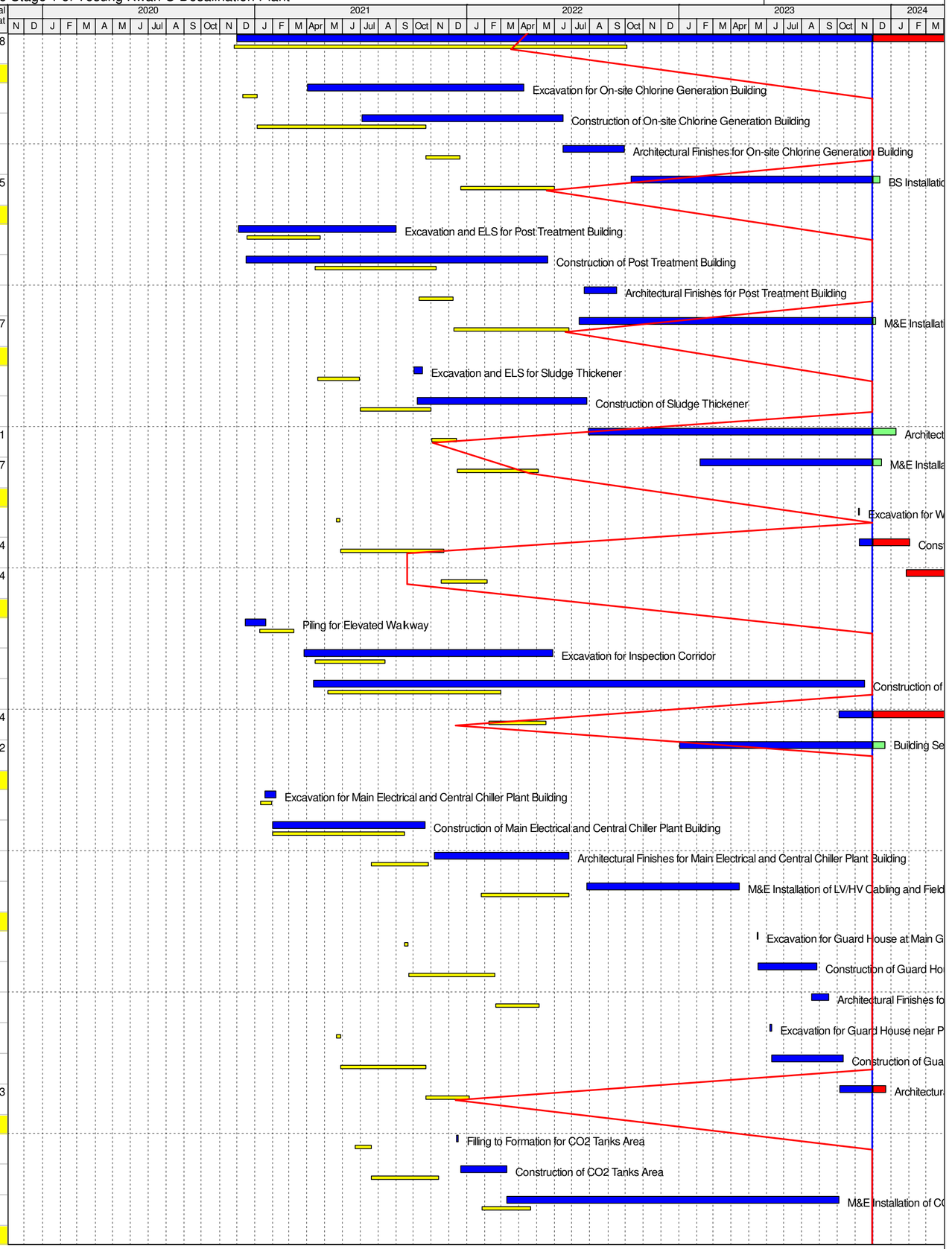
AJC Joint Venture

Activity ID	Activity Name	Baseline Duration	Baseline Start	Baseline Finish	Remaining Duration	Actual / Planned Start	Actual / Planned Finish	Actual % Complete	Variance Finish Date	Total Float
ES0002120	M&E Installation at Combine Shaft	160	03-Jan-22	11-Jun-22	0	11-Oct-22 A	06-May-23 A	100%	-329	
Intake										
ES0001070	DN2500 Pipe Jacking for Intake Pipeline	210	11-Nov-20	08-Jun-21	0	02-Jul-21 A	28-Mar-22 A	100%	-293	
ES0001080	Receiving Pit and Marine Intake Structure	416	11-Nov-20	31-Dec-21	0	22-Mar-21 A	30-Dec-22 A	100%	-364	
ES0001110	Construction of Intake Land Structure	174	09-Jun-21	29-Nov-21	0	17-Feb-22 A	10-Oct-22 A	100%	-315	
ES0001120	Architectural Finishes for Intake Land Structure	32	30-Nov-21	31-Dec-21	0	24-Oct-22 A	08-Dec-22 A	100%	-342	
OutFall										
ES0001090	DN1650 Pipe Jacking for Outfall Pipeline	140	29-Dec-20	17-May-21	0	01-Sep-21 A	24-Mar-22 A	100%	-311	
ES0001100	Receiving Pit, Outfall and Diffuser Pipeline	343	18-Dec-20	25-Nov-21	0	08-Apr-21 A	25-Apr-23 A	100%	-516	
ActiDAFF										
ES0001140	Excavation for ActiDAFF	97	02-May-20	06-Aug-20	0	22-Apr-20 A	15-Aug-20 A	100%	-9	
ES0001150	Construction of ActiDAFF Structure	393	11-Sep-20	08-Oct-21	0	10-Aug-20 A	03-Aug-22 A	100%	-299	
ES0001160	Architectural Finishes for ActiDAFF	183	07-Jul-21	05-Jan-22	0	25-Apr-22 A	10-Oct-22 A	100%	-278	
ES0002130	M&E Installation at ActiDAFF	257	28-Sep-21	11-Jun-22	83	22-Jan-22 A	21-Feb-24	97.22%	-620	-21
ES0002140	M&E Installation of Filter Water Tank and Pumping Station	137	29-Nov-21	14-Apr-22	0	01-Jul-22 A	24-Aug-23 A	100%	-497	
Reverse Osmosis Building										
ES0001170	Excavation at RO Building	270	24-Jun-20	20-Mar-21	0	18-Jun-20 A	10-Oct-20 A	100%	161	
ES0001180	Construction of RO Building	321	16-Nov-20	02-Oct-21	0	25-Aug-20 A	11-Dec-21 A	100%	-70	
ES0001190	Architectural Finishes for RO Building	106	09-Aug-21	22-Nov-21	0	20-Sep-21 A	21-Oct-22 A	100%	-333	
ES0002150	M&E Installation of RO Building	315	23-Nov-21	03-Oct-22	5	24-Nov-21 A	05-Dec-23	98.3%	-428	57
Product Water Storage Tank										
ES0001240	Excavation and Soil Nail System for Product Water Storage Tank	106	10-Aug-20	23-Nov-20	0	24-Jun-20 A	01-Dec-20 A	100%	-8	
ES0001250	Construction of Product Water Storage Tank	276	24-Nov-20	26-Aug-21	0	21-Oct-20 A	18-Dec-21 A	100%	-114	
ES0001260	Architectural Finishes for Product Water Storage Tank	70	27-Aug-21	04-Nov-21	0	16-May-22 A	07-Jun-22 A	100%	-215	
ES0002210	M&E Installation of Product Water Tank	78	12-Jan-22	30-Mar-22	53	31-Jul-21 A	22-Jan-24	95.76%	-663	9
Product Water Pumping Station										
ES0001270	Excavation for Product Water Pump Station	47	22-Oct-20	07-Dec-20	0	08-Mar-21 A	07-Apr-21 A	100%	-121	
ES0001280	Construction of Product Water Pump Station	270	22-Jan-21	18-Oct-21	0	17-Apr-21 A	18-Dec-21 A	100%	-61	
ES0001290	Architectural Finishes for Product Water Pumping Station	106	25-Sep-21	08-Jan-22	0	08-Feb-22 A	16-Jul-22 A	100%	-189	
ES0002215	M&E Installation of Product Water Pump Station	78	12-Jan-22	30-Mar-22	14	20-Jun-22 A	14-Dec-23	90%	-624	48
Chemical Building										
ES0001300	Excavation for Chemical Building	42	12-Aug-20	22-Sep-20	0	17-Jun-21 A	17-Jul-21 A	100%	-298	
ES0001310	Construction of Chemical Building	255	23-Sep-20	04-Jun-21	0	17-Jul-21 A	09-Jun-22 A	100%	-370	
ES0001320	Architectural Finishes for Chemical Building	73	05-Jun-21	16-Aug-21	0	09-Jun-22 A	30-Nov-22 A	100%	-471	
ES0002220	M&E Installation of Chemical Building	264	02-Sep-21	23-May-22	0	15-Aug-22 A	10-Aug-23 A	100%	-444	
Administration Building										
ES0001330	Piling Works for Administration Building	110	19-Oct-20	05-Feb-21	0	03-Oct-20 A	16-Jan-21 A	100%	20	
ES0001340	Excavation for Administration Building	31	06-Feb-21	08-Mar-21	0	28-Dec-20 A	15-Mar-21 A	100%	-7	
ES0001350	Construction of Administration Building	339	09-Mar-21	10-Feb-22	0	28-Jan-21 A	29-Aug-22 A	100%	-200	
ES0001360	Architectural Finishes for Administration Building	204	26-Aug-21	17-Mar-22	0	19-Apr-22 A	22-May-23 A	100%	-431	
ES0002230	M&E Installation of Admin Building	184	16-Nov-21	18-May-22	33	15-Jul-22 A	02-Jan-24	80.6%	-594	-61
Building Services & Lift Installation										
ES0002270	M&E Lift Installation	147	18-Mar-22	11-Aug-22	92	02-Feb-23 A	01-Mar-24	48%	-568	-30



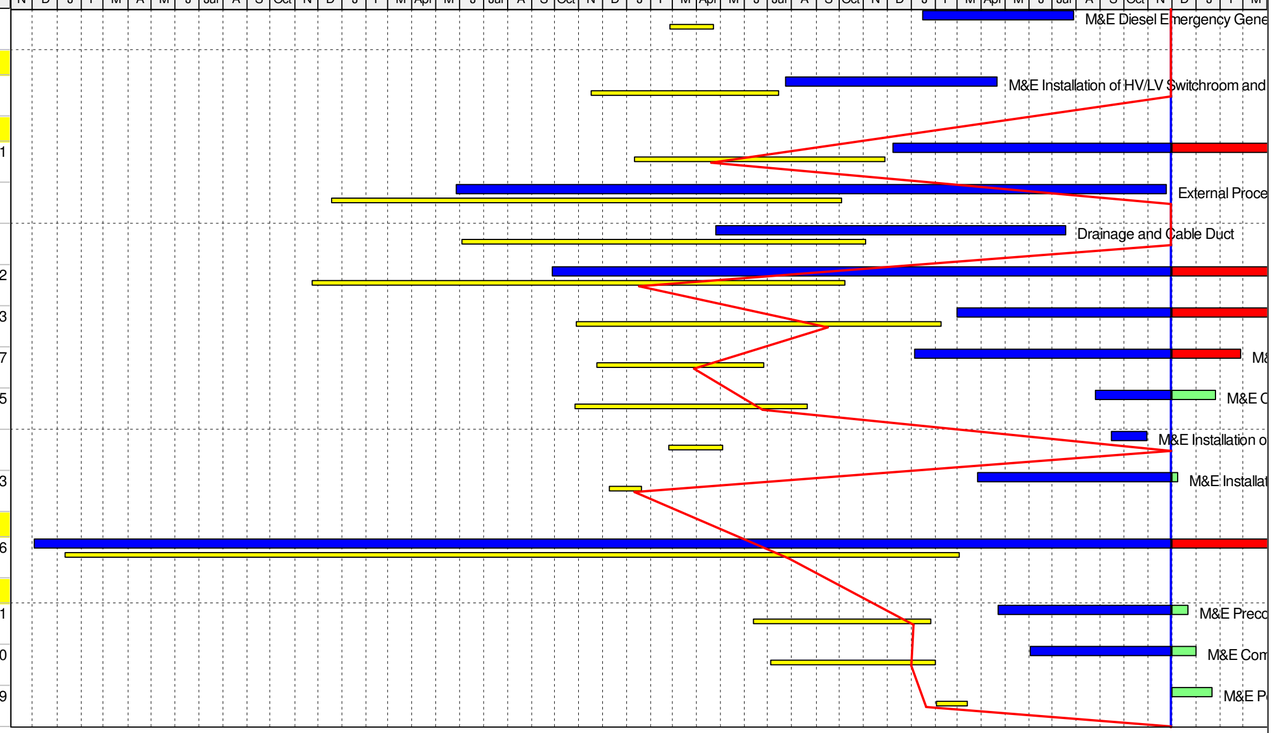
Summary Bar · Actual Work · Target Milestone
Actual Level of Effort · Early Bar · Milestone
Target Bar · Critical Bar

Activity ID	Activity Name	Baseline Duration	Baseline Start	Baseline Finish	Remaining Duration	Actual / Planned Start	Actual / Planned Finish	Actual % Complete	Variance Finish Date	Total Float
ES0002280	M&E Installation of Building Services	676	27-Nov-20	03-Oct-22	200	01-Dec-20 A	17-Jun-24	69.95%	-623	-138
OSCG Building										
ES0001400	Excavation for On-site Chlorine Generation Building	25	11-Dec-20	04-Jan-21	0	01-Apr-21 A	09-Apr-22 A	100%	-460	
ES0001410	Construction of On-site Chlorine Generation Building	291	05-Jan-21	22-Oct-21	0	05-Jul-21 A	15-Jun-22 A	100%	-236	
ES0001420	Architectural Finishes for On-site Chlorine Generation Building	59	23-Oct-21	20-Dec-21	0	16-Jun-22 A	28-Sep-22 A	100%	-282	
ES0002200	BS Installation of On-site Chlorine Generation Building (DG inspection)	162	21-Dec-21	31-May-22	13	11-Oct-22 A	13-Dec-23	86.76%	-561	5
Post Treatment Building										
ES0001210	Excavation and ELS for Post Treatment Building	126	19-Dec-20	23-Apr-21	0	03-Dec-20 A	01-Sep-21 A	100%	-131	
ES0001220	Construction of Post Treatment Building	209	14-Apr-21	08-Nov-21	0	17-Dec-20 A	19-May-22 A	100%	-192	
ES0001230	Architectural Finishes for Post Treatment Building	59	11-Oct-21	08-Dec-21	0	22-Jul-22 A	16-Sep-22 A	100%	-282	
ES0002180	M&E Installation of Post Treatment Building	199	09-Dec-21	25-Jun-22	5	14-Jul-22 A	05-Dec-23	94.51%	-528	57
Sludge Thickener										
ES0001680	Excavation and ELS for Sludge Thickener	73	19-Apr-21	30-Jun-21	0	02-Oct-21 A	16-Oct-21 A	100%	-108	
ES0001690	Construction of Sludge Thickener	121	02-Jul-21	30-Oct-21	0	08-Oct-21 A	26-Jul-22 A	100%	-269	
ES0001700	Architectural Finishes for Sludge Thickener	44	01-Nov-21	14-Dec-21	41	29-Jul-22 A	10-Jan-24	91.8%	-757	21
ES0002190	M&E Installation of Sludge Thickener	141	15-Dec-21	04-May-22	15	06-Feb-23 A	15-Dec-23	90%	-590	47
Workshop										
ES0001560	Excavation for Workshop	7	21-May-21	27-May-21	0	06-Nov-23 A	07-Nov-23 A	100%	-894	
ES0001570	Construction of Workshop	179	28-May-21	22-Nov-21	64	08-Nov-23 A	02-Feb-24	26%	-802	-144
ES0001580	Architectural Finishes for Workshop	81	17-Nov-21	05-Feb-22	81	27-Jan-24	16-Apr-24	0%	-801	-144
Inspection Corridor										
ES0001590	Piling for Elevated Walkway	60	09-Jan-21	09-Mar-21	0	15-Dec-20 A	19-Jan-21 A	100%	49	
ES0001600	Excavation for Inspection Corridor	121	14-Apr-21	12-Aug-21	0	26-Mar-21 A	28-May-22 A	100%	-289	
ES0001610	Construction of Inspection Corridor	299	06-May-21	28-Feb-22	0	12-Apr-21 A	16-Nov-23 A	100%	-626	
ES0001620	Architectural Finishes for Inspection Corridor	99	08-Feb-22	17-May-22	156	03-Oct-23 A	04-May-24	27%	-718	-94
ES0001625	Building Services for Inspection Corridor	0			21	03-Jan-23 A	21-Dec-23	85%		2
Main Electrical and Central Chiller Plant Building										
ES0001430	Excavation for Main Electrical and Central Chiller Plant Building	20	11-Jan-21	30-Jan-21	0	18-Jan-21 A	06-Feb-21 A	100%	-7	
ES0001440	Construction of Main Electrical and Central Chiller Plant Building	227	01-Feb-21	15-Sep-21	0	01-Feb-21 A	20-Oct-21 A	100%	-35	
ES0001450	Architectural Finishes for Main Electrical and Central Chiller Plant Building	99	20-Jul-21	26-Oct-21	0	06-Nov-21 A	25-Jun-22 A	100%	-242	
ES0002260	M&E Installation of LV/HV Cabling and Field Panels	152	25-Jan-22	25-Jun-22	0	27-Jul-22 A	14-Apr-23 A	100%	-293	
Guard House										
ES0001490	Excavation for Guard House at Main Gate	7	15-Sep-21	21-Sep-21	0	16-May-23 A	17-May-23 A	100%	-603	
ES0001500	Construction of Guard House at Main Gate	149	23-Sep-21	18-Feb-22	0	18-May-23 A	26-Aug-23 A	100%	-554	
ES0001510	Architectural Finishes for Guard House at Main Gate	76	19-Feb-22	05-May-22	0	18-Aug-23 A	15-Sep-23 A	100%	-498	
ES0001520	Excavation for Guard House near Pier	8	21-May-21	28-May-21	0	07-Jun-23 A	09-Jun-23 A	100%	-742	
ES0001530	Construction of Guard House near Pier	147	29-May-21	22-Oct-21	0	10-Jun-23 A	10-Oct-23 A	100%	-718	
ES0001540	Architectural Finishes for Guard House near Pier	74	23-Oct-21	04-Jan-22	23	05-Oct-23 A	23-Dec-23	71%	-718	-23
CO2 Tank										
ES0001370	Filling to Formation for CO2 Tanks Area	29	22-Jun-21	20-Jul-21	0	14-Dec-21 A	17-Dec-21 A	100%	-150	
ES0001380	Construction of CO2 Tanks Area	116	21-Jul-21	13-Nov-21	0	21-Dec-21 A	10-Mar-22 A	100%	-117	
ES0002170	M&E Installation of CO2 Tank Area	84	27-Jan-22	20-Apr-22	0	11-Mar-22 A	03-Oct-23 A	100%	-531	
Diesel Emergency Generator										



Summary Bar | Actual Work | Target Milestone
Actual Level of Effort | Early Bar | Milestone
Target Bar | Critical Bar

Activity ID	Activity Name	Baseline Duration	Baseline Start	Baseline Finish	Remaining Duration	Actual / Planned Start	Actual / Planned Finish	Actual % Complete	Variance Finish Date	Total Float
ES0002250	M&E Diesel Emergency Generator	57	25-Feb-22	22-Apr-22	0	16-Jan-23 A	28-Jul-23 A	100%	-462	
Switch Room and Transformer Installation										
ES0002300	M&E Installation of HV/LV Switchroom and Transformer	242	16-Nov-21	15-Jul-22	0	24-Jul-22 A	20-Apr-23 A	100%	-279	
Miscellaneous										
ES0001630	Remaining Architectural Finishes for All Buildings	322	11-Jan-22	28-Nov-22	223	09-Dec-22 A	10-Jul-24	91%	-590	-161
ES0001640	External Process and Non-Process Pipe	655	18-Dec-20	03-Oct-22	0	27-May-21 A	23-Nov-23 A	100%	-416	
ES0001650	Drainage and Cable Duct	518	04-Jun-21	03-Nov-22	0	25-Apr-22 A	18-Jul-23 A	100%	-257	
ES0001660	Slope Mitigation Works	684	23-Nov-20	07-Oct-22	264	28-Sep-21 A	20-Aug-24	20%	-683	-202
ES0001670	Landscaping Works	469	28-Oct-21	08-Feb-23	145	01-Mar-23 A	23-Apr-24	20%	-440	-83
ES0002290	M&E PV Panels	215	23-Nov-21	25-Jun-22	89	05-Jan-23 A	27-Feb-24	6%	-612	-27
ES0002310	M&E Chiller & Irrigation System Installation	298	27-Oct-21	20-Aug-22	57	25-Aug-23 A	26-Jan-24	16.4%	-524	5
ES0002350	M&E Installation of Surge Vessel	70	24-Feb-22	04-May-22	0	15-Sep-23 A	30-Oct-23 A	100%	-544	
ES0002390	M&E Installation of Thickened Sludge Holding Tank	42	09-Dec-21	19-Jan-22	9	27-Mar-23 A	09-Dec-23	26%	-689	13
Statutory Submission & Inspection										
ES0002330	Statutory Submission & Inspection	1148	11-Jan-20	03-Mar-23	218	03-Dec-19 A	05-Jul-24	87.7%	-490	-156
Testing and Commissioning										
ES0002400	M&E Precomissioning	229	12-Jun-22	26-Jan-23	22	22-Apr-23 A	22-Dec-23	84%	-330	31
ES0002410	M&E Commissioning	213	04-Jul-22	01-Feb-23	32	02-Jun-23 A	01-Jan-24	69%	-334	30
ES0002420	M&E Performance Test	40	02-Feb-23	13-Mar-23	53	01-Dec-23	22-Jan-24	0%	-315	9



Summary Bar
Actual Level of Effort
Target Bar
Actual Work
Early Bar
Critical Bar
Target Milestone
Milestone

Appendix B

Overview of Desalination Plant in Tseung Kwan O

N

846 500 E

847 000 E

814 500 N

814 000 N

TEMPORARY WORKS AREA 1

GLA-TSK 692 TGLA

GLA-TSK 692 TGLA

GLA/TRD-088

ROW FOR GLA/TRD-088

GLA-TSK 745 TGLA

GLA-TSK 567

PORTION A

PORTION B

PROPOSED WORKS LIMIT FOR SLOPE MITIGATION WORKS IN COUNTRY PARK

INDICATIVE LOCATION OF PROPOSED SEAWATER INTAKE

INDICATIVE LOCATION OF PROPOSED OUTFALL

A B C D E F G H I J K L M N O

LEGEND:

- BOUNDARY OF SENT LANDFILL EXTENSION
- BOUNDARY OF WORKS AREA FOR TKO DESALINATION PLANT
- SITE PHASING
- ALLOCATED LAND BOUNDARIES

GLA-TSK 692 TGLA

NOTE: TEMPORARY WORKS AREA 1 WILL BE HANDED OVER AT +6 MPD WITH A TOLERANCE OF ±500mm.

POINT	EASTING	NORTHING
A	846581.93	814505.03
B	846610.11	813979.23
C	846614.73	813975.12
D	846629.09	813997.84
E	846644.75	813986.74
F	846646.80	813985.28
G	846677.24	814034.67
H	846686.56	814028.89
I	846766.21	814158.11
J	846459.65	814448.83
K	846578.45	814048.11
L	846613.89	814105.63
M	846614.60	814117.96
N	846676.84	814207.77
O	846756.68	814164.57

PRELIMINARY – NOT FOR CONSTRUCTION

Revision	Date	Description	Initial
B	10/03	UPDATE NOTES	YLC
A	07/18	UPDATE COORDINATES	YLC

	Designed	Checked	Drawn	Checked
Initial	YLC	CKH	SZ	WLS
Date	02/18	02/18	02/18	02/18

Approved

Agreement No.
CE 8/2015 (WS)

Contract No.
13/WSD/17

Contract Title
DESIGN, BUILD AND OPERATE FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

Drawing Title
SITE HANDOVER WORKS AREAS

Drawing No.
190495/K/TEND/10/0003

Revision
B

Scale
A1 1 : 1500
A3 1 : 3000

水務署
Water Supplies Department

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

BUILDINGS IN FIRST STAGE

CODE	NAME OF BUILDING	TOTAL G.F.A. (m^2)	SITE COVERAGE (m^2)
B	COMBINE SHAFT	759,876	759,876
C	ACTIDAFF	10027,547	5455,346
G	REVERSE OSMOSIS BUILDING AND ELECTRICAL BUILDING	4511,455	5367,935
H	CO2 TANKS AREA	-	-
J	PRODUCT WATER STORAGE TANK, PUMP STATION AND ELECTRICAL BUILDING	1974,610	2833,980
K	SLUDGE TREATMENT BUILDING, TANK AND PUMP ROOM	2531,044	1228,361
M	ADMINISTRATION BUILDING & ELECTRICAL BUILDING C	2459,713	1114,062
N	MAIN ELECTRICAL AND CENTRAL CHILLER PLANT BUILDING	-	459,893
R1	ELECTROCHLORINATION BUILDING & ELECTRICAL BUILDING A	657,992	525,776
S	132 kV SUBSTATION	-	943,560
T	IRRIGATION WATER TANK AND PUMP ROOM	-	156,148
R2	CHEMICAL BUILDING	813,056	813,056
V	VISITOR GALLERY	1330,410	1330,410
X1	GUARD HOUSE AND FS CONTROL ROOM	39,585	39,585
X2	GUARD HOUSE	22,035	22,035
Y	R + D OUTDOOR	-	-
Z	WASTE WATER TREATMENT PLANT	48,000	48,000
	TOTAL =	25175,323	21498,023

LEGEND / ABBREVIATION

H/L WINDOW	HIGH LEVEL WINDOW
M.L.	METAL LOUVRES
C.L.	CAT LADDER
A.U.T.	ACCESSIBLE UNISEX TOILET
⊕	PROPOSED FINISH FLOOR LEVEL IN METER ABOVE P.D.
⊕	STRUCTURAL FLOOR LEVEL IN METER ABOVE P.D.
M/A/L	MECHANICAL VENTILATION & ARTIFICIAL LIGHTING
F.E.	4.5kg CO^2 FIRE EXTINGUISHER
H.R.	HOSE REEL
Ⓐ	FIREMAN'S LIFT
Ⓓ	LIFT FOR THE BARRIER FREE ACCESS
P.D.	PIPE DUCT

PLOT RATIO & SITE COVERAGE CALCULATION:

SITE AREA OF THE FIRST STAGE = 56108 m²

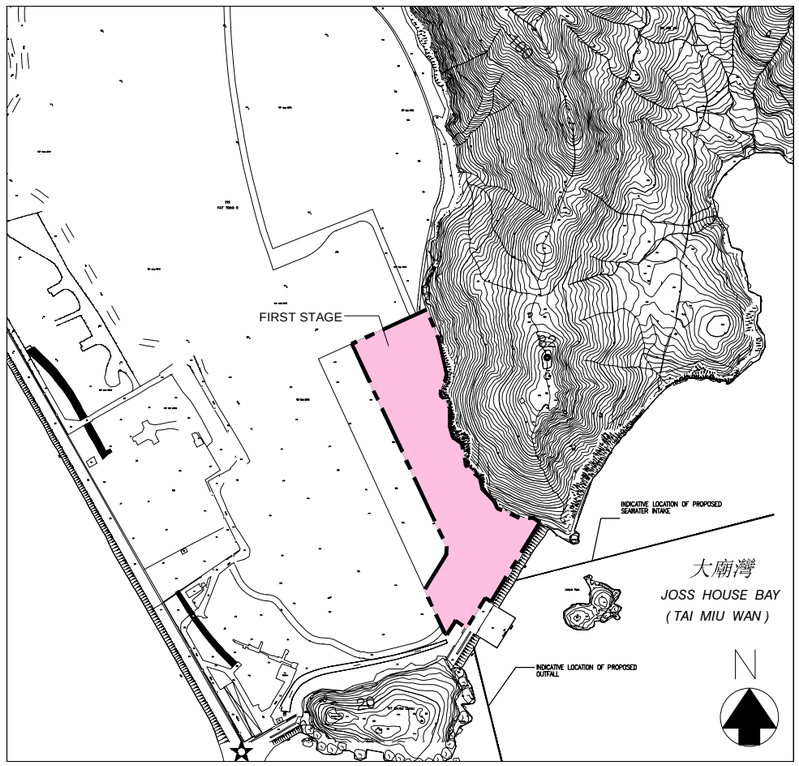
TOTAL G.F.A. = 25092.141 m²
TOTAL SITE COVERAGE = 21414.841 m²

PLOT RATIO = 25092.141 / 56108
= 0.447 < PERMITTED

SITE COVERAGE = 21414.841 / 56108 x 100
= 38.167%

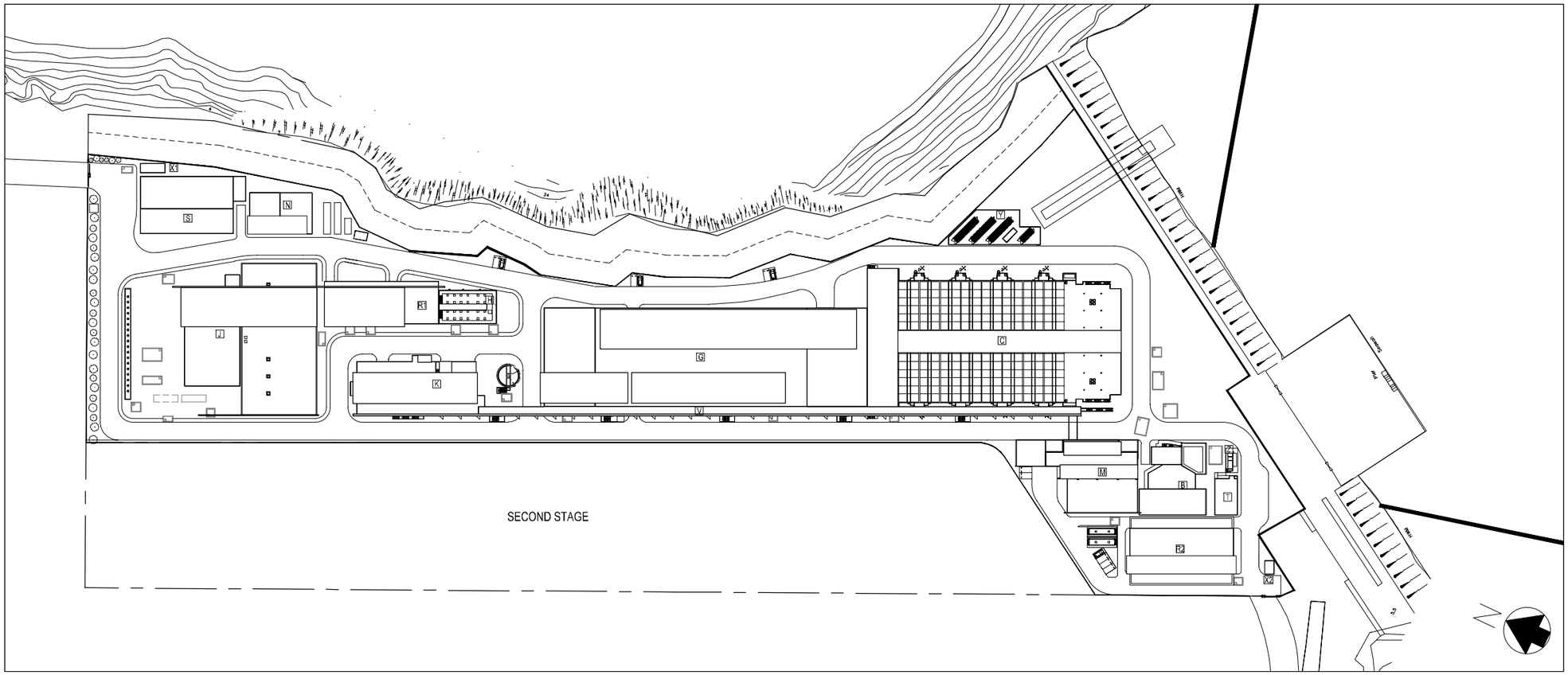
SITE LOCATION PLAN

1 : 5000



FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

1 : 1000



Rev	Description	By	Date
0	TENDER SUBMISSION	CAD	JAN 19

Employer
水務署
Water Supplies Department

Employer's Consultant
BLACK & VEATCH

Tenderer
acciona Agua JEC CRCC
AJC JOINT VENTURE

Designer
wsp

Project title
CONTRACT NO. 13/WSD/17

DESIGN, BUILD AND OPERATE
FIRST STAGE OF TSEUNG KWAN O
DESALINATION PLANT

Drawing title
ARCHITECTURAL –
PLOT RATIO AND SITE COVERAGE CALCULATION, LEGEND ABBREVIATION

Drawing no.	Rev.
TKO/AJC/W/A000/AR/001	0

Drawn	Date	Checked	Approved
CKAL	JAN 19	S.C.	T.C.

Scale	Status
N.T.S.	–

Appendix C

Summary of Implementation Status of Environmental Mitigation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Air Quality								
S4.8.1	Impervious dust screen or sheeting will be provided to enclose scaffolding from the ground floor level of building for construction of superstructure of the new buildings.	Land site/ During Construction	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust)
S4.8.1	Impervious sheet will be provided for skip hoist for material transport.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		NA	-
S4.8.1	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Dropping heights for excavated materials should be controlled to a practical height to minimize the fugitive dust arising from unloading.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards and should be dampened or covered before transport.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Wheel washing device should be provided at the exits of the work sites. Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty material from its body and wheels as far as practicable.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land site/ During Construction	Contractor(s)		✓		Implemented	-
S4.8.1	Hoarding of not less than 2.4m high from ground level will be provided along the length of the Project Site boundary.	Land site/ During construction	Contractor(s)	✓	✓		N/A	-
S4.8.1	Haul roads will be kept clear of dusty materials and will be sprayed with water so as to maintain the entire road surface wet at all times.	Land site/ During construction	Contractor(s)		✓		Implemented after reminder	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S4.8.1	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Land site/ During construction	Contractor(s)		✓		Implemented after reminder	-
S4.8.1	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	All exposed areas will be kept wet always to minimise dust emission.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	Ultra-low-sulphur diesel (ULSD) will be used for all construction plant on-site, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites.	Land site/ During construction/ During Operation	Contractor(s)		✓	✓	Implemented	Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites
S4.8.1	The engine of the construction equipment during idling will be switched off.	Land site/ During construction	Contractor(s)		✓		Implemented	-
S4.8.1	Concrete batching plant will be required on site. control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented. The control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented.	Land site/ During construction	Contractor(s)		✓		N/A	-
S4.8.1	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Land site/ During construction	Contractor(s)		✓		Implemented after observation	-
S4.10	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase, environmental site audits on weekly basis is recommended throughout the construction period.	Land site/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Noise								
S5.7	Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Mobile plant, if any, will be sited as far away from NSRs as possible.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum.	Noise control/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Plants known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Use of Quite Powered Mechanical Equipment (QPME).	Noise control/ During construction	Contractor(s)		✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Movable noise barriers of 3m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m-2 and have no o or gappeningss.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	The noise insulating sheet should be deployed such that there would be no opening or gaps on the joints.	Noise control/ During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	Construction activities (e.g. excavation/shoring, reinstatement (asphalt), and pipe jacking) will be planned and carried out in sequence, such that items of PME proposed for these activities will not be operated simultaneously.	Noise control/ During construction	Contractor(s)	✓	✓		Implemented	A Practical Guide for the Reduction of Noise from Construction Works
S5.7	PMEs will not be used at the works areas near educational institutions with residual impact (ie the "influence area" within a	Noise control / During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
	radius of 40m) during school hours in order to reduce impact to the educational institutions.							Construction Works
S5.7	Noise enclosures or acoustic sheds would be used to cover stationary PME such as generators. Portable/Movable noise enclosure made of material with superficial surface density of at least 7 kg m-2 may be used for screening the noise from operation of the saw/groover, concrete.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	-
S5.9	Sawcutting pavement, breaking up of pavement, excavation /shoring, pipe laying, backfilling, reinstatement (concrete) and pipe jacking shall be scheduled outside the examination period.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	-
S5.9	In view the duration of noise exceedance at Creative Secondary School, PLK Laws Foundation College, TKO Kei Tak Primary School and School of Continuing and Professional Studies-CUHK is limited to 8 weeks, the construction work in the influence areas near the four schools shall be scheduled during long school holidays (eg summer holiday, Easter holiday or Christmas holiday, etc) as far as practicable. Scheduling the construction work for the four schools.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		N/A	-
S5.10	A noise monitoring programme shall be implemented for the construction phase.	Designated monitoring stations as defined in EM&A Manual/During construction phase	Environmental Team		✓		N/A	-
S5.10	The effectiveness of on-site control measures could also be evaluated through the regular site audits.	All facilities/ During construction	Contractor(s)/ ET & Independent Environmental Checker (IEC)		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
Water Quality								
S6.9	Dredged marine sediment will be disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO).	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	Dumping at Sea Ordinance (DASO)
S6.9	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	Barges will be filled to a level, which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	All vessels must have a clean ballast system.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	No discharge of sewage/grey wastewater should be allowed. Wastewater from potentially contaminated area on working vessels should be minimized and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	Marine Dredging/ During construction	Contractor(s)		✓		Implemented	-
S6.9	No soil waste is allowed to be disposed overboard.	Marine Dredging/ During construction	Contractor(s)		✓		N/A	-
S6.9	Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	ProPECC PN 1/94 TM Standard under the WPCO
S6.9	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation status	Relevant Legislation & Guidelines
				D	C	O		
S6.9	Appropriate surface drainage will be designed and provided where necessary.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94.	Land site & drainage/ During construction	Contractor(s)	✓	✓		Implemented	ProPECC PN 1/94
S6.9	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land site & drainage/ During construction	Contractor(s)		✓		N/A	-
S6.9	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Land site & drainage/ During construction	Contractor(s)		✓		Implemented	-
S6.9 and S6.12	The sterilization water should be dechlorinated with total residual chlorine (TRC) level below 1 mg/L before discharge to public sewer. In situ testing of TRC should also be conducted for the discharge of chlorinated water for pipeline disinfection to ensure sufficient dechlorination before discharge to public sewer.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	N/A	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.9	The cleaning and flushing water should also be treated and desilted to the relevant discharge requirement stipulated in TM-DSS before discharging.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	Implemented	
S6.9	Site drainage should be well maintained, and good construction practices should be observed to ensure that oil, fuels, solvents, and other chemicals are managed, stored and handled properly and do not enter the nearby water streams.	Land site & drainage/ During construction/ During operation	Contractor(s)		✓	✓	Implemented	-
S6.12	Regular site inspections will be carried out in order to confirm that regulatory requirements are being met and that contractors are implementing the standard site practice and mitigation measures as proposed to reduce potential impacts to water quality.	During construction	Contractor(s)/ ET & IEC		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Waste Management								
S8.5	Nomination of approved personnel to be responsible for standard site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Training of site personnel in proper waste management and chemical handling procedures. Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse, and recycling at the beginning of the construction works.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Provision of sufficient waste disposal points and regular collection for disposal.	All area/ During construction/ During operation	Contractor(s)		✓	✓	Implemented	DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All area/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A waste management plan (WMP) as stated in the "ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites" for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.	All area/ During construction	Contractor(s)		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	All area/ During construction	Contractor(s)		✓		Implemented	Chapters 2 & 3 Code of Practice on the Packaging, Labelling & Storage of Chemical Wastes published under the Waste Disposal Ordinance (Cap 354), Section 35
S8.5	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	Land site/ During construction	Contractor(s)		✓		Implemented	Waste Disposal Ordinance (Cap 354)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	A recording system for the amount of wastes generated/ recycled and disposal sites. The trip- ticket system will be included as one of the contractual requirements and implemented by the contractor(s).	Land site/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	Land site/ During construction/ During operation	Contractor(s)		✓		Implemented	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Encourage collection of aluminium cans and wastepaper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce.	Land site/ During construction	Contractor(s)		✓		Implemented	ETWB TCW No. 33/2002, Management of Construction and Demolition Material Including Rock
S8.5	Any unused chemicals and those with remaining functional capacity will be recycled as far as possible.	Land site/ During construction	Contractor(s)		✓		N/A	-
S8.5	Use of reusable non-timber formwork to reduce the amount of C&D materials.	All areas/ During construction	Contractor(s)		✓		Implemented	WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Prior to disposal of construction waste, wood, steel, and other metals will be separated to the extent practical, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill.	All areas/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Proper storage and site practices to reduce the potential for damage or contamination of construction materials.	All areas/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.	All areas/ During construction	Contractor(s)		✓		Implemented	-
S8.5	A Sediment Quality Report (SQR) for sampling and chemical testing of the sediment will be prepared and submitted to the EPD for approval. The approved detailed sampling and chemical testing will be carried out prior to the commencement of the dredging activities to confirm the sediment disposal method.	Marine works/ During construction	Contractor(s)		✓		N/A	ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	The management of dredged/ excavated sediment management requirement from ETWB TC(W) No. 34/2002 will be incorporated in the Specification of the Contract Documents.	Marine works/ During construction	WSD/ Contractor(s)		✓		Implemented	ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)
S8.5	The contractor will open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation
S8.5	A trip-ticket system will be established in accordance with DEVB TC(W) No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	Contract mobilization/ During construction	Contractor(s)		✓		Implemented	DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	The project proponent will also conduct regular inspection of the waste management measures implemented on site as described in the Waste Management Plan.	All area/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		Implemented	ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	A recording system (similar to summary table as shown in Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.	All area/ During construction	Contractor(s)		✓		Implemented	Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005
S8.5	Inert C&D materials (public fill) will be reused within the Project as far as practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Public fill and construction waste shall be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	To reduce the potential dust and water quality impacts of site formation works, C&D materials will be wetted as quickly as possible to the extent practice after filling.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R); WPCO (Cap 358)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	Open stockpiles of excavated/ fill materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		Implemented	Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S8.5	Chemical waste container shall be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Chemical waste container shall have a capacity of less than 450 L unless the specifications have been approved by the EPD.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	A label in English and Chinese shall be displayed on the chemical container in accordance with instructions prescribed in Schedule 2 of the Regulations.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	Storage areas for chemical waste shall be enclosed on at least 3 sides.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	Storage areas for chemical waste shall have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	Storage areas for chemical waste shall have adequate ventilation.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	Storage areas for chemical waste shall be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary).	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	Storage areas for chemical waste shall be arranged so that incompatible materials are appropriately separated.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	
S8.5	General refuse will be stored in enclosed bins or compaction units separately from construction and chemical wastes.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented after reminder	
S8.5	Adequate number of waste containers will be provided to avoid over-spillage of waste.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	DEVB TC(W) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness.

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S8.5	A reputable waste collector will be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	-
S8.5	Recycling bins will be provided at strategic locations within the Site to facilitate recovery of recyclable materials (including aluminum can, wastepaper, glass bottles and plastic bottles) from the Site. Materials recovered will be sold for recycling.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Implemented	-
S8.5	To avoid any odour and litter impact, accurate number of portable toilets will be provided for workers on-site.	All area/ During construction	Contractor(s)		✓		Implemented	-
S8.5	The burning of refuse on construction sites is prohibited by law.	All area/ During construction	Contractor(s)		✓		Implemented	Air Pollution Control Ordinance (Cap 311)
S8.7	To facilitate monitoring and control over the contractors' performance on waste management, a waste inspection and audit programme will be implemented throughout the construction phase.	All facilities/ During construction	ET/ IEC		✓		Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Ecology								
S9.7	For slope mitigation works within the Clear Water Bay Country Park, to avoid tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels can be adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical. A detailed specification describing the exact locations of the flexible barrier foundation plates, soil nails and rock dowels will be prepared to illustrate how the setback distance from existing trees would be implemented for tree avoidance.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		Implemented	-
S9.7	Pruning of tree canopies along the alignment of the flexible barriers shall be limited to a minimum.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	
S9.7	The alignment of flexible barriers shall be optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable. All individuals of *Marsdenia lachnostoma* within the slope mitigation areas shall be retained *in- situ*, by positioning the alignment of flexible barrier at a minimum 1.5m in a radius away from these individuals.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		Implemented	-
S9.7 and 9.10	At the detailed design stage prior to the commencement of the slope mitigation works, a vegetation survey shall be carried out at the slope mitigation areas within the Clear Water Bay Country Park to assess the condition and identify the location of each individual of *Marsdenia lachnostoma* and other flora species of conservation interest that may be directly affected by the construction works.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓			Implemented	-
S9.7	Temporary fencing will be installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction. A sign identifying the site shall be attached to the fence and flagging tape shall be attached to the individuals to visualize their locations.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7 and S9.10	A specification for fencing and demarcating individuals of *Marsdenai lachnostoma* (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers will be prepared to protect the species.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Induction training shall also be provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S9.7	The resident site supervisory staff will closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity.	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Erect fences along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Regularly check the work site boundaries to ensure that they are not breached, and that damage does not occur to surrounding areas.	All area/ During construction	Contractor(s)/ ET		✓		Implemented	-
S9.7	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal.	All area/ During construction	Contractor(s)		✓		Implemented	-
S9.7	Reinstate temporarily affected areas, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting. The tree/shrub species will be chosen with reference to those in the surrounding area.	All area/ During construction	Contractor(s)		✓		To be implemented	-
S9.7	Affected habitats within the Clear Water Bay Country Bay shall be reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works.	All area/ During construction	Contractor(s)		✓		To be implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Landscape & Visual								
S11.10 & 11.11	The construction area and area allowed for temporary structures, such as the contractor's office, will be minimized to a practical minimum. (MM1)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	At the detailed design stage, the design team will seek to minimize the landscape footprint of the Project and above ground facilities, while satisfying all other requirements. (MM2)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to: - green roofs where practical (i.e. without equipment on the roof); - roadside planting; - aesthetic treatment of all structures; - vertical greening; - screen planting along application site; and - landscape enhancement with amenity planting where practical including planting along the edge (site boundary) fence with native shrubs where feasible, to reduce their visual impact and blend them into the surrounding landscape. (MM3)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-
S11.10 & 11.11	All trees within the Project Site or the potential slope mitigation works area will be carefully protected during construction according to DEVB TCW No. 10/2013 – Tree Preservation (MM4)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	ETWB TCW No. 3/2006 - Tree Preservation.
S11.10 & 11.11	No tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where necessary and practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments. A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 10/2013. (MM5)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	DEVB TC(W) No. 10/2013
S11.10 & 11.11	Any slope mitigation works necessary to address natural terrain hazards, will be minimized to minimize any potential environmental impact to the Country Park e.g. soil nailing and rock stabilization will aim to avoid existing trees e.g. should any restoration of vegetation be necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation. (MM6)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S11.10 & 11.11	Dredging works for the installation of intake structures and outfall diffusers should be minimized to avoid or reduce any potential environmental impacts to as low as reasonably practicable (ALARP). The intake and outfall structures (e.g. intake openings and diffuser heads) will be prefabricated and transferred to site for installation. (MM7)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	
S11.10 & 11.11	All night-time lighting will be reduced to a practical minimum both in terms of number of level and will be hooded and directional. (MM8) units and lux level and will be hooded and directional. (MM8)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	Implemented	-

Note: D – Design stage C – Construction O – Operation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
Landfill Gas Hazard								
S12.7	During all works, safety procedures should be implemented to minimize the risks of fires and explosions, asphyxiation of workers and toxicity effects resulting from contact with contaminated soil and groundwater.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	-
S12.7	During trenching and excavation as well as creation of confined spaces at near to or below ground level, precautions should be clearly laid down and rigidly Gas detection equipment and appropriate breathing apparatus should be available and used when entering confined spaces or trenches deeper than 1 meter.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	The Contractor should make the workers are aware of potential hazards of working in confined spaces (any chamber, manhole or culvert which is large enough to permit access to personnel). Such work in confined spaces is controlled by the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance. Following the Safety Guide to Working in Confined Spaces ensures compliance with the above regulations.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Safety officers, specifically trained with regard to landfill gas and leachate related hazards and the appropriate actions to take in adverse circumstances, should be present on the site throughout the works, in particular, when works are undertaken below grade.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Monitoring for landfill gas should be undertaken in all excavations, manholes, chambers (particularly during pipe jacking) and any confined spaces through the use of an intrinsically safe portable instrument, appropriately calibrated and capable of measuring the concentrations of methane. carbon dioxide and oxygen.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Monitoring frequency and areas to be monitored should be specified prior to commencement of groundwork, either by the Safety Officer, or by an appropriately qualified person. All measurements should be recorded and documented.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Proceed drilling with adequate care and precautions against the potential hazards which may be encountered.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Implementation Status	Relevant Legislation & Guidelines
				D	C	O		
S12.7	Prior to the commencement of the site works, the drilling contractor should devise a 'method-of- working' statement covering all normal and emergency procedures (including but not limited to number of operatives, experience and special skills of operatives, normal method of operations, emergency procedures, *supervisors* responsibilities, storage and use of safety equipment, safety procedures and signs, barriers and guarding). The site *supervisor* and all operatives must be familiar with this statement.	All area/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	Where below ground service entries are necessary to the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II), the entry point should be sealed to prevent gas entry. In addition, any below grade cable trenches entering the Incoming Switchgear Room and 132 kV Substation can become the pathway for landfill gas and hence grilled metal covers should be used.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	N/A	
S12.7	It is recommended regular landfill gas monitoring should be carried out at the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II). The monitoring frequency will be monthly for the first year of operation. If the monitoring results show no sign of landfill gas migration, reduce the monitoring frequency to once every six months.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	N/A	
S12.7	The manholes and utility pits within the Project Site and along the fresh water mains. Each manhole/ utility pit should be monitored with two measurements (at mid depth and base). Each measurement should be monitored for a minimum of 10 minutes. A steady reading and peak reading should be recorded at each manhole/ utility pit and for each measurement. The need for venting the manhole/ utility pit and further monitoring will be reviewed after the initial monitoring.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	
S12.7	All construction, operation and maintenance personnel working on-site as well as visitors should be made aware of the hazards of landfill gas and its possible presence on-site. This should be achieved through a combination of posting warning signs in prominent places and also by access to detailed information on landfill gas hazards and the designs and procedural means by which these hazards are being minimized on-site.	All area/ Detailed design/ During construction/operation	Contractor(s)	✓	✓	✓	Implemented	

Note: D – Design stage C – Construction O – Operation

Appendix D

Impact Monitoring Schedule

Contract No. 13/WSD/17
Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Tentative Commissioning Phase Water Quality Monitoring Schedule (December 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	13	14 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	15	16 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3
17	18	19 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	20	21 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	22	23 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3
24	25	26 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	27	28 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3	29	30 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3
31						

Remarks:
1.Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids, Iron, Total Residual Chlorine
2.No anti-scalant was added in the Reverse Osmosis System, anti-scalant will not be included in the water quality monitoring

Contract No. 13/WSD/17
Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Tentative Impact Monitoring Schedule for Dechlorinated Procedure (December 2023)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
						Impact Water Quality monitoring for Dechlorinated Procedure (T1GKC01AA502/manhole 18)
3	4	5	6	7	8	9
Impact Water Quality monitoring for Dechlorinated Procedure (T1GKC01AA502/manhole 18)						
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Remarks:
1.Monitoring Parameters: Total Residual Chlorine

Contract No. 13/WSD/17
Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Tentative Water Quality Monitoring Schedule (January 2024)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 09:38 - 13:08		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 10:52 - 14:22		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 11:50 - 15:20
7	8	9	10	11	12	13
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-ebb: 08:54 - 11:49		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-ebb: 10:24 - 13:22		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood:08:14 - 11:44
14	15	16	17	18	19	20
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 08:49 - 12:19		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 10:13 - 13:43		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 08:00 - 09:05
21	22	23	24	25	26	27
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 09:24 - 12:54		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-ebb: 11:00 - 13:25		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 08:00 - 11:18
28	29	30	31			
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37, NF1, NF2, NF3 Monitoring Time: Mid-flood: 08:00 - 11:19				

Remarks:
1. Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids

Note:
- Due to safety concern of vessel transportation earlier than 0700, Water Quality Monitoring would start at 0800.
- Prioritized routing: Mid-ebb: CE→WSR16→WSR37→WSR36→WSR33→Remaining stations and Mid-flood: CF→WSR1→WSR2→WSR3→WSR4→Remaining stations

Appendix E

Event / Action Plan

Table E1 Event and Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	1. Carry out investigation to identify the source and cause of the complaint/ exceedance(s) 2. Notify IEC, ER, and Contractor and report the results of investigation to the Contractor, ER and the IEC 3. Discuss with the Contractor and IEC for remedial measures required 4. If the complaint is related to the Project, conduct additional monitoring for checking mitigation effectiveness and report the findings and results to the IEC, ER and the Contractor	1. Review the analyzed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of Notification of Exceedance in writing 2. Require Contractor to propose remedial measures for the analysed noise problem 3. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals, if required, to the IEC and ER 2. Implement noise mitigation proposals.
Limit Level	1. Carry out investigation to identify the source and cause of the exceedance 2. Notify IEC, ER, Project Proponent, EPD and Contractor 3. Repeat measurements to confirm findings 4. Provide investigation report to IEC, ER, EPD and Contractor he causes of the exceedances 5. If the exceedance is related to the Project, assess effectiveness by additional monitoring. 6. Report the remedial action implemented and the additional monitoring results to IEC, EPD, ER and Contractor 7. If exceedance stops, cease additional monitoring	1. Review the analyzed results submitted by the ET 2. Discuss the potential remedial measures with ER, ET Leader and Contractor 3. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 4. Supervise the implementation of remedial measures	1. Confirm receipt of Notification of Exceedance in writing 2. Require the Contractor to propose remedial measures for the analysed noise problem 3. Ensure remedial measures are properly implemented 4. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor, in agreement with the Project Proponent, to stop that activity of work until the exceedance is abated	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant activity of works as determined by the Project Proponent until the exceedance is abated

Notes : ET = Environmental Team, IEC = Independent Environmental Checker; ER = Engineering Representatives

Table E2 Event and Action Plan for Water Quality Monitoring

Event	Action			
	ET	IEC	Contractor(s)	ER
Action Level being exceeded by one sampling day	1. Repeat *in situ* measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER.	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice	1. Confirm receipt of notification of exceedance in writing.
Action Level being exceeded by two or more consecutive sampling days	1. Repeat *in situ* measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Consider changes of working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented.
Limit Level being exceeded by one sampling day	1. Repeat *in situ* measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Critically review the need to change working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented. 4. Request Contractor(s) to critically review the working methods.
Limit Level being exceeded by two or more consecutive sampling days	1. Repeat *in situ* measurement on the next day of exceedance to confirm findings; 2. Check monitoring data, plant, equipment and Contractor(s)'s working methods; 3. Identify source(s) of impact and record in notification of exceedance; 4. Inform IEC, Contractor(s) and ER; 5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented	1. Check monitoring data submitted by ET and Contractor(s)'s working methods; 2. Inform EPD; 3. Discuss with ET and Contractor(s) on additional mitigation measures and advise ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of exceedance in writing; 2. Check plant and equipment and rectify unacceptable practice; 3. Critically review the need to change working methods; 4. Discuss with ET and IEC on additional mitigation measures and propose them to ER within 3 working days; 5. Implement the agreed mitigation measures. 6. As directed by ER, slow down or stop all or part of the marine construction works/ production volume of the desalination plant until no exceedance of Limit Level.	1. Confirm receipt of notification of exceedance in writing; 2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented. 3. Ensure additional mitigation measures are properly implemented. 4. Request Contractor(s) to critically review the working methods; 5. Consider and instruct, if necessary, the Contractor(s) to slow down or to stop all or part of the marine construction works/ production volume of the desalination plant until no exceedance of Limit Level.

Notes : ET = Environmental Team, IEC = Independent Environmental Checker; ER = Engineering Representatives
The above actions should be taken within 1 working day after the exceedance is identified during operation phase.

Table E2 Event and Action Plan for Ecology during Construction Phase

Event	Action			
	ET	IEC	Contractor(s)	ER
Non-conformity on one occassion	1. Identify source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, the ER and the Contractor 4. Monitor/ audit/ review remedial actions until rectification has been completed	1. Check monitoring/ auditing results 2. Check the Contractor's working method 3. Discuss with the ET and Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Check the implementation of remedial measures	1. Take immediate action to avoid further problem 2. Amend working methods if needed 3. Submit proposals for remedial actions to ET, ER and IEC 4. Rectify damage and implement the agreed remedial actions	1. Notify Contractor 2. Ensure remedial measures are properly implemented 3. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in case of serious non-conformity until situation is rectified
Repeated Non-comformity	1. Identify source 2. Inform IEC, ER, EPD and AFCD 3. Increase monitoring and audit frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor/ audit/ review remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring/ auditing	1. Check monitoring/ auditing results 2. Check the Contractor's working method 3. Discuss with the ET and Contractor on possible remedial measures 4. Supervise the implementation of remedial measures 5. Advise the ER on effectiveness of proposed remedial measures and keep EPD and AFCD informed	1. Take immediate action to avoid further problem 2. Amend working methods if needed 3. Submit proposals for remedial actions to ET, ER and IEC 4. Rectify damage and implement the agreed remedial actions	1. Notify Contractor 2. Ensure remedial measures are properly implemented 3. Consider and instruct, if necessary, the Contactor to slow down or to stop all or part of the works in the case of serious non-conformity until situation is rectified

Notes : ET = Environmental Team, IEC = Independent Environmental Checker; ER = Engineering Representatives

Appendix F

Water Quality Monitoring Equipment and Landfill Gas Equipment Calibration Certification

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BC120002
Date of Issue : 05 December 2023

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment :	YSI ProDSS (Multi-Parameters)
Manufacturer :	YSI (a xylem brand)
Serial Number :	22D100436
Date of Received :	01 December 2023
Date of Calibration :	04 December 2023
Date of Next Calibration :	03 March 2024
Request No. :	D-BC120002

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500-H^+ B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 23e 4500-O G (Membrane Electrode Method)
Turbidity	APHA 21e 2130 B (Nephelometric Method)

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.13	0.13	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.02	0.01	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
36	35.5	-0.5	Satisfactory
25	24.8	-0.2	Satisfactory
15	15.1	0.1	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.57	-4.30	Satisfactory
20	19.14	-4.30	Satisfactory
30	29.99	-0.03	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BC120002
Date of Issue : 05 December 2023

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.99	8.35	0.36	Satisfactory
5.00	5.10	0.10	Satisfactory
2.58	2.40	-0.18	Satisfactory
0.10	0.20	0.10	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.50	--	Satisfactory
10	9.88	-1.2	Satisfactory
20	18.35	-8.2	Satisfactory
100	95.10	-4.9	Satisfactory
800	736.55	-7.9	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

·The results relate only to the calibrated equipment as received

·The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

--- END OF REPORT ---

ALS Technichem (HK) Pty Ltd
11/F., Chung Shun Knitting Centre,
1 - 3 Wing Yip Street,
Kwai Chung, N.T., Hong Kong
T: +852 2610 1044
F: +852 2610 2021
www.alsglobal.com

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	JORDI DAMIA ROSAL	**WORK ORDER:**	HK2344632
CLIENT:	AA-JEC IJV		
ADDRESS:	C/O AJC JOINT VENTURE- 13/WSD/17 TKO SWROP, TKO DESALINATION PLANT SITE OFFICE, TSEUNG KWAN O, AREA 137, FAT TONG O, TSEUNG KWAN O, HONG KONG	**SUB-BATCH:**	0
		LABORATORY:	HONG KONG
		DATE RECEIVED:	07-Nov-2023
		DATE OF ISSUE:	10-Nov-2023

GENERAL COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.
The validity of equipment/ meter performance only applies to the result(s) stated in the report.
This report superseded any previous report(s) with same work order number.

EQUIPMENT INFORMATION

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

Equipment Type:	Chlorine Meter
Service Nature:	Performance Check
Scope:	Free Chlorine and Total Residual Chlorine
Brand Name/ Model No.:	[HACH]/ [DR300 Pocket Colorimeter]
Serial No./ Equipment No.:	[22060B001140]/ [N/A]
Date of Calibration:	08-November-2023

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK2344632

SUB-BATCH: 0
DATE OF ISSUE: 10-Nov-2023
CLIENT: AA-JEC IJV

Equipment Type: Chlorine Meter
Brand Name/ Model No.: [HACH]/ [DR300 Pocket Colorimeter]
Serial No./ Equipment No.: [22060B001140]/ [N/A]
Date of Calibration: 08-November-2023 Date of Next Calibration: 08-February-2024

PARAMETERS:

Free Chlorine

Method Ref: APHA (23rd edition), 4500Cl: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (%)
0.2	0.21	+5.0
1.0	0.98	-2.0
4.0	3.6	-10.0
	Tolerance Limit (%)	±10.0

Total Residual Chlorine

Method Ref: APHA (23rd edition), 4500Cl: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (%)
0.2	0.21	+5.0
1.0	1.01	+1.0
4.0	3.9	-2.5
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganics

YSF Corporation Ltd.
5A, Blk1 Kin Ho Ind. Bldg., 20-24 Au Pui Wan St., Fo Tan, Shatin, N.T., HK.
Tel: (852) 8109 8368 Fax: (852) 3007 4857 E-mail: sales@ysftool.com
www.sokkia.com.hk www.ysf.com.hk
Supply, Repair, Rental, Scanning and Calibration Service of Surveying Instruments and Accessories

Certificate No. : CAL230351

CALIBRATION CERTIFICATE OF MULTI GAS DETECTOR

Client : China State Construction Engineering (Hong Kong) Ltd.
Address : 29/F., China Overseas Bldg., 139 Hennessy Road, Hong Kong

Unit-Under-Test (UUT) Information

Description	:	Multi gas detector
Manufacturer	:	GMI
Model No.	:	PS500
Serial No.	:	25492809/21

Calibrator Information

Description	:	(1) 4 in 1 Standard gases (H_2S, LEL, CO, O_2)	(2) Std CO_2 gas (0.30%)
Serial No.	:	(1) C-048-07	(2) C-087-04
Cylinder No.	:	(1) 21025003	(2) M123850
Expired date	:	(1) 30 Nov., 2024	(2) 12/2025

Received date : 18 Aug., 2023
Date of calibration : 22 Aug., 2023
Next calibration date : 21 Aug., 2024
Calibration location : YSF Calibration Laboratory
Environmental conditions : 20.5-21.3°C / 54-63%RH
Method used : By direct comparison

Calibration Results :

Parameters	Measured value
(1) Methane (50% LEL)	45% LEL
(2) Oxygen (18.1%)	18.3%
(3) Hydrogen Sulphide (25.5ppm)	26ppm
(4) Carbon monoxide (101ppm)	94ppm
(5) Carbon Dioxide (0.30%)	0.24%

Remark :

1. The equipment used in this calibration is traceable to recognized National Standards.

Tested by : Lam Man Kwong Date : 22 Aug., 2023 Certified by : _____ Date : 22 Aug, 2023
So Chi Kuen (Lab Manager)

** End of Certificate **

Appendix G

Water Quality Monitoring Data & Landfill Gas Monitoring Data

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
CE	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:06:00 AM	9.5	6.7	32.1	22.1	3.6	4.0	<0.10	<0.01
CE	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:06:00 AM	9.4	6.7	32.2	22.1	3.5	5.0	<0.10	<0.01
CE	12/12/2023	Mid-ebb	Sunny	Moderate	M	12	10:07:00 AM	9.4	6.7	32.3	22.1	3.6	4.0	<0.10	<0.01
CE	12/12/2023	Mid-ebb	Sunny	Moderate	M	12	10:07:00 AM	9.4	6.6	32.3	22.1	3.6	4.0	<0.10	<0.01
CE	12/12/2023	Mid-ebb	Sunny	Moderate	B	23	10:08:00 AM	9.5	6.7	32.3	22.2	3.7	5.0	<0.10	<0.01
CE	12/12/2023	Mid-ebb	Sunny	Moderate	B	23	10:08:00 AM	9.5	6.7	32.4	22.2	3.6	4.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	12:37:00 PM	9.9	6.6	32.5	21.9	3.2	4.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	12:37:00 PM	10.0	6.7	32.3	21.9	3.2	3.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	M	10	12:38:00 PM	10.0	6.6	32.6	21.9	3.1	4.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	M	10	12:38:00 PM	9.9	6.6	32.4	21.9	3.1	4.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	B	19	12:39:00 PM	10.1	6.7	32.7	21.9	3.1	4.0	<0.10	<0.01
CF	12/12/2023	Mid-ebb	Sunny	Moderate	B	19	12:39:00 PM	10.0	6.7	32.4	21.9	3.1	5.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	12:11:00 PM	9.8	6.6	32.9	22.1	2.4	3.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	12:11:00 PM	9.8	6.6	33.1	22.1	2.4	4.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	12:12:00 PM	9.8	6.7	33.0	22.1	2.4	4.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	12:12:00 PM	9.7	6.7	33.0	22.1	2.4	5.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	B	8	12:13:00 PM	9.7	6.7	33.0	22.0	2.4	3.0	<0.10	<0.01
WSR01	12/12/2023	Mid-ebb	Sunny	Moderate	B	8	12:13:00 PM	9.7	6.7	33.0	22.0	2.5	3.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:50:00 AM	9.7	6.8	32.1	22.1	2.5	3.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:50:00 AM	9.8	6.8	32.1	22.1	2.4	6.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	M	5	11:51:00 AM	9.7	6.8	32.3	22.1	2.4	6.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	M	5	11:51:00 AM	9.7	6.8	32.5	22.1	2.5	4.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	B	9	11:52:00 AM	9.7	6.8	32.4	22.1	2.3	4.0	<0.10	<0.01
WSR02	12/12/2023	Mid-ebb	Sunny	Moderate	B	9	11:52:00 AM	9.6	6.9	32.1	22.1	2.3	4.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:32:00 AM	10.0	6.8	33.4	21.9	2.2	4.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:32:00 AM	10.1	6.8	33.3	22.0	2.3	3.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	11:33:00 AM	9.9	6.7	33.4	21.9	2.4	5.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	11:33:00 AM	10.0	6.8	33.2	21.9	2.4	4.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	11:34:00 AM	9.9	6.7	33.2	21.9	2.6	3.0	<0.10	<0.01
WSR03	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	11:34:00 AM	10.1	6.8	33.1	22.0	2.5	2.5	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:17:00 AM	9.1	6.8	33.4	22.1	2.2	5.0	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:17:00 AM	9.1	6.7	33.6	22.2	2.2	5.0	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	M	3	11:18:00 AM	8.9	6.8	33.7	22.1	2.2	4.0	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	M	3	11:18:00 AM	9.1	6.8	33.7	22.2	2.2	4.0	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	B	6	11:19:00 AM	9.1	6.8	33.5	22.2	2.3	6.0	<0.10	<0.01
WSR04	12/12/2023	Mid-ebb	Sunny	Moderate	B	6	11:19:00 AM	9.1	6.7	33.8	22.2	2.2	5.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:31:00 AM	9.2	6.7	32.9	21.9	2.1	4.0	<0.10	<0.01
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:31:00 AM	9.5	6.7	32.9	22.0	2.2	4.0	<0.10	<0.01
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	M	8	10:32:00 AM	9.5	6.7	33.1	22.0	2.2	4.0	<0.10	<0.01
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	M	8	10:32:00 AM	9.3	6.7	33.1	21.9	2.3	5.0	<0.10	<0.01
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	B	16	10:33:00 AM	9.3	6.7	33.0	21.9	2.8	8.0	<0.10	<0.01
WSR16	12/12/2023	Mid-ebb	Sunny	Moderate	B	16	10:33:00 AM	9.2	6.7	33.1	21.9	2.8	10.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:00:00 AM	10.1	6.8	33.0	22.3	2.3	5.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:00:00 AM	9.9	6.8	32.9	22.2	2.3	5.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	11:01:00 AM	10.1	6.8	32.9	22.3	2.4	3.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	11:01:00 AM	9.8	6.8	32.8	22.3	2.3	5.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	11:02:00 AM	10.1	6.8	33.0	22.2	2.4	5.0	<0.10	<0.01
WSR33	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	11:02:00 AM	10.0	6.8	32.8	22.3	2.3	5.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:44:00 AM	10.2	6.9	33.7	22.0	2.3	8.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:44:00 AM	10.3	6.8	33.7	21.9	2.4	5.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	M	3	10:45:00 AM	10.3	6.8	33.7	21.9	2.3	4.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	M	3	10:45:00 AM	10.3	6.9	33.6	22.0	2.3	8.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	B	5	10:45:00 AM	10.2	6.8	33.6	22.0	2.3	8.0	<0.10	<0.01
WSR36	12/12/2023	Mid-ebb	Sunny	Moderate	B	5	10:45:00 AM	10.5	6.8	33.8	22.0	2.3	6.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:38:00 AM	9.9	6.9	31.8	22.0	2.2	6.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:38:00 AM	9.9	6.8	31.9	22.0	2.3	8.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	10:39:00 AM	10.1	6.8	31.8	22.0	2.3	7.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	M	4	10:39:00 AM	10.0	6.8	31.8	22.0	2.2	7.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	10:40:00 AM	9.9	6.9	32.0	22.0	2.3	7.0	<0.10	<0.01
WSR37	12/12/2023	Mid-ebb	Sunny	Moderate	B	7	10:40:00 AM	10.0	6.8	32.0	21.9	2.2	8.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:55:00 AM	9.8	6.8	33.2	22.0	2.1	7.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	10:55:00 AM	9.8	6.8	32.8	21.9	2.2	5.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	M	7	10:56:00 AM	9.8	6.8	33.1	22.0	2.1	6.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	M	7	10:56:00 AM	9.6	6.8	33.2	22.0	2.2	5.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	B	12	10:57:00 AM	9.5	6.8	33.2	21.9	2.2	4.0	<0.10	<0.01
NF1	12/12/2023	Mid-ebb	Sunny	Moderate	B	12	10:57:00 AM	9.6	6.8	32.9	21.9	2.1	6.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:12:00 AM	9.1	6.7	33.1	21.8	2.2	5.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:12:00 AM	9.3	6.6	33.0	21.7	2.2	7.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	M	5	11:13:00 AM	9.3	6.6	33.3	21.8	2.4	4.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	M	5	11:13:00 AM	9.2	6.6	33.0	21.8	2.5	5.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	B	9	11:14:00 AM	9.3	6.5	33.3	21.8	2.6	4.0	<0.10	<0.01
NF2	12/12/2023	Mid-ebb	Sunny	Moderate	B	9	11:14:00 AM	9.4	6.6	33.3	21.8	2.5	5.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:20:00 AM	9.5	6.6	32.9	22.3	2.3	5.0	<0.10	<0.01
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	S	1	11:20:00 AM	9.4	6.7	32.8	22.2	2.3	5.0	<0.10	<0.01
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	M	6	11:21:00 AM	9.4	6.7	32.8	22.2	2.4	6.0	<0.10	<0.01
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	M	6	11:21:00 AM	9.6	6.7	32.6	22.2	2.3	4.0	<0.10	<0.01
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	B	11	11:22:00 AM	9.6	6.6	32.5	22.2	2.5	4.0	<0.10	<0.01
NF3	12/12/2023	Mid-ebb	Sunny	Moderate	B	11	11:22:00 AM	9.5	6.6	32.8	22.2	2.6	4.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	S	1	11:21:00 AM	9.5	7.3	33.1	21.4	2.8	4.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	S	1	11:21:00 AM	9.6	7.4	33.0	21.5	2.9	3.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	M	12	11:22:00 AM	9.6	7.4	33.0	21.5	2.8	3.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	M	12	11:22:00 AM	9.7	7.4	32.9	21.4	2.8	4.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	B	23	11:23:00 AM	9.7	7.3	32.9	21.5	2.6	4.0	<0.10	<0.01
CE	14/12/2023	Mid-flood	Sunny	Moderate	B	23	11:23:00 AM	9.5	7.3	32.9	21.5	2.5	4.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:03:00 AM	8.8	7.2	32.3	21.8	3.4	4.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:03:00 AM	8.8	7.3	32.4	21.7	3.3	3.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	M	10	8:04:00 AM	8.7	7.2	32.3	21.7	3.2	4.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	M	10	8:04:00 AM	8.9	7.2	32.3	21.7	3.3	3.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	B	20	8:05:00 AM	8.8	7.2	32.3	21.8	3.2	3.0	<0.10	<0.01
CF	14/12/2023	Mid-flood	Sunny	Moderate	B	20	8:05:00 AM	8.8	7.2	32.3	21.7	3.3	3.0	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:29:00 AM	8.9	7.1	33.3	21.7	2.0	3.0	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:29:00 AM	8.8	7.1	33.2	21.7	2.0	2.5	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	M	4	8:30:00 AM	8.8	7.1	33.2	21.6	2.1	4.0	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	M	4	8:30:00 AM	9.0	7.1	33.2	21.7	2.0	4.0	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	B	7	8:31:00 AM	8.9	7.1	33.3	21.7	1.9	4.0	<0.10	<0.01
WSR01	14/12/2023	Mid-flood	Sunny	Moderate	B	7	8:31:00 AM	8.9	7.1	33.2	21.7	2.0	3.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:50:00 AM	8.9	7.2	33.0	21.8	1.4	5.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	S	1	8:50:00 AM	9.1	7.2	33.0	21.8	1.4	3.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	M	5	8:51:00 AM	8.9	7.2	32.9	21.8	1.5	4.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	M	5	8:51:00 AM	9.0	7.2	32.9	21.8	1.5	5.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	B	8	8:52:00 AM	8.9	7.2	33.1	21.7	1.5	4.0	<0.10	<0.01
WSR02	14/12/2023	Mid-flood	Sunny	Moderate	B	8	8:52:00 AM	8.9	7.2	33.0	21.8	1.5	3.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:06:00 AM	9.6	7.1	33.1	21.5	1.3	6.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:06:00 AM	9.4	7.1	33.0	21.5	1.4	4.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:07:00 AM	9.4	7.1	33.0	21.5	1.3	3.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:07:00 AM	9.5	7.1	33.0	21.6	1.2	4.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	B	7	9:08:00 AM	9.4	7.2	33.1	21.5	1.4	3.0	<0.10	<0.01
WSR03	14/12/2023	Mid-flood	Sunny	Moderate	B	7	9:08:00 AM	9.4	7.2	33.1	21.5	1.3	4.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:22:00 AM	9.3	7.3	33.3	21.8	1.5	4.0	<0.10	<0.01
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:22:00 AM	9.1	7.3	33.2	21.8	1.6	5.0	<0.10	<0.01
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:23:00 AM	9.2	7.4	33.2	21.8	1.6	5.0	<0.10	<0.01
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:23:00 AM	9.2	7.3	33.3	21.7	1.6	3.0	<0.10	<0.01
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	B	6	9:24:00 AM	9.2	7.3	33.3	21.8	1.6	4.0	<0.10	<0.01
WSR04	14/12/2023	Mid-flood	Sunny	Moderate	B	6	9:24:00 AM	9.1	7.3	33.2	21.8	1.6	3.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:58:00 AM	9.1	7.1	33.7	21.7	1.2	4.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:58:00 AM	9.2	7.0	33.7	21.7	1.2	5.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	M	8	10:59:00 AM	9.2	7.1	33.7	21.7	1.2	4.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	M	8	10:59:00 AM	9.2	7.0	33.7	21.7	1.1	3.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	B	14	11:00:00 AM	9.3	7.1	33.7	21.7	1.1	4.0	<0.10	<0.01
WSR16	14/12/2023	Mid-flood	Sunny	Moderate	B	14	11:00:00 AM	9.1	7.1	33.7	21.6	1.3	4.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:39:00 AM	9.2	7.3	32.4	21.5	1.9	4.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:39:00 AM	9.2	7.3	32.4	21.5	2.0	5.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:40:00 AM	9.1	7.3	32.4	21.5	1.9	3.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	M	4	9:40:00 AM	9.0	7.3	32.4	21.5	2.0	3.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	B	7	9:41:00 AM	9.2	7.3	32.3	21.5	2.0	3.0	<0.10	<0.01
WSR33	14/12/2023	Mid-flood	Sunny	Moderate	B	7	9:41:00 AM	9.1	7.3	32.4	21.5	1.9	3.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:56:00 AM	8.7	7.2	33.6	22.0	2.2	5.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	S	1	9:56:00 AM	8.7	7.3	33.7	22.0	2.3	4.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	M	3	9:57:00 AM	8.7	7.3	33.6	22.0	2.4	5.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	M	3	9:57:00 AM	8.5	7.3	33.8	21.9	2.5	4.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	B	6	9:57:00 AM	8.7	7.3	33.7	21.9	2.5	4.0	<0.10	<0.01
WSR36	14/12/2023	Mid-flood	Sunny	Moderate	B	6	9:57:00 AM	8.5	7.2	33.7	22.0	2.5	5.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:13:00 AM	9.4	7.2	32.9	21.7	2.3	4.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:13:00 AM	9.4	7.3	32.8	21.8	2.4	5.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	M	4	10:14:00 AM	9.5	7.3	32.9	21.8	2.4	3.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	M	4	10:14:00 AM	9.4	7.3	32.8	21.8	2.5	5.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	B	8	10:15:00 AM	9.4	7.2	32.9	21.8	2.5	3.0	<0.10	<0.01
WSR37	14/12/2023	Mid-flood	Sunny	Moderate	B	8	10:15:00 AM	9.4	7.2	32.8	21.7	2.4	3.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:51:00 AM	8.6	7.2	33.1	21.8	1.6	4.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:51:00 AM	8.7	7.3	33.2	21.6	1.6	5.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	M	7	10:52:00 AM	8.8	7.2	33.2	21.7	1.7	4.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	M	7	10:52:00 AM	8.6	7.2	33.1	21.7	1.7	3.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	B	12	10:53:00 AM	8.7	7.3	33.2	21.7	1.8	4.0	<0.10	<0.01
NF1	14/12/2023	Mid-flood	Sunny	Moderate	B	12	10:53:00 AM	8.6	7.2	33.3	21.7	1.7	3.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF2	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:44:00 AM	8.9	7.1	32.8	21.8	1.9	3.0	<0.10	<0.01
NF2	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:44:00 AM	9.0	7.2	32.7	21.8	1.8	4.0	<0.10	<0.01
NF2	14/12/2023	Mid-flood	Sunny	Moderate	M	5	10:45:00 AM	8.9	7.2	32.8	21.8	2.1	5.0	<0.10	<0.01
NF2	14/12/2023	Mid-flood	Sunny	Moderate	M	5	10:45:00 AM	9.1	7.2	32.7	21.9	2.2	5.0	<0.10	<0.01
NF2	14/12/2023	Mid-flood	Sunny	Moderate	B	10	10:46:00 AM	8.9	7.2	32.7	21.9	2.2	5.0	<0.10	<0.01
NF2	14/12/2023	Mid-flood	Sunny	Moderate	B	10	10:46:00 AM	8.9	7.1	32.7	21.9	2.1	3.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:38:00 AM	8.9	7.3	32.6	21.7	1.4	3.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	S	1	10:38:00 AM	8.8	7.3	32.6	21.7	1.3	4.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	M	6	10:39:00 AM	8.9	7.4	32.5	21.7	1.4	4.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	M	6	10:39:00 AM	8.9	7.3	32.5	21.7	1.4	4.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	B	11	10:40:00 AM	8.9	7.3	32.6	21.7	1.4	5.0	<0.10	<0.01
NF3	14/12/2023	Mid-flood	Sunny	Moderate	B	11	10:40:00 AM	8.7	7.3	32.6	21.7	1.5	4.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:30:00 AM	9.4	7.2	33.0	21.8	2.8	3.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:30:00 AM	9.3	7.2	33.0	21.8	2.7	4.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	M	10	11:31:00 AM	9.4	7.2	32.9	21.8	2.7	4.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	M	10	11:31:00 AM	9.2	7.2	33.0	21.7	2.8	4.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	B	19	11:32:00 AM	9.3	7.2	33.0	21.8	2.7	4.0	<0.10	<0.01
CE	16/12/2023	Mid-flood	Sunny	Moderate	B	19	11:32:00 AM	9.5	7.2	33.0	21.7	2.7	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:05:00 AM	9.8	7.1	34.2	21.7	3.3	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:05:00 AM	9.8	7.1	34.1	21.7	3.1	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	M	11	8:06:00 AM	9.5	7.2	34.2	21.8	3.2	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	M	11	8:06:00 AM	9.4	7.1	34.0	21.7	3.2	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	B	20	8:07:00 AM	9.8	7.1	34.1	21.8	3.2	3.0	<0.10	<0.01
CF	16/12/2023	Mid-flood	Sunny	Moderate	B	20	8:07:00 AM	9.7	7.1	34.2	21.7	3.0	2.5	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:31:00 AM	9.1	7.3	33.8	21.7	2.3	3.0	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:31:00 AM	9.0	7.2	33.7	21.7	2.2	4.0	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	M	4	8:32:00 AM	9.3	7.3	34.0	21.6	2.4	4.0	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	M	4	8:32:00 AM	9.3	7.2	33.7	21.6	2.4	4.0	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	B	8	8:33:00 AM	9.1	7.3	33.8	21.6	2.4	3.0	<0.10	<0.01
WSR01	16/12/2023	Mid-flood	Sunny	Moderate	B	8	8:33:00 AM	9.2	7.2	33.8	21.6	2.5	3.0	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:53:00 AM	8.5	7.2	33.3	21.6	2.4	4.0	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	S	1	8:53:00 AM	8.7	7.2	33.5	21.6	2.3	6.0	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	M	5	8:54:00 AM	8.5	7.1	33.4	21.5	2.4	2.5	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	M	5	8:54:00 AM	8.8	7.2	33.3	21.6	2.3	2.5	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	B	9	8:55:00 AM	8.5	7.1	33.4	21.5	2.4	4.0	<0.10	<0.01
WSR02	16/12/2023	Mid-flood	Sunny	Moderate	B	9	8:55:00 AM	8.6	7.2	33.5	21.6	2.5	2.5	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:09:00 AM	9.3	7.1	33.1	21.8	1.4	3.0	<0.10	<0.01
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:09:00 AM	9.3	7.2	33.1	21.8	1.4	3.0	<0.10	<0.01
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:10:00 AM	9.4	7.2	33.0	21.8	1.5	3.0	<0.10	<0.01
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:10:00 AM	9.6	7.2	33.0	21.7	1.5	3.0	<0.10	<0.01
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:11:00 AM	9.5	7.1	32.9	21.7	1.4	3.0	<0.10	<0.01
WSR03	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:11:00 AM	9.4	7.2	33.0	21.7	1.3	4.0	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:27:00 AM	9.5	7.1	33.1	21.6	1.7	3.0	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:27:00 AM	9.7	7.1	33.1	21.7	1.7	3.0	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:28:00 AM	9.4	7.2	32.8	21.6	1.8	2.5	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:28:00 AM	9.4	7.1	33.0	21.6	1.7	3.0	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:29:00 AM	9.6	7.1	32.8	21.7	1.8	4.0	<0.10	<0.01
WSR04	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:29:00 AM	9.5	7.2	32.9	21.6	1.8	5.0	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:07:00 AM	9.5	7.2	34.0	21.8	2.2	2.5	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:07:00 AM	9.4	7.2	34.2	21.8	2.2	2.5	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	M	8	11:08:00 AM	9.5	7.2	34.0	21.9	2.4	2.5	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	M	8	11:08:00 AM	9.2	7.2	34.0	21.9	2.3	4.0	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	B	15	11:09:00 AM	9.5	7.2	34.0	21.8	2.3	3.0	<0.10	<0.01
WSR16	16/12/2023	Mid-flood	Sunny	Moderate	B	15	11:09:00 AM	9.3	7.3	34.0	21.8	2.4	2.5	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:44:00 AM	8.9	7.2	33.3	21.5	1.9	3.0	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	S	1	9:44:00 AM	8.8	7.1	33.3	21.6	2.1	2.5	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:45:00 AM	8.9	7.2	33.3	21.6	2.0	3.0	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	M	4	9:45:00 AM	8.9	7.2	33.1	21.6	2.0	3.0	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:46:00 AM	9.1	7.1	33.2	21.6	2.1	3.0	<0.10	<0.01
WSR33	16/12/2023	Mid-flood	Sunny	Moderate	B	7	9:46:00 AM	8.9	7.2	33.2	21.6	2.0	2.5	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:01:00 AM	9.7	7.2	33.3	21.6	2.4	3.0	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:01:00 AM	10.1	7.3	33.4	21.7	2.4	4.0	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	M	3	10:02:00 AM	9.8	7.2	33.4	21.7	2.5	3.0	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	M	3	10:02:00 AM	9.8	7.3	33.2	21.7	2.4	3.0	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	B	6	10:02:00 AM	9.9	7.2	33.1	21.7	2.4	4.0	<0.10	<0.01
WSR36	16/12/2023	Mid-flood	Sunny	Moderate	B	6	10:02:00 AM	9.8	7.3	33.2	21.7	2.4	3.0	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:18:00 AM	8.8	7.2	33.4	21.7	2.2	2.5	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:18:00 AM	8.9	7.2	33.2	21.7	2.3	2.5	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	M	4	10:19:00 AM	9.1	7.1	33.3	21.7	2.2	3.0	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	M	4	10:19:00 AM	8.9	7.2	33.3	21.6	2.3	3.0	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	B	8	10:20:00 AM	8.7	7.2	33.2	21.7	2.2	3.0	<0.10	<0.01
WSR37	16/12/2023	Mid-flood	Sunny	Moderate	B	8	10:20:00 AM	9.0	7.2	33.3	21.7	2.3	3.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF1	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:00:00 AM	9.7	7.1	33.1	21.5	2.4	2.5	<0.10	<0.01
NF1	16/12/2023	Mid-flood	Sunny	Moderate	S	1	11:00:00 AM	9.8	7.2	33.1	21.5	2.5	4.0	<0.10	<0.01
NF1	16/12/2023	Mid-flood	Sunny	Moderate	M	7	11:01:00 AM	10.0	7.1	33.1	21.4	2.3	3.0	<0.10	<0.01
NF1	16/12/2023	Mid-flood	Sunny	Moderate	M	7	11:01:00 AM	10.0	7.1	33.1	21.5	2.4	3.0	<0.10	<0.01
NF1	16/12/2023	Mid-flood	Sunny	Moderate	B	13	11:02:00 AM	10.1	7.1	33.0	21.4	2.5	4.0	<0.10	<0.01
NF1	16/12/2023	Mid-flood	Sunny	Moderate	B	13	11:02:00 AM	10.0	7.2	33.0	21.4	2.4	3.0	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:51:00 AM	9.6	7.3	33.0	21.7	2.4	4.0	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:51:00 AM	9.4	7.3	32.9	21.7	2.4	3.0	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	M	5	10:52:00 AM	9.5	7.2	32.9	21.7	2.3	3.0	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	M	5	10:52:00 AM	9.3	7.3	33.0	21.8	2.5	2.5	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	B	10	10:53:00 AM	9.6	7.3	33.0	21.7	2.4	3.0	<0.10	<0.01
NF2	16/12/2023	Mid-flood	Sunny	Moderate	B	10	10:53:00 AM	9.6	7.3	32.9	21.7	2.4	2.5	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:45:00 AM	10.1	7.2	33.8	21.5	2.3	2.5	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	S	1	10:45:00 AM	10.0	7.2	33.8	21.4	2.4	2.5	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	M	6	10:46:00 AM	10.0	7.3	34.0	21.5	2.4	4.0	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	M	6	10:46:00 AM	10.1	7.3	33.9	21.5	2.4	2.5	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	B	11	10:47:00 AM	9.8	7.3	33.8	21.5	2.4	2.5	<0.10	<0.01
NF3	16/12/2023	Mid-flood	Sunny	Moderate	B	11	10:47:00 AM	10.0	7.3	33.8	21.5	2.5	3.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:46:00 PM	8.6	7.2	32.9	22.0	3.2	3.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:46:00 PM	8.6	7.2	32.7	22.0	3.2	4.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	M	11	1:47:00 PM	8.6	7.3	32.8	22.1	3.1	4.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	M	11	1:47:00 PM	8.4	7.2	32.9	22.0	3.1	3.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	B	22	1:48:00 PM	8.6	7.2	32.7	22.0	3.1	4.0	<0.10	<0.01
CE	19/12/2023	Mid-flood	Cloudy	Moderate	B	22	1:48:00 PM	8.5	7.2	32.9	22.0	3.1	4.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	10:29:00 AM	8.0	7.3	32.4	22.0	3.7	3.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	10:29:00 AM	7.9	7.3	32.4	21.9	3.6	3.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	M	10	10:30:00 AM	7.8	7.3	32.3	22.0	3.9	3.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	M	10	10:30:00 AM	7.9	7.3	32.3	22.0	3.8	5.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	B	19	10:31:00 AM	7.8	7.3	32.5	22.0	4.0	5.0	<0.10	<0.01
CF	19/12/2023	Mid-flood	Cloudy	Moderate	B	19	10:31:00 AM	8.0	7.3	32.6	21.9	3.9	3.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	10:54:00 AM	7.8	7.4	33.3	22.0	2.2	4.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	10:54:00 AM	7.8	7.3	33.5	22.0	2.2	5.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	10:55:00 AM	7.8	7.3	33.4	22.1	2.1	3.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	10:55:00 AM	8.0	7.3	33.4	22.0	2.2	4.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	B	8	10:56:00 AM	7.9	7.4	33.3	22.0	2.1	6.0	<0.10	<0.01
WSR01	19/12/2023	Mid-flood	Cloudy	Moderate	B	8	10:56:00 AM	8.0	7.3	33.3	22.0	2.1	3.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:15:00 AM	7.8	7.4	33.0	22.1	2.1	6.0	<0.10	<0.01
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:15:00 AM	7.7	7.4	33.2	22.1	2.1	3.0	<0.10	<0.01
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	M	5	11:16:00 AM	7.6	7.4	33.1	22.1	2.5	3.0	<0.10	<0.01
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	M	5	11:16:00 AM	7.8	7.3	33.0	22.1	2.6	4.0	<0.10	<0.01
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	B	8	11:17:00 AM	7.6	7.3	33.1	22.0	2.5	2.5	<0.10	<0.01
WSR02	19/12/2023	Mid-flood	Cloudy	Moderate	B	8	11:17:00 AM	7.8	7.4	33.2	22.1	2.5	3.0	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:31:00 AM	8.0	7.3	32.9	22.2	2.1	3.0	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:31:00 AM	7.8	7.3	33.0	22.1	2.2	2.5	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	11:32:00 AM	7.8	7.3	33.1	22.2	2.1	6.0	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	11:32:00 AM	8.0	7.3	33.0	22.1	2.1	5.0	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	B	7	11:33:00 AM	8.0	7.4	33.1	22.1	2.2	3.0	<0.10	<0.01
WSR03	19/12/2023	Mid-flood	Cloudy	Moderate	B	7	11:33:00 AM	7.9	7.3	33.2	22.1	2.1	6.0	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:47:00 AM	8.2	7.2	32.4	22.0	2.4	4.0	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	11:47:00 AM	8.2	7.3	32.6	22.0	2.5	7.0	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	M	3	11:48:00 AM	8.1	7.3	32.6	22.0	2.2	2.5	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	M	3	11:48:00 AM	8.1	7.3	32.6	22.0	2.2	4.0	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	11:49:00 AM	8.1	7.2	32.5	22.0	2.3	6.0	<0.10	<0.01
WSR04	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	11:49:00 AM	8.3	7.3	32.4	22.0	2.2	4.0	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:23:00 PM	8.4	7.2	33.3	22.3	2.3	3.0	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:23:00 PM	8.4	7.3	33.4	22.2	2.0	2.5	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	M	8	1:24:00 PM	8.4	7.2	33.4	22.2	2.6	4.0	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	M	8	1:24:00 PM	8.6	7.2	33.5	22.2	2.4	5.0	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	B	16	1:25:00 PM	8.4	7.2	33.5	22.2	2.6	5.0	<0.10	<0.01
WSR16	19/12/2023	Mid-flood	Cloudy	Moderate	B	16	1:25:00 PM	8.5	7.2	33.5	22.2	2.4	6.0	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:02:00 PM	8.2	7.3	33.4	22.0	2.8	2.5	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:02:00 PM	8.2	7.3	33.6	22.0	2.7	3.0	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:03:00 PM	8.4	7.3	33.3	22.0	2.4	5.0	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:03:00 PM	8.3	7.3	33.3	22.0	2.2	5.0	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	12:04:00 PM	8.2	7.3	33.4	22.1	2.1	3.0	<0.10	<0.01
WSR33	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	12:04:00 PM	8.2	7.3	33.3	22.1	2.2	5.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:19:00 PM	8.4	7.2	33.4	22.2	2.3	5.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:19:00 PM	8.4	7.2	33.7	22.2	2.3	5.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:20:00 PM	8.5	7.2	33.5	22.2	2.4	4.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:20:00 PM	8.4	7.2	33.7	22.2	2.3	5.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	12:20:00 PM	8.4	7.2	33.7	22.2	2.2	3.0	<0.10	<0.01
WSR36	19/12/2023	Mid-flood	Cloudy	Moderate	B	6	12:20:00 PM	8.5	7.2	33.4	22.2	2.3	4.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:36:00 PM	7.5	7.2	33.5	22.2	2.2	6.0	<0.10	<0.01
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	12:36:00 PM	7.5	7.2	33.4	22.2	2.3	5.0	<0.10	<0.01
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:37:00 PM	7.6	7.3	33.3	22.2	2.5	6.0	<0.10	<0.01
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	M	4	12:37:00 PM	7.5	7.2	33.2	22.2	2.5	5.0	<0.10	<0.01
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	B	7	12:38:00 PM	7.6	7.2	33.4	22.2	2.4	5.0	<0.10	<0.01
WSR37	19/12/2023	Mid-flood	Cloudy	Moderate	B	7	12:38:00 PM	7.5	7.2	33.3	22.1	2.4	8.0	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:15:00 PM	8.3	7.3	33.0	22.1	2.0	3.0	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:15:00 PM	8.4	7.3	33.0	22.1	2.1	2.5	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	M	7	1:16:00 PM	8.2	7.3	32.9	22.1	2.1	3.0	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	M	7	1:16:00 PM	8.4	7.3	33.0	22.0	2.0	4.0	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	B	12	1:17:00 PM	8.4	7.3	32.9	22.1	2.1	3.0	<0.10	<0.01
NF1	19/12/2023	Mid-flood	Cloudy	Moderate	B	12	1:17:00 PM	8.4	7.3	32.9	22.1	2.1	3.0	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:08:00 PM	7.4	7.3	32.6	22.1	2.0	6.0	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:08:00 PM	7.5	7.3	32.4	22.1	2.1	7.0	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	M	5	1:09:00 PM	7.4	7.3	32.4	22.1	2.1	4.0	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	M	5	1:09:00 PM	7.4	7.4	32.4	22.0	2.0	2.5	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	B	10	1:10:00 PM	7.4	7.4	32.3	22.0	2.0	4.0	<0.10	<0.01
NF2	19/12/2023	Mid-flood	Cloudy	Moderate	B	10	1:10:00 PM	7.5	7.3	32.3	22.1	2.2	4.0	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:01:00 PM	7.7	7.3	32.5	22.0	2.3	3.0	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	S	1	1:01:00 PM	7.8	7.3	32.6	22.0	2.4	2.5	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	M	6	1:02:00 PM	7.9	7.3	32.5	22.1	2.3	5.0	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	M	6	1:02:00 PM	7.8	7.3	32.6	22.0	2.4	4.0	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	B	11	1:03:00 PM	7.6	7.3	32.6	22.1	2.4	2.5	<0.10	<0.01
NF3	19/12/2023	Mid-flood	Cloudy	Moderate	B	11	1:03:00 PM	7.9	7.3	32.3	22.1	2.4	4.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:00:00 AM	7.4	7.6	34.3	21.9	3.2	3.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:00:00 AM	7.5	7.6	34.2	21.9	3.1	3.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	M	11	8:01:00 AM	7.5	7.5	34.4	21.9	3.0	4.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	M	11	8:01:00 AM	7.4	7.6	34.5	21.9	3.0	3.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	B	20	8:02:00 AM	7.4	7.6	34.4	22.0	2.9	5.0	<0.10	<0.01
CE	21/12/2023	Mid-ebb	Cloudy	Moderate	B	20	8:02:00 AM	7.4	7.6	34.2	22.0	2.8	6.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	11:11:00 AM	8.3	7.1	32.9	22.1	2.5	4.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	11:11:00 AM	8.3	7.2	33.1	22.2	2.6	3.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	M	10	11:12:00 AM	8.2	7.2	32.9	22.2	2.7	4.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	M	10	11:12:00 AM	8.4	7.1	33.0	22.2	2.8	4.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	B	19	11:13:00 AM	8.4	7.2	33.0	22.2	2.9	4.0	<0.10	<0.01
CF	21/12/2023	Mid-ebb	Cloudy	Moderate	B	19	11:13:00 AM	8.5	7.2	33.1	22.1	2.8	3.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:47:00 AM	7.8	7.4	34.3	22.0	2.2	4.0	<0.10	<0.01
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:47:00 AM	8.1	7.4	34.4	21.9	2.4	5.0	<0.10	<0.01
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:48:00 AM	8.0	7.4	34.4	22.0	2.4	4.0	<0.10	<0.01
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:48:00 AM	8.1	7.4	34.2	22.0	2.3	4.0	<0.10	<0.01
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	B	8	10:49:00 AM	8.1	7.4	34.2	22.0	2.4	6.0	<0.10	<0.01
WSR01	21/12/2023	Mid-ebb	Cloudy	Moderate	B	8	10:49:00 AM	7.9	7.4	34.4	21.9	2.3	4.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:26:00 AM	9.2	7.3	32.9	22.0	2.2	3.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:26:00 AM	9.0	7.3	32.6	22.1	2.3	4.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:27:00 AM	8.9	7.3	32.8	22.1	2.2	4.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:27:00 AM	8.9	7.3	32.8	22.1	2.2	4.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:28:00 AM	9.0	7.3	32.9	22.0	2.3	4.0	<0.10	<0.01
WSR02	21/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:28:00 AM	9.1	7.3	32.7	22.1	2.3	5.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:10:00 AM	8.0	7.4	32.5	21.9	1.7	6.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:10:00 AM	7.8	7.4	32.5	21.9	1.7	6.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:11:00 AM	8.0	7.4	32.8	21.9	1.6	5.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:11:00 AM	8.1	7.4	32.7	22.0	1.7	5.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	10:12:00 AM	8.1	7.4	32.5	21.9	1.7	4.0	<0.10	<0.01
WSR03	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	10:12:00 AM	7.9	7.4	32.7	21.9	1.6	4.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:55:00 AM	7.3	7.5	34.1	22.2	1.2	4.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:55:00 AM	7.5	7.5	34.2	22.2	1.3	3.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:56:00 AM	7.3	7.4	34.2	22.2	1.3	4.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:56:00 AM	7.3	7.5	33.9	22.2	1.4	4.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:57:00 AM	7.4	7.5	34.2	22.1	1.2	5.0	<0.10	<0.01
WSR04	21/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:57:00 AM	7.3	7.5	33.9	22.2	1.4	5.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:24:00 AM	8.5	7.4	32.7	22.1	1.6	5.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:24:00 AM	8.4	7.4	32.7	22.2	1.7	4.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	M	8	8:25:00 AM	8.5	7.4	32.5	22.2	1.6	5.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	M	8	8:25:00 AM	8.4	7.4	32.8	22.1	1.6	6.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	B	15	8:26:00 AM	8.5	7.4	32.6	22.2	1.6	4.0	<0.10	<0.01
WSR16	21/12/2023	Mid-ebb	Cloudy	Moderate	B	15	8:26:00 AM	8.6	7.4	32.6	22.2	1.6	5.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:38:00 AM	8.4	7.4	33.4	22.1	2.2	4.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:38:00 AM	8.3	7.4	33.6	22.2	2.3	7.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:39:00 AM	8.1	7.4	33.4	22.1	2.2	5.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:39:00 AM	8.2	7.4	33.5	22.2	2.3	6.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:40:00 AM	8.3	7.4	33.3	22.2	2.3	7.0	<0.10	<0.01
WSR33	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:40:00 AM	8.3	7.4	33.4	22.2	2.2	6.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:24:00 AM	8.2	7.3	34.6	22.1	2.4	5.0	<0.10	<0.01
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:24:00 AM	8.3	7.3	34.3	22.1	2.3	6.0	<0.10	<0.01
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:25:00 AM	8.3	7.3	34.5	22.0	2.5	4.0	<0.10	<0.01
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:25:00 AM	8.3	7.3	34.3	22.1	2.4	5.0	<0.10	<0.01
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:25:00 AM	8.2	7.3	34.6	22.0	2.4	5.0	<0.10	<0.01
WSR36	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:25:00 AM	8.3	7.3	34.4	22.0	2.5	4.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:18:00 AM	8.1	7.3	33.5	21.9	2.1	5.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:18:00 AM	8.1	7.4	33.7	21.9	2.1	4.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:19:00 AM	8.0	7.4	33.4	21.9	2.2	8.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:19:00 AM	8.2	7.3	33.6	21.9	2.1	6.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:20:00 AM	8.0	7.4	33.6	21.9	2.1	5.0	<0.10	<0.01
WSR37	21/12/2023	Mid-ebb	Cloudy	Moderate	B	7	9:20:00 AM	8.0	7.3	33.5	21.8	2.1	4.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:48:00 AM	8.4	7.3	33.0	22.0	2.2	3.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:48:00 AM	8.2	7.3	33.0	22.0	2.3	5.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	M	7	8:49:00 AM	8.2	7.3	32.9	22.1	2.3	4.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	M	7	8:49:00 AM	8.3	7.3	32.9	22.0	2.4	5.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	B	13	8:50:00 AM	8.4	7.3	32.9	22.0	2.3	5.0	<0.10	<0.01
NF1	21/12/2023	Mid-ebb	Cloudy	Moderate	B	13	8:50:00 AM	8.2	7.2	32.9	22.0	2.3	4.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:05:00 AM	8.3	7.1	32.8	21.8	1.8	4.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:05:00 AM	8.3	7.2	32.5	21.9	1.8	3.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	M	5	9:06:00 AM	8.4	7.2	32.8	21.8	1.8	3.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	M	5	9:06:00 AM	8.4	7.2	32.7	21.9	1.7	3.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	B	10	9:07:00 AM	8.3	7.2	32.8	21.9	1.8	4.0	<0.10	<0.01
NF2	21/12/2023	Mid-ebb	Cloudy	Moderate	B	10	9:07:00 AM	8.5	7.2	32.6	21.9	1.7	4.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:11:00 AM	7.6	7.5	32.6	22.0	1.9	5.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:11:00 AM	7.7	7.5	32.6	22.1	2.0	4.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	M	6	9:12:00 AM	7.6	7.5	32.9	22.1	1.9	3.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	M	6	9:12:00 AM	7.8	7.5	32.7	22.0	2.0	3.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	B	11	9:13:00 AM	7.8	7.5	32.8	22.1	2.0	4.0	<0.10	<0.01
NF3	21/12/2023	Mid-ebb	Cloudy	Moderate	B	11	9:13:00 AM	7.7	7.5	32.9	22.0	2.0	7.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:00:00 AM	8.9	7.4	33.2	21.1	3.5	4.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:00:00 AM	9.6	7.4	33.2	21.1	3.4	5.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	M	12	8:01:00 AM	8.4	7.3	33.2	21.1	3.5	3.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	M	12	8:01:00 AM	9.6	7.4	33.2	21.0	3.7	4.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	B	23	8:02:00 AM	8.3	7.4	33.2	21.1	3.8	6.0	<0.10	<0.01
CE	23/12/2023	Mid-ebb	Cloudy	Moderate	B	23	8:02:00 AM	8.9	7.3	33.2	21.1	3.7	4.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	11:12:00 AM	9.2	7.4	33.6	21.0	3.2	5.0	<0.10	<0.01
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	11:12:00 AM	8.7	7.4	33.7	21.0	3.2	5.0	<0.10	<0.01
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	M	10	11:13:00 AM	9.8	7.3	33.7	21.0	2.9	6.0	<0.10	<0.01
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	M	10	11:13:00 AM	9.1	7.3	33.7	21.0	2.8	6.0	<0.10	<0.01
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	B	19	11:14:00 AM	9.0	7.4	33.7	21.0	2.8	7.0	<0.10	<0.01
CF	23/12/2023	Mid-ebb	Cloudy	Moderate	B	19	11:14:00 AM	9.9	7.4	33.7	20.9	3.0	5.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:47:00 AM	9.3	7.4	33.4	21.2	2.0	5.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:47:00 AM	9.1	7.3	33.4	21.3	1.8	5.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:48:00 AM	10.0	7.3	33.5	21.2	2.0	5.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:48:00 AM	9.9	7.3	33.4	21.3	2.0	6.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:49:00 AM	9.2	7.4	33.3	21.3	2.0	5.0	<0.10	<0.01
WSR01	23/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:49:00 AM	10.0	7.3	33.4	21.2	1.9	3.0	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:27:00 AM	9.3	7.2	33.0	21.1	2.3	4.0	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:27:00 AM	8.4	7.1	33.0	21.1	2.4	4.0	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:28:00 AM	9.2	7.1	33.0	21.1	2.4	4.0	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	10:28:00 AM	9.2	7.1	32.9	21.1	2.4	2.5	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:29:00 AM	8.3	7.1	32.9	21.1	2.4	5.0	<0.10	<0.01
WSR02	23/12/2023	Mid-ebb	Cloudy	Moderate	B	9	10:29:00 AM	9.0	7.1	33.0	21.1	2.5	5.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:09:00 AM	10.0	7.3	33.4	21.2	2.2	5.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	10:09:00 AM	9.0	7.4	33.5	21.2	2.3	3.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:10:00 AM	9.7	7.4	33.4	21.1	2.4	4.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	10:10:00 AM	9.9	7.4	33.4	21.1	2.4	4.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	B	7	10:11:00 AM	9.9	7.3	33.4	21.1	2.6	4.0	<0.10	<0.01
WSR03	23/12/2023	Mid-ebb	Cloudy	Moderate	B	7	10:11:00 AM	9.1	7.4	33.5	21.1	2.5	5.0	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:54:00 AM	9.2	7.3	32.9	21.2	2.4	5.0	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:54:00 AM	9.3	7.3	32.9	21.2	2.4	6.0	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:55:00 AM	8.7	7.3	33.0	21.3	2.4	3.0	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:55:00 AM	9.3	7.3	32.8	21.3	2.4	5.0	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:56:00 AM	9.4	7.3	33.0	21.2	2.3	2.5	<0.10	<0.01
WSR04	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:56:00 AM	9.3	7.3	32.9	21.3	2.5	3.0	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:23:00 AM	8.4	7.2	32.5	21.2	2.3	4.0	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:23:00 AM	8.6	7.2	32.5	21.2	2.4	2.5	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	M	8	8:24:00 AM	9.1	7.2	32.4	21.1	2.4	2.5	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	M	8	8:24:00 AM	9.2	7.2	32.4	21.2	2.4	3.0	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	B	16	8:25:00 AM	8.5	7.2	32.4	21.1	2.6	5.0	<0.10	<0.01
WSR16	23/12/2023	Mid-ebb	Cloudy	Moderate	B	16	8:25:00 AM	8.9	7.2	32.3	21.2	2.4	3.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:37:00 AM	8.5	7.4	33.7	21.2	2.3	3.0	<0.10	<0.01
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:37:00 AM	8.9	7.4	33.7	21.2	2.2	3.0	<0.10	<0.01
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:38:00 AM	9.3	7.3	33.6	21.2	2.3	4.0	<0.10	<0.01
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:38:00 AM	7.9	7.3	33.6	21.3	2.3	2.5	<0.10	<0.01
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:39:00 AM	8.5	7.3	33.6	21.3	2.3	4.0	<0.10	<0.01
WSR33	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:39:00 AM	8.6	7.3	33.7	21.2	2.3	2.5	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:21:00 AM	8.9	7.2	33.2	21.2	2.1	3.0	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:21:00 AM	9.3	7.2	33.1	21.2	2.3	2.5	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:22:00 AM	9.0	7.2	33.1	21.2	2.2	2.5	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:22:00 AM	9.5	7.2	33.0	21.2	2.3	3.0	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:22:00 AM	9.3	7.1	33.0	21.1	2.6	3.0	<0.10	<0.01
WSR36	23/12/2023	Mid-ebb	Cloudy	Moderate	B	6	9:22:00 AM	9.5	7.2	33.1	21.2	2.6	4.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:15:00 AM	9.1	7.3	32.4	21.2	2.4	4.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:15:00 AM	8.9	7.4	32.5	21.1	2.3	4.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:16:00 AM	9.9	7.3	32.5	21.2	2.4	6.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	M	4	9:16:00 AM	8.7	7.3	32.5	21.2	2.4	5.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	B	8	9:17:00 AM	9.7	7.3	32.6	21.1	2.4	4.0	<0.10	<0.01
WSR37	23/12/2023	Mid-ebb	Cloudy	Moderate	B	8	9:17:00 AM	8.8	7.4	32.4	21.2	2.5	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:47:00 AM	8.3	7.3	32.5	20.9	2.2	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	8:47:00 AM	8.8	7.3	32.5	20.9	2.3	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	M	7	8:48:00 AM	7.8	7.4	32.5	21.0	2.2	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	M	7	8:48:00 AM	8.1	7.3	32.6	21.0	2.2	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	B	13	8:49:00 AM	8.7	7.3	32.5	21.0	2.2	3.0	<0.10	<0.01
NF1	23/12/2023	Mid-ebb	Cloudy	Moderate	B	13	8:49:00 AM	8.3	7.4	32.6	21.0	2.2	3.0	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:02:00 AM	8.9	7.3	32.6	21.0	1.6	3.0	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:02:00 AM	9.1	7.2	32.6	21.0	1.7	3.0	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	9:03:00 AM	9.3	7.2	32.7	20.9	1.6	3.0	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	M	5	9:03:00 AM	8.6	7.3	32.7	21.0	1.7	2.5	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	B	10	9:04:00 AM	9.1	7.2	32.7	21.0	1.6	6.0	<0.10	<0.01
NF2	23/12/2023	Mid-ebb	Cloudy	Moderate	B	10	9:04:00 AM	9.1	7.3	32.7	20.9	1.6	6.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:10:00 AM	9.8	7.4	33.4	20.9	2.2	5.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	S	1	9:10:00 AM	9.7	7.3	33.5	20.9	2.4	5.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	M	6	9:11:00 AM	9.5	7.3	33.6	20.9	2.4	5.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	M	6	9:11:00 AM	8.7	7.3	33.6	20.9	2.4	6.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	B	11	9:12:00 AM	8.8	7.3	33.4	20.9	2.5	6.0	<0.10	<0.01
NF3	23/12/2023	Mid-ebb	Cloudy	Moderate	B	11	9:12:00 AM	8.9	7.3	33.4	20.9	2.6	7.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
CE	26/12/2023	Mid-flood	Sunny	Moderate	S	1	10:30:00 AM	9.9	6.6	33.4	21.9	3.1	3.0	<0.10	<0.01
CE	26/12/2023	Mid-flood	Sunny	Moderate	S	1	10:30:00 AM	10.0	6.7	33.7	22.0	3.0	3.0	<0.10	<0.01
CE	26/12/2023	Mid-flood	Sunny	Moderate	M	11	10:31:00 AM	9.9	6.6	33.7	22.0	3.1	5.0	<0.10	<0.01
CE	26/12/2023	Mid-flood	Sunny	Moderate	M	11	10:31:00 AM	10.0	6.7	33.7	21.9	3.1	4.0	<0.10	<0.01
CE	26/12/2023	Mid-flood	Sunny	Moderate	B	21	10:32:00 AM	9.9	6.6	33.6	21.9	3.0	5.0	<0.10	<0.01
CE	26/12/2023	Mid-flood	Sunny	Moderate	B	21	10:32:00 AM	10.0	6.6	33.4	21.9	3.0	4.0	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	S	1	1:49:00 PM	10.0	6.8	32.6	21.9	2.7	2.5	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	S	1	1:49:00 PM	10.0	6.8	32.6	21.9	2.7	4.0	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	M	10	1:50:00 PM	9.7	6.8	32.7	21.9	2.7	3.0	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	M	10	1:50:00 PM	9.9	6.8	32.5	21.9	2.8	2.5	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	B	19	1:51:00 PM	9.9	6.8	32.4	21.9	2.7	4.0	<0.10	<0.01
CF	26/12/2023	Mid-flood	Sunny	Moderate	B	19	1:51:00 PM	9.8	6.8	32.5	21.9	2.7	2.5	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	S	1	1:23:00 PM	10.1	6.9	32.7	21.9	2.0	3.0	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	S	1	1:23:00 PM	10.1	6.8	32.5	21.9	2.1	4.0	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	M	4	1:24:00 PM	10.3	6.8	32.8	21.8	2.0	4.0	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	M	4	1:24:00 PM	10.3	6.8	32.7	21.8	2.1	5.0	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	B	8	1:25:00 PM	10.1	6.8	32.6	21.9	2.0	4.0	<0.10	<0.01
WSR01	26/12/2023	Mid-flood	Sunny	Moderate	B	8	1:25:00 PM	10.2	6.9	32.6	21.8	2.0	4.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:01:00 PM	9.9	6.8	33.1	21.9	2.4	5.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:01:00 PM	9.9	6.7	32.7	21.8	2.4	5.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	M	5	12:02:00 PM	9.8	6.8	32.8	21.8	2.4	4.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	M	5	12:02:00 PM	9.9	6.7	32.8	21.8	2.3	3.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	B	9	12:03:00 PM	9.9	6.7	32.7	21.8	2.4	6.0	<0.10	<0.01
WSR02	26/12/2023	Mid-flood	Sunny	Moderate	B	9	12:03:00 PM	9.9	6.9	32.9	21.8	2.5	5.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:43:00 PM	10.0	6.8	33.3	22.0	2.3	6.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:43:00 PM	10.1	6.7	33.1	22.0	2.2	3.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	M	4	12:44:00 PM	10.1	6.7	33.1	22.0	2.4	4.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	M	4	12:44:00 PM	10.1	6.8	32.9	22.0	2.5	5.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	B	7	12:45:00 PM	10.0	6.7	33.0	22.0	2.6	7.0	<0.10	<0.01
WSR03	26/12/2023	Mid-flood	Sunny	Moderate	B	7	12:45:00 PM	10.1	6.8	33.1	22.0	2.5	4.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:40:00 AM	9.5	6.6	32.7	22.1	2.4	4.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:40:00 AM	9.5	6.7	32.5	22.2	2.3	6.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:41:00 AM	9.4	6.6	32.5	22.2	2.3	4.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:41:00 AM	9.3	6.6	32.8	22.2	2.4	4.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	B	6	11:42:00 AM	9.2	6.7	32.8	22.2	2.5	4.0	<0.10	<0.01
WSR04	26/12/2023	Mid-flood	Sunny	Moderate	B	6	11:42:00 AM	9.3	6.7	32.7	22.2	2.5	4.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	S	1	10:53:00 AM	10.4	6.6	33.2	22.0	2.1	5.0	<0.10	<0.01
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	S	1	10:53:00 AM	10.3	6.8	32.9	22.1	2.1	5.0	<0.10	<0.01
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	M	8	10:54:00 AM	10.2	6.7	33.0	22.1	2.2	4.0	<0.10	<0.01
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	M	8	10:54:00 AM	10.3	6.7	33.0	22.0	2.2	4.0	<0.10	<0.01
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	B	14	10:55:00 AM	10.4	6.7	33.1	22.1	2.1	4.0	<0.10	<0.01
WSR16	26/12/2023	Mid-flood	Sunny	Moderate	B	14	10:55:00 AM	10.4	6.7	33.1	22.1	2.2	3.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:11:00 PM	9.1	6.8	32.3	22.1	2.1	4.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	S	1	12:11:00 PM	9.2	6.8	32.4	22.2	2.0	5.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	M	4	12:12:00 PM	9.1	6.8	32.4	22.2	2.1	3.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	M	4	12:12:00 PM	8.9	6.9	32.4	22.1	2.2	5.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	B	7	12:13:00 PM	9.1	6.8	32.6	22.2	2.0	5.0	<0.10	<0.01
WSR33	26/12/2023	Mid-flood	Sunny	Moderate	B	7	12:13:00 PM	9.2	6.8	32.6	22.2	2.1	3.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:53:00 AM	9.6	6.8	32.9	21.9	2.3	4.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:53:00 AM	9.5	6.8	33.0	21.8	2.5	3.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:54:00 AM	9.5	6.8	33.0	21.8	2.4	3.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:54:00 AM	9.4	6.7	33.1	21.9	2.3	3.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	B	7	11:54:00 AM	9.5	6.7	33.0	21.8	2.4	4.0	<0.10	<0.01
WSR36	26/12/2023	Mid-flood	Sunny	Moderate	B	7	11:54:00 AM	9.6	6.8	32.7	21.8	2.4	3.0	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:47:00 AM	9.3	6.8	32.1	22.1	1.8	3.0	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:47:00 AM	9.2	6.7	32.3	22.0	1.8	3.0	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:48:00 AM	9.3	6.8	32.4	22.1	1.8	2.5	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	M	4	11:48:00 AM	9.3	6.7	32.1	22.1	1.8	3.0	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	B	8	11:49:00 AM	9.2	6.7	32.1	22.1	1.8	3.0	<0.10	<0.01
WSR37	26/12/2023	Mid-flood	Sunny	Moderate	B	8	11:49:00 AM	9.1	6.7	32.2	22.1	1.9	4.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:17:00 AM	9.1	6.7	33.6	21.9	2.2	4.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:17:00 AM	9.0	6.8	33.5	21.8	2.3	6.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	M	7	11:18:00 AM	9.2	6.7	33.3	21.9	2.1	4.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	M	7	11:18:00 AM	9.2	6.7	33.5	21.9	2.2	6.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	B	12	11:19:00 AM	9.0	6.7	33.4	21.9	2.2	4.0	<0.10	<0.01
NF1	26/12/2023	Mid-flood	Sunny	Moderate	B	12	11:19:00 AM	9.0	6.7	33.6	21.9	2.1	5.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:34:00 AM	9.8	6.7	33.5	22.0	2.1	4.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:34:00 AM	10.0	6.8	33.5	22.0	2.2	4.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	M	5	11:35:00 AM	9.9	6.8	33.4	22.0	2.2	4.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	M	5	11:35:00 AM	10.1	6.7	33.4	22.0	2.2	4.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	B	10	11:36:00 AM	10.1	6.8	33.3	22.0	2.3	4.0	<0.10	<0.01
NF2	26/12/2023	Mid-flood	Sunny	Moderate	B	10	11:36:00 AM	10.1	6.8	33.2	22.1	2.1	7.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF3	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:40:00 AM	9.1	6.7	33.2	22.1	2.4	5.0	<0.10	<0.01
NF3	26/12/2023	Mid-flood	Sunny	Moderate	S	1	11:40:00 AM	9.2	6.8	33.5	22.1	2.3	5.0	<0.10	<0.01
NF3	26/12/2023	Mid-flood	Sunny	Moderate	M	6	11:41:00 AM	9.3	6.8	33.3	22.2	2.3	5.0	<0.10	<0.01
NF3	26/12/2023	Mid-flood	Sunny	Moderate	M	6	11:41:00 AM	9.2	6.7	33.2	22.1	2.4	3.0	<0.10	<0.01
NF3	26/12/2023	Mid-flood	Sunny	Moderate	B	11	11:42:00 AM	9.2	6.8	33.3	22.2	2.3	4.0	<0.10	<0.01
NF3	26/12/2023	Mid-flood	Sunny	Moderate	B	11	11:42:00 AM	9.2	6.8	33.2	22.1	2.3	4.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	S	1	11:11:00 AM	10.1	7.5	32.3	21.9	2.5	4.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	S	1	11:11:00 AM	9.9	7.5	32.1	22.0	2.6	3.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	M	10	11:12:00 AM	9.9	7.5	32.5	21.9	2.5	3.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	M	10	11:12:00 AM	9.8	7.4	32.3	21.9	2.6	5.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	B	19	11:13:00 AM	10.0	7.5	32.2	22.0	2.5	5.0	<0.10	<0.01
CE	28/12/2023	Mid-flood	Sunny	Moderate	B	19	11:13:00 AM	10.1	7.4	32.4	21.9	2.6	5.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:00:00 AM	9.6	7.3	32.4	22.0	3.5	4.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:00:00 AM	9.3	7.2	32.5	22.0	3.5	5.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	M	10	8:01:00 AM	9.5	7.3	32.5	22.0	3.5	4.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	M	10	8:01:00 AM	9.6	7.2	32.4	22.0	3.4	3.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	B	19	8:02:00 AM	9.6	7.3	32.7	22.1	2.6	4.0	<0.10	<0.01
CF	28/12/2023	Mid-flood	Sunny	Moderate	B	19	8:02:00 AM	9.3	7.3	32.4	22.1	2.5	4.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:24:00 AM	10.3	7.3	32.4	22.2	1.7	5.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:24:00 AM	10.2	7.4	32.3	22.1	1.8	4.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:25:00 AM	10.2	7.3	32.3	22.1	1.8	5.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:25:00 AM	10.3	7.3	32.6	22.1	1.9	4.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	B	8	8:26:00 AM	10.3	7.4	32.4	22.1	1.7	3.0	<0.10	<0.01
WSR01	28/12/2023	Mid-flood	Sunny	Moderate	B	8	8:26:00 AM	10.3	7.3	32.3	22.1	1.8	4.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:45:00 AM	9.7	7.3	33.5	22.1	2.4	4.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:45:00 AM	9.6	7.3	33.3	22.0	2.4	4.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:46:00 AM	9.8	7.3	33.3	22.0	2.4	5.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:46:00 AM	9.6	7.3	33.2	22.0	2.4	7.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	B	8	8:47:00 AM	9.7	7.3	33.3	22.0	2.4	4.0	<0.10	<0.01
WSR02	28/12/2023	Mid-flood	Sunny	Moderate	B	8	8:47:00 AM	9.7	7.3	33.2	22.0	2.4	3.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:01:00 AM	9.7	7.4	33.1	22.1	2.2	6.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:01:00 AM	9.8	7.3	33.0	22.2	2.4	5.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:02:00 AM	9.6	7.3	33.1	22.2	2.4	6.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:02:00 AM	9.7	7.3	33.3	22.2	2.4	4.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	B	8	9:03:00 AM	9.7	7.4	33.1	22.2	2.5	3.0	<0.10	<0.01
WSR03	28/12/2023	Mid-flood	Sunny	Moderate	B	8	9:03:00 AM	9.6	7.4	33.0	22.2	2.5	5.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:15:00 AM	10.4	7.3	33.3	22.0	2.2	4.0	<0.10	<0.01
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:15:00 AM	10.5	7.2	33.2	22.0	2.0	5.0	<0.10	<0.01
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:16:00 AM	10.3	7.3	33.1	22.1	2.0	4.0	<0.10	<0.01
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:16:00 AM	10.3	7.3	33.0	22.0	2.0	4.0	<0.10	<0.01
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:17:00 AM	10.4	7.3	33.3	22.0	2.1	4.0	<0.10	<0.01
WSR04	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:17:00 AM	10.2	7.3	33.3	22.0	2.0	4.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	S	1	10:50:00 AM	9.7	7.4	33.4	22.2	2.3	3.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	S	1	10:50:00 AM	10.0	7.4	33.1	22.2	2.4	5.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	M	8	10:51:00 AM	9.8	7.4	33.1	22.2	2.4	7.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	M	8	10:51:00 AM	9.9	7.4	33.2	22.2	2.4	4.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	B	15	10:52:00 AM	9.7	7.4	33.3	22.2	2.5	8.0	<0.10	<0.01
WSR16	28/12/2023	Mid-flood	Sunny	Moderate	B	15	10:52:00 AM	9.9	7.4	33.4	22.2	2.5	4.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:32:00 AM	10.0	7.3	32.8	22.1	2.2	4.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:32:00 AM	9.9	7.3	32.7	22.1	2.2	4.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:33:00 AM	10.0	7.3	32.7	22.1	2.3	4.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	M	4	9:33:00 AM	9.8	7.3	33.0	22.0	2.3	4.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:34:00 AM	9.8	7.3	33.0	22.1	2.4	3.0	<0.10	<0.01
WSR33	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:34:00 AM	9.8	7.3	32.7	22.1	2.5	5.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:37:00 AM	9.9	7.4	33.5	22.1	2.4	4.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	S	1	9:37:00 AM	9.8	7.5	33.2	22.1	2.4	6.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	M	3	9:38:00 AM	9.9	7.4	33.3	22.1	2.3	4.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	M	3	9:38:00 AM	9.9	7.4	33.2	22.1	2.5	4.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:38:00 AM	9.9	7.4	33.3	22.0	2.4	5.0	<0.10	<0.01
WSR36	28/12/2023	Mid-flood	Sunny	Moderate	B	6	9:38:00 AM	9.9	7.4	33.2	22.0	2.4	5.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	S	1	11:11:00 AM	10.3	7.2	33.5	22.0	2.3	4.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	S	1	11:11:00 AM	10.3	7.2	33.5	22.0	2.3	4.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	M	4	11:12:00 AM	10.3	7.3	33.6	22.0	2.5	4.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	M	4	11:12:00 AM	10.1	7.3	33.5	22.0	2.4	4.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	B	8	11:13:00 AM	10.2	7.2	33.7	22.0	2.5	4.0	<0.10	<0.01
WSR37	28/12/2023	Mid-flood	Sunny	Moderate	B	8	11:13:00 AM	10.2	7.2	33.8	22.1	2.5	5.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:24:00 AM	9.8	7.2	33.5	22.1	2.4	8.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:24:00 AM	9.6	7.3	33.2	22.2	2.3	7.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	M	7	8:25:00 AM	9.8	7.3	33.3	22.1	2.3	7.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	M	7	8:25:00 AM	9.7	7.2	33.4	22.1	2.4	6.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	B	13	8:26:00 AM	9.8	7.3	33.4	22.1	2.4	4.0	<0.10	<0.01
NF1	28/12/2023	Mid-flood	Sunny	Moderate	B	13	8:26:00 AM	9.7	7.2	33.3	22.1	2.4	5.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF2	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:45:00 AM	9.9	7.3	33.1	21.8	1.4	5.0	<0.10	<0.01
NF2	28/12/2023	Mid-flood	Sunny	Moderate	S	1	8:45:00 AM	10.1	7.3	32.9	21.8	1.3	5.0	<0.10	<0.01
NF2	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:46:00 AM	10.1	7.3	33.0	21.9	1.5	5.0	<0.10	<0.01
NF2	28/12/2023	Mid-flood	Sunny	Moderate	M	5	8:46:00 AM	9.9	7.3	32.9	21.8	1.4	6.0	<0.10	<0.01
NF2	28/12/2023	Mid-flood	Sunny	Moderate	B	10	8:47:00 AM	10.0	7.3	32.9	21.9	1.4	6.0	<0.10	<0.01
NF2	28/12/2023	Mid-flood	Sunny	Moderate	B	10	8:47:00 AM	10.0	7.3	32.9	21.8	1.5	4.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	S	1	10:31:00 AM	9.2	7.4	32.4	22.0	1.4	5.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	S	1	10:31:00 AM	9.2	7.4	32.8	21.9	1.4	5.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	M	6	10:32:00 AM	9.1	7.4	32.5	21.9	1.4	4.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	M	6	10:32:00 AM	9.2	7.4	32.5	21.9	1.3	4.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	B	11	10:33:00 AM	9.1	7.4	32.6	22.0	1.3	6.0	<0.10	<0.01
NF3	28/12/2023	Mid-flood	Sunny	Moderate	B	11	10:33:00 AM	8.9	7.4	32.4	21.9	1.4	8.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	S	1	11:19:00 AM	8.5	7.2	33.8	22.4	2.3	3.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	S	1	11:19:00 AM	8.6	7.3	33.8	22.4	2.2	4.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	M	12	11:20:00 AM	8.6	7.1	33.7	22.3	2.3	3.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	M	12	11:20:00 AM	8.5	7.2	33.8	22.4	2.2	3.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	B	24	11:21:00 AM	8.4	7.1	33.8	22.4	2.3	4.0	<0.10	<0.01
CE	30/12/2023	Mid-flood	Sunny	Moderate	B	24	11:21:00 AM	8.6	7.2	33.7	22.3	2.2	4.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:08:00 AM	9.6	7.2	33.6	22.5	3.5	4.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:08:00 AM	9.5	7.2	33.6	22.5	3.5	3.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	M	11	8:09:00 AM	9.4	7.3	33.5	22.5	3.5	3.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	M	11	8:09:00 AM	9.5	7.2	33.6	22.5	3.5	3.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	B	20	8:10:00 AM	9.5	7.2	33.6	22.6	3.4	5.0	<0.10	<0.01
CF	30/12/2023	Mid-flood	Sunny	Moderate	B	20	8:10:00 AM	9.6	7.2	33.6	22.5	3.5	4.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:34:00 AM	8.4	7.4	33.1	22.7	2.4	3.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:34:00 AM	8.5	7.4	33.0	22.8	2.3	3.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	M	4	8:35:00 AM	8.4	7.4	33.1	22.8	2.4	5.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	M	4	8:35:00 AM	8.5	7.3	33.0	22.7	2.5	4.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	B	8	8:36:00 AM	8.4	7.3	33.1	22.7	2.5	3.0	<0.10	<0.01
WSR01	30/12/2023	Mid-flood	Sunny	Moderate	B	8	8:36:00 AM	8.6	7.4	33.0	22.7	2.4	3.0	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:54:00 AM	8.7	7.3	33.6	22.8	2.3	5.0	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	S	1	8:54:00 AM	8.7	7.3	33.7	22.8	2.3	3.0	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	M	5	8:55:00 AM	8.6	7.3	33.7	22.7	2.3	2.5	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	M	5	8:55:00 AM	8.6	7.3	33.6	22.8	2.2	2.5	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	B	9	8:56:00 AM	8.6	7.3	33.7	22.8	2.2	5.0	<0.10	<0.01
WSR02	30/12/2023	Mid-flood	Sunny	Moderate	B	9	8:56:00 AM	8.7	7.2	33.6	22.7	2.3	4.0	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:10:00 AM	9.3	7.2	33.3	22.6	2.4	2.5	<0.10	<0.01
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:10:00 AM	9.3	7.1	33.2	22.6	2.3	3.0	<0.10	<0.01
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	M	4	9:11:00 AM	9.2	7.1	33.3	22.6	2.4	2.5	<0.10	<0.01
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	M	4	9:11:00 AM	9.2	7.2	33.3	22.5	2.4	3.0	<0.10	<0.01
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	B	7	9:12:00 AM	9.3	7.1	33.3	22.5	2.5	2.5	<0.10	<0.01
WSR03	30/12/2023	Mid-flood	Sunny	Moderate	B	7	9:12:00 AM	9.4	7.2	33.2	22.5	2.4	2.5	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:25:00 AM	9.1	7.1	32.9	22.7	2.3	2.5	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:25:00 AM	9.2	7.1	32.9	22.7	2.2	2.5	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	M	3	9:26:00 AM	9.0	7.1	32.9	22.7	2.1	4.0	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	M	3	9:26:00 AM	9.1	7.1	32.9	22.7	2.1	2.5	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	B	6	9:27:00 AM	9.1	7.1	32.9	22.8	2.3	2.5	<0.10	<0.01
WSR04	30/12/2023	Mid-flood	Sunny	Moderate	B	6	9:27:00 AM	9.0	7.2	32.9	22.8	2.2	3.0	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:58:00 AM	8.9	7.4	32.4	22.7	2.4	5.0	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:58:00 AM	8.8	7.4	32.4	22.6	2.4	5.0	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	M	8	10:59:00 AM	8.8	7.3	32.4	22.6	2.4	4.0	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	M	8	10:59:00 AM	8.8	7.3	32.5	22.6	2.3	4.0	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	B	15	11:00:00 AM	8.8	7.3	32.4	22.6	2.4	2.5	<0.10	<0.01
WSR16	30/12/2023	Mid-flood	Sunny	Moderate	B	15	11:00:00 AM	8.7	7.4	32.4	22.7	2.4	2.5	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:42:00 AM	8.3	7.3	33.6	22.7	2.3	2.5	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:42:00 AM	8.3	7.2	33.6	22.6	2.3	3.0	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	M	4	9:43:00 AM	8.3	7.3	33.5	22.7	2.4	2.5	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	M	4	9:43:00 AM	8.4	7.3	33.5	22.6	2.3	2.5	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	B	7	9:44:00 AM	8.3	7.2	33.5	22.6	2.3	2.5	<0.10	<0.01
WSR33	30/12/2023	Mid-flood	Sunny	Moderate	B	7	9:44:00 AM	8.4	7.3	33.5	22.7	2.5	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:59:00 AM	8.4	7.3	33.1	22.6	2.2	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	S	1	9:59:00 AM	8.5	7.2	33.2	22.5	2.2	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	M	3	10:00:00 AM	8.6	7.3	33.1	22.6	2.2	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	M	3	10:00:00 AM	8.5	7.2	33.2	22.5	2.3	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	B	6	10:00:00 AM	8.5	7.2	33.2	22.6	2.2	2.5	<0.10	<0.01
WSR36	30/12/2023	Mid-flood	Sunny	Moderate	B	6	10:00:00 AM	8.6	7.2	33.2	22.6	2.3	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:16:00 AM	9.5	7.3	33.7	22.4	2.2	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:16:00 AM	9.6	7.3	33.6	22.5	2.1	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	M	4	10:17:00 AM	9.6	7.3	33.6	22.5	2.1	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	M	4	10:17:00 AM	9.5	7.2	33.6	22.5	2.1	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	B	8	10:18:00 AM	9.6	7.3	33.7	22.4	2.1	2.5	<0.10	<0.01
WSR37	30/12/2023	Mid-flood	Sunny	Moderate	B	8	10:18:00 AM	9.6	7.3	33.7	22.4	2.1	2.5	<0.10	<0.01

Location	Date	Tidal	Weather	Sea Condition	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (°C)	Turbidty (NTU)	SS (mg/L)	Iron (mg/L)	Total Chlorine
NF1	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:52:00 AM	8.7	7.4	33.2	22.7	2.3	2.5	<0.10	<0.01
NF1	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:52:00 AM	8.6	7.3	33.3	22.7	2.2	2.5	<0.10	<0.01
NF1	30/12/2023	Mid-flood	Sunny	Moderate	M	7	10:53:00 AM	8.6	7.4	33.2	22.8	2.2	2.5	<0.10	<0.01
NF1	30/12/2023	Mid-flood	Sunny	Moderate	M	7	10:53:00 AM	8.6	7.3	33.3	22.7	2.3	2.5	<0.10	<0.01
NF1	30/12/2023	Mid-flood	Sunny	Moderate	B	12	10:54:00 AM	8.6	7.4	33.2	22.7	2.4	2.5	<0.10	<0.01
NF1	30/12/2023	Mid-flood	Sunny	Moderate	B	12	10:54:00 AM	8.6	7.4	33.3	22.7	2.3	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:47:00 AM	8.5	7.3	32.9	22.5	2.1	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:47:00 AM	8.5	7.2	32.8	22.6	2.3	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	M	5	10:48:00 AM	8.6	7.2	32.9	22.5	2.3	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	M	5	10:48:00 AM	8.5	7.2	32.9	22.6	2.1	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	B	10	10:49:00 AM	8.6	7.2	32.9	22.5	2.1	2.5	<0.10	<0.01
NF2	30/12/2023	Mid-flood	Sunny	Moderate	B	10	10:49:00 AM	8.5	7.2	32.9	22.5	2.3	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:41:00 AM	8.8	7.3	33.6	22.8	2.2	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	S	1	10:41:00 AM	8.8	7.3	33.6	22.8	2.3	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	M	6	10:42:00 AM	8.8	7.2	33.6	22.8	2.3	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	M	6	10:42:00 AM	8.7	7.3	33.6	22.8	2.3	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	B	11	10:43:00 AM	8.8	7.2	33.7	22.8	2.2	2.5	<0.10	<0.01
NF3	30/12/2023	Mid-flood	Sunny	Moderate	B	11	10:43:00 AM	8.7	7.2	33.6	22.8	2.4	2.5	<0.10	<0.01

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254938	GMI-PS500	22/8/2023

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch0+400 - Ch1+200	27 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	16.8 / 1024.1	0.5	Peter Au	
Ch0+400 - Ch1+200	27 /12/2023	13:30	Fine	0	20.9	0.03	0	19.1 / 1024.1	0.5	Peter Au	
Ch0+400 - Ch1+200	27/12/2023	15:30	Fine	0	20.9	0.03	0	20.2 / 1024.1	0.5	Peter Au	
Ch0+400 - Ch1+200	28/12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	19.1 / 1022.3	0.5	Peter Au	
Ch0+400 - Ch1+200	28 /12/2023	13:30	Sunny	0	20.9	0.03	0	20.2 / 1022.3	0.5	Peter Au	
Ch0+400 - Ch1+200	28 /12/2023	15:30	Sunny	0	20.9	0.03	0	21.5 / 1022.3	0.5	Peter Au	
Ch0+400 - Ch1+200	29 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	18.9 / 1021.1	0.5	Peter Au	
Ch0+400 - Ch1+200	29 /12/2023	13:30	Fine	0	20.9	0.03	0	19.1 / 1021.1	0.5	Peter Au	
Ch0+400 - Ch1+200	29 /12/2023	15:30	Fine	0	20.9	0.03	0	20.8 / 1021.1	0.5	Peter Au	
Ch0+400 - Ch1+200	30 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	19.2 / 1018.3	0.5	Peter Au	
Ch0+400 - Ch1+200	30 /12/2023	13:30	Sunny	0	20.9	0.03	0	20.1 / 1018.3	0.5	Peter Au	
Ch0+400 - Ch1+200	30 /12/2023	15:30	Sunny	0	20.9	0.03	0	22.12 / 1018.3	0.5	Peter Au	
Ch0+400 - Ch1+200	/12/2023	08:30 & before excav.						/		Peter Au	
Ch0+400 - Ch1+200	/12/2023	13:30						/		Peter Au	
Ch0+400 - Ch1+200	/12/2023	15:30						/		Peter Au	
Ch0+400 - Ch1+200	/12/2023									Peter Au	

Checked by : H.F. Yan AIOW

Date 30-12-2023

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254938	GMI-PS500	22/8/2023

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch0+400 - Ch1+200	19 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	14.9 / 1021.2	0.5	Peter Au	
Ch0+400 - Ch1+200	19 /12/2023	13:30	Fine	0	20.9	0.03	0	16.9 / 1021.2	0.5	Peter Au	
Ch0+400 - Ch1+200	19 /12/2023	15:30	Fine	0	20.9	0.03	0	19.1 / 1021.2	0.5	Peter Au	
Ch0+400 - Ch1+200	20 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	12.8 / 1023.2	0.5	Peter Au	
Ch0+400 - Ch1+200	20 /12/2023	13:30	Fine	0	20.9	0.03	0	13.8 / 1023.2	0.5	Peter Au	
Ch0+400 - Ch1+200	20 /12/2023	15:30	Fine	0	20.9	0.03	0	17.8 / 1023.2	0.5	Peter Au	
Ch0+400 - Ch1+200	21 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	11.1 / 1027.1	0.5	Peter Au	
Ch0+400 - Ch1+200	21 /12/2023	13:30	Fine	0	20.9	0.03	0	12.1 / 1027.1	0.5	Peter Au	
Ch0+400 - Ch1+200	21 /12/2023	15:30	Fine	0	20.9	0.03	0	12.3 / 1027.1	0.5	Peter Au	
Ch0+400 - Ch1+200	22 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	8.9 / 1030.1	0.5	Peter Au	
Ch0+400 - Ch1+200	22 /12/2023	13:30	Sunny	0	20.9	0.03		11.5 / 1030.1	0.5	Peter Au	
Ch0+400 - Ch1+200	22 /12/2023	15:30	Sunny	0	20.9	0.03	0	12.1 / 1030.1	0.5	Peter Au	
Ch0+400 - Ch1+200	23 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	9.1 / 1029.1	0.5	Peter Au	
Ch0+400 - Ch1+200	23 /12/2023	13:30	Fine	0	20.9	0.03	0	10.1 / 1029.1	0.5	Peter Au	
Ch0+400 - Ch1+200	23 /12/2023	15:30	Fine	0	20.9	0.03	0	12.1 / 1029.1	0.5	Peter Au	
Ch0+400 - Ch1+200	/12/2023									Peter Au	

Checked by : H.F. Yau Alan CK

Date 23-12-2023

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254938	GMI-PS500	22/8/2023

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch0+400 - Ch1+200	13 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	21.7 / 1019.4	0.5	Peter Au	
Ch0+400 - Ch1+200	13 /12/2023	13:30	Fine	0	20.9	0.03	0	22.9 / 1019.4	0.5	Peter Au	
Ch0+400 - Ch1+200	13 /12/2023	15:30	Fine	0	20.9	0.03	0	23.1 / 1017.4	0.5	Peter Au	
Ch0+400 - Ch1+200	14/12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	21.8 / 1018.7	0.5	Peter Au	
Ch0+400 - Ch1+200	14 /12/2023	13:30	Fine	0	20.9	0.03	0	22.9 / 1018.7	0.5	Peter Au	
Ch0+400 - Ch1+200	14 /12/2023	15:30	Fine	0	20.9	0.03	0	24.3 / 1018.7	0.5	Peter Au	
Ch0+400 - Ch1+200	15 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	23.4 / 1016.3	0.5	Peter Au	
Ch0+400 - Ch1+200	15/12/2023	13:30	Fine	0	20.9	0.03	0	23.7 / 1016.3	0.5	Peter Au	
Ch0+400 - Ch1+200	15 /12/2023	15:30	Fine	0	20.9	0.03	0	24.1 / 1016.3	0.5	Peter Au	
Ch0+400 - Ch1+200	16 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	18.9 / 1020.5	0.5	Peter Au	
Ch0+400 - Ch1+200	16 /12/2023	13:30	Sunny	0	20.9	0.03	0	19.1 / 1020.5	0.5	Peter Au	
Ch0+400 - Ch1+200	16 /12/2023	15:30	Sunny	0	20.9	0.03	0	21.5 / 1020.5	0.5	Peter Au	
Ch0+400 - Ch1+200	18 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	14.9 / 1024.9	0.5	Peter Au	
Ch0+400 - Ch1+200	18 /12/2023	13:30	Sunny	0	20.9	0.03	0	17.8 / 1024.9	0.5	Peter Au	
Ch0+400 - Ch1+200	18/12/2023	15:30	Sunny	0	20.9	0.03	0	19.1 / 1024.9	0.5	Peter Au	
Ch0+400 - Ch1+200	/12/2023									Peter Au	

Checked by : H.F. Tang

Date 18-12-2023

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254938	GMI-PS500	22/8/2023

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch0+400 - Ch1+200	7 /12/2023	08:30 & before excav.	Fine	0	20.8	0.03	0	18.9 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	7 /12/2023	13:30	Fine	0	20.9	0.03	0	24.2 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	7 /12/2023	15:30	Fine	0	20.9	0.03	0	23.1 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	8 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	19.3 / 1016.7	0.5	Peter Au	
Ch0+400 - Ch1+200	8 /12/2023	13:30	Sunny	0	20.9	0.03	0	24.3 / 1016.7	0.5	Peter Au	
Ch0+400 - Ch1+200	8 /12/2023	15:30	Sunny	0	20.9	0.03	0	23.4 / 1016.7	0.5	Peter Au	
Ch0+400 - Ch1+200	9 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	24.5 / 1014.6	0.5	Peter Au	
Ch0+400 - Ch1+200	9 /12/2023	13:30	Fine	0	20.9	0.03	0	23.9 / 1014.6	0.5	Peter Au	
Ch0+400 - Ch1+200	9 /12/2023	15:30	Fine	0	20.9	0.03	0	24.5 / 1014.6	0.5	Peter Au	
Ch0+400 - Ch1+200	11 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	23.5 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	11 /12/2023	13:30	Sunny	0	20.9	0.03	0	24.5 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	11 /12/2023	15:30	Sunny	0	20.8	0.03	0	25.6 / 1017.8	0.5	Peter Au	
Ch0+400 - Ch1+200	12 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	24.5 / 1016.2	0.5	Peter Au	
Ch0+400 - Ch1+200	12 /12/2023	13:30	Fine	0	20.9	0.03	0	25.8 / 1016.2	0.5	Peter Au	
Ch0+400 - Ch1+200	12 /12/2023	15:30	Fine	0	20.9	0.03	0	25.9 / 1016.2	0.5	Peter Au	
Ch0+400 - Ch1+200	/12/2023									Peter Au	

Checked by : H.F.Yau & A.Law

Date 12.12.2023

Landfill Gas Monitoring - Field Measurement Recording Sheet

Contract Title Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant
Contract No. : 13/WSD/17

Serial No.	Monitoring Equipment	Last Calibration
254938	GMI-PS500	22/8/2023

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition	Landfill Gas Parameters				Physical Parameters	Trench Depth (m)	Measured by	
			Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)	Temp (°C) / Pressure mBar		Name	Signature
Ch0+400 - Ch1+200	1 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	19.1 / 1021.5	0.5	Peter Au	
Ch0+400 - Ch1+200	1 /12/2023	13:30	Fine	0	20.9	0.03	0	17.4 / 1021.5	0.5	Peter Au	
Ch0+400 - Ch1+200	1 /12/2023	15:30	Fine	0	20.9	0.03	0	20.3 / 1021.5	0.5	Peter Au	
Ch0+400 - Ch1+200	2 /12/2023	08:30 & before excav.	Fine	0	20.8	0.03	0	18.3 / 1021.7	0.5	Peter Au	
Ch0+400 - Ch1+200	2 /12/2023	13:30	Fine	0	20.8	0.03	0	20.1 / 1021.7	0.5	Peter Au	
Ch0+400 - Ch1+200	2 /12/2023	15:30	Fine	0	20.8	0.03	0	21.2 / 1021.7	0.5	Peter Au	
Ch0+400 - Ch1+200	3 /12/2023	08:30 & before excav.	Fine	0	20.9	0.03	0	20.5 / 1020.4	0.5	Peter Au	
Ch0+400 - Ch1+200	4 /12/2023	13:30	Fine	0	20.8	0.03	0	21.9 / 1020.4	0.5	Peter Au	
Ch0+400 - Ch1+200	4 /12/2023	15:30	Fine	0	20.8	0.03	0	24.4 / 1020.4	0.5	Peter Au	
Ch0+400 - Ch1+200	5 /12/2023	08:30 & before excav.	Sunny	0	20.9	0.03	0	19.7 / 1017.2	0.5	Peter Au	
Ch0+400 - Ch1+200	5 /12/2023	13:30	Sunny	0	20.9	0.03	0	21.5 / 1017.2	0.5	Peter Au	
Ch0+400 - Ch1+200	5 /12/2023	15:30	Sunny	0	20.9	0.03	0	22.5 / 1017.2	0.5	Peter Au	
Ch0+400 - Ch1+200	6 /12/2023	08:30 & before excav.	Fine	0	20.8	0.03	0	19.3 / 1015.6	0.5	Peter Au	
Ch0+400 - Ch1+200	6 /12/2023	13:30	Fine	0	20.9	0.03	0	21.5 / 1015.6	0.5	Peter Au	
Ch0+400 - Ch1+200	6 /12/2023	15:30	Fine	0	20.9	0.03	0	22.1 / 1015.6	0.5	Peter Au	
Ch0+400 - Ch1+200	/12/2023									Peter Au	

Checked by : H.F. Yan
Date 6-12-2023

Appendix H

Waste Flow Table

Contract No. 13/WSD/17
Environmental Management Plan for Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Appendix F - Monthly Summary Waste Flow Table

Name of Department: WSD Contract No.: 13/WSD/17

Monthly Summary Waste Flow Table for 2023 (year)

W

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	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	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
Jan	3383.820	0.000	0.000	0.000	3383.820	0.000	0.000	0.000	0.000	0.000	143.690
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.138	0.010	0.000	115.880
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	205.410
Apr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	255.720
May	2088.990	0.000	0.000	0.000	2088.990	0.000	0.000	0.000	0.000	0.000	202.270
Jun	1955.240	0.000	0.000	0.000	1955.240	0.000	0.000	0.000	0.0017	0.000	189.680
Sub-total	7428.050	0.000	0.000	0.000	7428.050	0.000	0.002	0.138	0.012	0.000	1112.650
Jul	121.060	0.000	0.000	0.000	121.060	0.000	0.008	0.150	0.042	0.000	186.110
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	168.220
Sep	762.550	0.000	0.000	0.000	762.550	0.000	0.000	148.944	0.000	0.000	172.440
Oct	568.600	0.000	0.000	0.000	568.600	0.000	0.000	18.574	0.010	0.000	185.010
Nov	15.430	0.000	0.000	0.000	15.430	0.000	0.000	0.000	0.000	0.000	116.960
Dec	215.220	0.000	0.000	0.000	215.220	0.000	0.000	0.000	0.000	0.000	79.680
Total	9110.910	0.000	0.000	0.000	9110.910	0.000	0.010	167.806	0.064	0.000	2021.070

Notes:
(1) The performance targets are given in Section 1.69 of Specification B
(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 I

Site Inspection Proforma

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 4/5/12/2023 **Inspected by:** ET: Alex Leung SO: Raymond Kok WSD: /
Contractor: Tiffany Tsang IEC: /
Inspection Time: 14:00pm - 15:00pm

Weather

Condition	☒ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	23 °C	**Humidity**	☐ High	☒ Moderate	☐ Low		
Wind	☒ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☒	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☒	☐	
		Construction Dust				
1.00	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction	☐	☒	☐	
1.01		materials, and exposed earth surface properly covered to prevent dust emission?				
1.02	S4.8.1	Are screenings, enclosures, water spraying, or vacuum cleaning devices provided to dusty construction works for dust suppression?	☒	☐	☐	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☒	☐	☐	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☒	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☒	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☒	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☒	☐	
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☒	☐	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☒	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☐	☒	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☒	☐	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☒	☐	
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☒	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☒	☐	

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☑	☐	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**	☐	☐	☐	
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?	☐	☑	☐	
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☑	☐	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☑	☐	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☐	☑	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☑	☐	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**	☐	☐	☐	
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	✓	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	✓	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	✓	☐	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	✓	☐	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	✓	☐	
3.11	S6.9	Are exposed slope surface properly protected?	✓	☐	☐	
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	✓	☐	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	✓	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	✓	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	✓	☐	
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	✓	☐	☐	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	✓	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	✓	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	✓	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	✓	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	✓	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	✓	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	✓	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	✓	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	✓	☐	☐	
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	✓	☐	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m3 closed grab?	✓	☐	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m3/day?	☑	☐	☐	
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☑	☐	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☑	☐	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☑	☐	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☑	☐	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☑	☐	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	☐	☑	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.04	S8.5	Is chemical waste separated from other waste and collected by a licensed chemical waste collector?	☐	☑	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☐	☑	☐	
4.06	S8.5	Is drip tray provided for chemical storage?	☐	☑	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☑	☐	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☐	☑	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☐	☑	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00	S11.10	**Landscape and Visual**				
5.01	& 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☑	☐	☐	
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☐	☑	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00 6.01	S9.7	**Ecology** Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☑	☐	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☑	☐	☐	
6.07	S9.7	Is the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at minimum 1.5 m in a radius away from these individuals?	☑	☐	☐	
6.08	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☑	☐	☐	
6.09	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☑	☐	☐	
6.10	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.11	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.12	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☑	☐	☐	
6.13	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.14	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
6.15	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.16	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☑	☐	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00		**Overall**				
8.01		Is the EM&A properly implemented in general?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Observaition :-

NIL

Reminder :-

(1) Contractor was reminded to cover the stockpile with ~~tarpaulin~~ tarpaulin sheet / spray water when the stockpile is not in use. (near the CLP substation)

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: Alex Leung)	(Name: Tiffany Tsoi)	(Name: Raymond Lok)	(Name:)	(Name:)

ACUITY sustainability
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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 12/12/2023 **Inspected by:** ET: Jacky Leung Contractor: Tiffany Tsang SO: Derek Lai IEC: Alex Chan WSD: _____

Inspection Time: 2:30 pm

Weather							
Condition	☑ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	☑ 20 °C		**Humidity**	☑ High	☐ Moderate	☐ Low	
Wind	☑ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
		Construction Dust				
1.00	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction	☐	☑	☐	
1.01		materials, and exposed earth surface properly covered to prevent dust emission?				
1.02	S4.8.1	Are screenings, enclosures, water spraying, or vacuum cleaning devices provided to dusty construction works for dust suppression?	☑	☐	☐	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☑	☐	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☑	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☐	☑	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☑	☐	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☑	☐	

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☑	☐	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**	☐	☐	☐	
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?	☐	☑	☐	
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☑	☐	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☑	☐	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☐	☑	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☑	☐	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**	☐	☐	☐	
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☑	☐	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☑	☐	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☑	☐	☐	
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☑	☐	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☑	☐	☐	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	☑	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m3 closed grab?	☑	☐	☐	

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☐	☑	☐	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m3/day?	☐	☑	☐	
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☐	☑	☐	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☐	☑	☐	
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☐	☑	☐	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☐	☑	☐	
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☐	☑	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☐	☑	☐	
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☐	☑	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☐	☑	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☐	☑	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☐	☑	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☐	☑	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☐	☑	☐	
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	☐	☑	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.04	S8.5	Is chemical waste separated from other waste and collected by a licensed chemical waste collector?	☐	☑	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☐	☑	☐	
4.06	S8.5	Is drip tray provided for chemical storage?	☐	☑	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☑	☐	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☐	☑	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☐	☑	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00	S11.10	**Landscape and Visual**				
5.01	& 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	✓			
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?		✓		
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	✓			
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?		✓		
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	✓			
6.00 6.01	S9.7	**Ecology** Is site runoff properly treated to prevent any silly runoff?		✓		
6.02	S9.7	Are silt trap installed and well-maintained?	✓			
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?		✓		
6.04	S9.7	Are construction works restricted to works area which are clearly defined?		✓		
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	✓			
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	✓			
6.07	S9.7	Is the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at minimum 1.5 m in a radius away from these individuals?	✓			
6.08	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	✓			
6.09	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	✓			
6.10	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?		✓		
6.11	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?		✓		
6.12	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	✓			
6.13	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?		✓		
6.14	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?		✓		

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
6.15	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.16	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☑	☐	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00		**Overall**				
8.01		Is the EM&A properly implemented in general?	☐	☑	☐	

12/12

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Reminder

1.) The Contractors are reminded to provide a drip tray for the chemical containers at the Dosing Station.

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: LEUNG CHUNG Ha)	(Name: Tiffany Ng)	(Name: Derek Tai)	(Name: Alex Chan)	(Name:)

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 19/12/2023 **Inspected by:** ET: Jacky Leung SO: Raymond Kok WSD: /
Contractor: Tiffany Tsang IEC: /
Inspection Time: 2:30pm

Weather							
Condition	☑ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	16 °C		**Humidity**	☑ High	☐ Moderate	☐ Low	
Wind	☑ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☑	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☑	☐	
1.00	S4.8.1	**Construction Dust**				
1.01		Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☐	☑	☐	
1.02	S4.8.1	Are screenings, enclosures, water spraying, or vacuum cleaning devices provided to dusty construction works for dust suppression?	☑	☐	☐	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☑	☐	☐	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☑	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☑	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☑	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☑	☐	
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☑	☐	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☑	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☐	☑	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☑	☐	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☑	☐	
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☑	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☑	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	✓			
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	✓			
1.17	S4.8.1	Is open burning prohibited?		✓		
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?		✓		
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?		✓		
2.03	S5.7	Are plants throttled down or turned off when not in use?		✓		
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	✓			
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	✓			
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	✓			
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?		✓		
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	✓			
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	✓			
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	✓			
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	✓			
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?		✓		
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	✓			
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?		✓		
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?		✓		
3.02	S6.9	Is effluent discharged according to the effluent discharge license?		✓		
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?		✓		
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?		✓		
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?		✓		

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☑	☐	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☑	☐	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☑	☐	☐	
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☑	☐	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☑	☐	☐	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	☑	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m3 closed grab?	☑	☐	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m3/day?	☑	☐	☐	
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☑	☐	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☑	☐	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☑	☐	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☑	☐	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☑	☐	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	☐	☑	☐	

Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.04	S8.5	Is chemical waste separated from other waste and collected by a licensed chemical waste collector?	☐	☑	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☐	☑	☐	
4.06	S8.5	Is drip tray provided for chemical storage?	☐	☑	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☑	☐	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☐	☑	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☐	☑	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00	S11.10	**Landscape and Visual**				
5.01	& 11.11	Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☑	☐	☐	
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☐	☑	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00 6.01	S9.7	**Ecology** Is site runoff properly treated to prevent any silly runoff?	☐	☑	☐	
6.02	S9.7	Are silt trap installed and well-maintained?	☑	☐	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☑	☐	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☑	☐	☐	
6.07	S9.7	Is the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at minimum 1.5 m in a radius away from these individuals?	☑	☐	☐	
6.08	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☑	☐	☐	
6.09	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☑	☐	☐	
6.10	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.11	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.12	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☑	☐	☐	
6.13	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.14	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
6.15	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.16	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☑	☐	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00		**Overall**				
8.01		Is the EM&A properly implemented in general?	☐	☑	☐	

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Reminder

1.) The Contractor are reminded to clean up the refuses near the Guardhouse B.

2.) Reminder of general housekeeping around the site.

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name:)	(Name: Tiffany Tang)	(Name: Raymond Wan)	(Name:)	(Name:)

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Contract no. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant

WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

Inspection Date: 27/12/2023 Inspected by: ET Alex Leung SO Raymond Kok WSD Mr Ho WAI POWER
Inspection Time: 9:15 - 11:00 am Contractor Bne-Kon IEC Alex Chan

Weather							
Condition	☒ Sunny	☐ Fine	☐ Overcast	☐ Drizzle	☐ Rain	☐ Storm	☐ Hazy
Temperature	26 [18] °C		Humidity	☒ High	☐ Moderate	☐ Low	
Wind	☒ Calm	☐ Light	☐ Breeze	☐ Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		**General**				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	☐	☒	☐	
0.02		Is ET Leader's log-book kept readily available for inspections?	☐	☒	☐	
1.00		**Construction Dust**				
1.01	S4.8.1	Are dusty materials, such as excavated materials, building debris and construction materials, and exposed earth surface properly covered to prevent dust emission?	☐	☒	☐	
1.02	S4.8.1	Are screenings, enclosures, water spraying, or vacuum cleaning devices provided to dusty construction works for dust suppression?	☒	☐	☐	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	☒	☐	☐	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	☐	☒	☐	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	☐	☒	☐	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	☐	☒	☐	
1.07	S4.8.1	Are all main haul roads inside the site paved or sprayed with water to minimize dust emission during vehicle movement?	☐	☒	☐	
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	☐	☒	☐	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	☐	☒	☐	
1.10	S4.8.1	Are the working areas for uprooting of trees, shrubs, or vegetation or the removal of boulders, poles, pillars sprayed with water to maintain the entire surface wet?	☐	☒	☐	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	☒	☐	☐	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	☐	☒	☐	
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	☐	☒	☐	
1.14	S4.8.1	Are stock of more than 20 bags of cement or day PFA covered or sheltered on top and 3 sides?	☐	☒	☐	

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Item No	EIA ref		N/A	Yes	No	Photo/Remarks
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	☑	☐	☐	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	☑	☐	☐	
1.17	S4.8.1	Is open burning prohibited?	☐	☑	☐	
2.00		**Construction Noise (Airborne)**				
2.01	S5.7	Are quiet plants adopted on site?	☐	☑	☐	
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?	☐	☑	☐	
2.03	S5.7	Are plants throttled down or turned off when not in use?	☐	☑	☐	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	☑	☐	☐	
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	☑	☐	☐	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	☑	☐	☐	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	☐	☑	☐	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	☑	☐	☐	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	☑	☐	☐	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	☑	☐	☐	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	☑	☐	☐	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	☐	☑	☐	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	☑	☐	☐	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	☐	☑	☐	
3.00		**Water Quality**				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	☐	☑	☐	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	☐	☑	☐	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	☐	☑	☐	
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	☐	☑	☐	
3.05	S6.9	Are sand/silt removal facilities such as sand/silt traps and sediment basins provided to remove sand/silt particles from runoff?	☐	☑	☐	

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Item No	EIA ref.		N/A	Yes	No	Photo/Remarks
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	☐	☑	☐	
3.07	S6.9	Is the drainage system properly maintained?	☐	☑	☐	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	☑	☐	☐	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	☑	☐	☐	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	☐	☑	☐	
3.11	S6.9	Are exposed slope surface properly protected?	☑	☐	☐	
3.12	S6.9	Is trench excavation avoided in the wet season as far as practicable, or if necessary, backfilled in short sections after excavation?	☑	☐	☐	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	☐	☑	☐	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	☐	☑	☐	
3.15	S6.9	Is oil leakage or spillage prevented?	☐	☑	☐	
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	☑	☐	☐	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	☑	☐	☐	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	☐	☑	☐	
3.19	S6.9	Are all fuel tanks and storage areas provided with locks and be sited on sealed areas, within bunds of capacity equal to 110% of the storage capacity of the largest tank?	☐	☑	☐	
3.20	S6.9	Are tanks, containers, storage area bunded and the locations locked as far as possible from the sensitive watercourse and stormwater drains?	☐	☑	☐	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	☐	☑	☐	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	☐	☑	☐	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	☐	☑	☐	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	☐	☑	☐	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	☑	☐	☐	
3.26	S6.9	Is closed grab dredger of 3 to 6 m^3 used for dredging at seawater intake?	☑	☐	☐	
3.27	S6.9	Is specific work staff assigned the responsibility for monitoring the number of grab dredged per hour? Is number of cycle limited to 20-21 grab per hour for 3m^3 closed grab, 10-11 grab per hour for 6m3 closed grab?	☑	☐	☐	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.28	S6.9	Is the grab operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized? Is the operator ensured the grab be properly closed before lifting the grab?	☑	☐	☐	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m3/day while the maximum allowed dredging rate at the submarine outfall is 3,500 m3/day?	☑	☐	☐	
3.30	S6.9	Is dredged marine sediment disposed of in a gazetted marine disposal area in accordance with marine dumping permit conditions of the Dumping at Sea Ordinance (DASO)?	☑	☐	☐	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	☑	☐	☐	
3.32	S6.9	Are barges filled to a level which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action?	☑	☐	☐	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	☑	☐	☐	
3.34	S6.9	Are the contractor(s) confirmed that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site?	☑	☐	☐	
3.35	S6.9	When the dredged material has been unloaded at the disposal areas, is any material accumulated on the deck or other exposed parts of the vessel removed and placed in the hold or a hopper?	☑	☐	☐	
3.36	S6.9	Is dredger maintained adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash?	☑	☐	☐	
3.37	S6.9	Is the contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic? Is regular inspection on the integrity of the silt curtain carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly?	☑	☐	☐	
3.38	S6.9	Are all vessels have a clean ballast system?	☑	☐	☐	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	☑	☐	☐	
3.40	S6.9	Is any discharge of sewage/grey wastewater? Is wastewater from potentially contaminated area on working vessels should be minimized and collected?	☑	☐	☐	
3.41	S6.9	Is any soil waste disposed overboard?	☑	☐	☐	
4.00		**Waste Management**				
4.01	S8.5	Is a trip-ticket system implemented to monitor the disposal of C&D and solid wastes at public filling facilities and landfills?	☐	☑	☐	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	☐	☑	☐	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	☐	☑	☐	

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Item No	EIA ref		N/A	Yes	No	Photo/Remarks
4.04	S8.5	Is chemical waste separated from other waste and collected by a licensed chemical waste collector?	☐	☑	☐	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	☐	☑	☐	
4.06	S8.5	Is drip tray provided for chemical storage?	☐	☑	☐	
4.07	S8.5	Are all containers for chemical waste properly labelled?	☐	☑	☐	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	☐	☑	☐	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	☑	☐	☐	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	☐	☑	☐	
4.11	S8.5	Is an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or of 20% by volume of the chemical waste stored in that area, whichever is the greatest, provide?	☐	☑	☐	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	☐	☑	☐	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	☐	☑	☐	
4.14	S8.5	Is general refuse disposed of properly and regularly?	☐	☑	☐	
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	☐	☑	☐	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	☐	☑	☐	
4.17	S8.5	Are C&D wastes sorted on site?	☐	☑	☐	
4.18	S8.5	Are C&D waste disposed of properly?	☐	☑	☐	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	☐	☑	☐	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	☐	☑	☐	
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	☐	☑	☐	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	☐	☑	☐	
5.00	S11.10 & 11.11	**Landscape and Visual**				
5.01		Are Is site hoarding provided?	☑	☐	☐	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	☐	☑	☐	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	☑	☐	☐	

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Item No	EIA ref		N/A	Yes	No	Photo/Remarks
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	☑	☐	☐	
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	☐	☑	☐	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	☑	☐	☐	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	☐	☑	☐	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	☑	☐	☐	
6.00	S9.7	**Ecology**	☐	☑	☐	
6.01		Is site runoff properly treated to prevent any silty runoff?				
6.02	S9.7	Are silt trap installed and well-maintained?	☑	☐	☐	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	☐	☑	☐	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	☐	☑	☐	
6.05	S9.7	For slope mitigation works within the Clear Water Bay Country Park, are tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical?	☐	☑	☐	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	☑	☐	☐	
6.07	S9.7	Is the alignment of flexible barriers optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable? Are the alignment of flexible barriers positioned at minimum 1.5 m in a radius away from these individuals?	☑	☐	☐	
6.08	S9.7	Is temporary fencing installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction? Is a sign identifying the site attached to the fence and flagging tape shall be attached to the individuals to visualize their locations?	☑	☐	☐	
6.09	S9.7	Is a specification for fencing and demarcating individuals of Marsdenai lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	☑	☐	☐	
6.10	S9.7	Is any induction training provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance?	☐	☑	☐	
6.11	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	☐	☑	☐	
6.12	S9.7	Are fences erected along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas?	☑	☐	☐	
6.13	S9.7	Is regular check of the work site boundaries performed to ensure that they are not breached and that damage does not occur to surrounding areas?	☐	☑	☐	
6.14	S9.7	Is any damage and disturbance avoided, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal?	☐	☑	☐	

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Item No	EIA ref		N/A	Yes	No	Photo/Remarks
6.15	S9.7	Are temporarily affected areas reinstated, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting?	☑	☐	☐	
6.16	S9.7	Are affected habitats within the Clear Water Bay Country Bay reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works?	☑	☐	☐	
7.00		**Landfill Gas Hazard**				
7.01	S12.7	Are the safety procedures implemented to minimise the risks of fires and explosions, asphyxiation of works and toxicity effects during all works?	☐	☑	☐	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	☐	☑	☐	
7.03	S12.7	Are the training with regard to the awareness of potential hazards of working in confined spaces provided from the Contractor to the workers?	☐	☑	☐	
7.04	S12.7	Are the safety officers trained with regard to landfill gas and leachate related hazards and presented on the site throughout the works undertaken below grade?	☐	☑	☐	
7.05	S12.7	Are the all personnel working on site and all visitor made aware of the possibility of ignition of gas, the possible presence of contaminated water and the need to avoid physical contact?	☐	☑	☐	
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	☐	☑	☐	
7.07	S12.7	Are the monitoring frequency and areas being specified by the safety officers or appropriately qualified person? Are the all measurements being recorded and documented?	☐	☑	☐	
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	☑	☐	☐	
7.09	S12.7	Is the method statement covering all normal and emergency procedures provided by the drilling contractor prior to the commencement of the site works?	☑	☐	☐	
7.10	S12.7	Are the below ground services entries being sealed to prevent gas entry? Are the grilled metal covers being used for below grade cable trenches?	☑	☐	☐	
7.11	S12.7	Is each manhole or utility pit monitored with two measurements (at mid-depth and base) for minimum of 10 minutes? Is the steady reading and peak reading recorded at each manhole or utility pit?	☑	☐	☐	
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	☐	☑	☐	
8.00		**Overall**				
8.01		Is the EM&A properly implemented in general?	☐	☑	☐	

Remark / Follow up of Observation(s) and Non-compliance(s) of Last Weekly Site Inspection:

Observation :

① ~~Drip~~ ~~tray~~ ~~should be~~ clear and ~~separate~~ ~~the~~ ~~the~~ ~~stockpile~~ to prevent ~~chemical~~ ~~contamination~~.

① Soil ~~Stockpile~~ on drip tray should be cleared and stored separately to ~~per~~ prevent ~~cem~~ contamination. (Admin Building)

Signatures:

ET Representative	Contractor's Representative	Supervising Officer's Representative	IEC's Representative	WSD's Representative
(Name: Alex Leung)	(Name: Brian Kan)	(Name: Raymond)	(Name: Alex CHAN)	(Name: Ho Wai Pung)

Appendix J

Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 December 2023	0	1	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 – 31 December 2023	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 – 31 December 2023	0	0	N/A

Appendix K

Exceedance Report (s)

Bi-Weekly Incident Report on Action Level or Limit Level Non-Compliance

Date of exceedance	Monitoring Station	Tide	Parameter	Measurement Result (mg/L)	Sampling depth	Depth Average Result (mg/L)	Action Level (mg/L)		Limit Level (mg/L)		Exceedance	Marine construction activities with contact with water (Y/N)	Exceedance related to Project (Y/N)	Reasons of non-project related exceedance						
							95%-ile	Control 120%	99%-ile	Control 130%				(1)	(2)	(3)	(4)	(5)	(6)	(7)
12/12/2023	WSR16	Ebb	Suspended Solid (SS)	--	--	5.83	5.00	5.20	6.00	5.63	Limit Level	N	N		✓		✓	✓	✓	✓
	WSR36			--	--	6.50					Limit Level	N	N		✓			✓	✓	✓
	NF1			--	--	7.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF2			--	--	5.50					Action Level	N	N		✓		✓	✓	✓	✓
14/12/2023	WSR36	Flood	Suspended Solid (SS)	--	--	4.50	5.00	4.00	6.00	4.33	Limit Level	N	N		✓			✓	✓	✓
	NF2			--	--	4.17					Action Level	N	N		✓		✓	✓	✓	✓

1) Control station value already exceed either the Action or Limit Level.
2) No silt plume or pollution discharge from site area was observed.
3) Rainfall was recorded at Tseung Kwan O during the monitoring period, rainfall may lead to release of SS content form the soil of the nearby lands (e.g., Country Park, fill bank).
4) No action and limit level exceedance observed at WSR37 (Outfall Shaft).
5) Marine construction activity was completed.
6) No operation activities related to the release of SS in the reporting period.
7) Water quality mitigation measures were observed maintained / implemented properly (double silt curtain).

Conclusion:

During water quality monitoring on 12 December 2023 and 14 December 2023, four (4) Action Level exceedances and three (3) Limit Level exceedance were recorded during mid-ebb tide, and two (2) Action Level and one (1) Limit Level exceedances of Suspended Solids were recorded during mid-flood tide. Total six (6) Action Level and four (4) Limit Level exceedances for SS of impact water quality monitoring were recorded between 1 December to 15 December 2023.

The marine construction works were completed on 1 September 2023. The operation activities were shown in the table below.

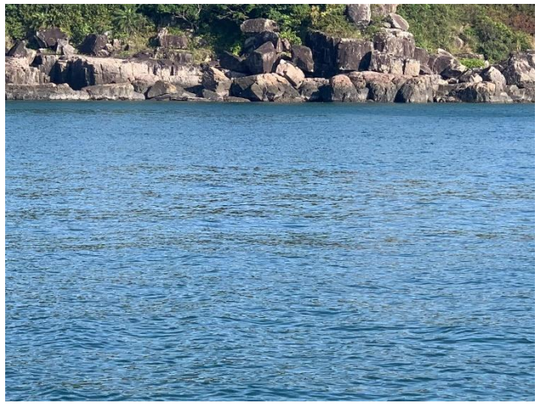
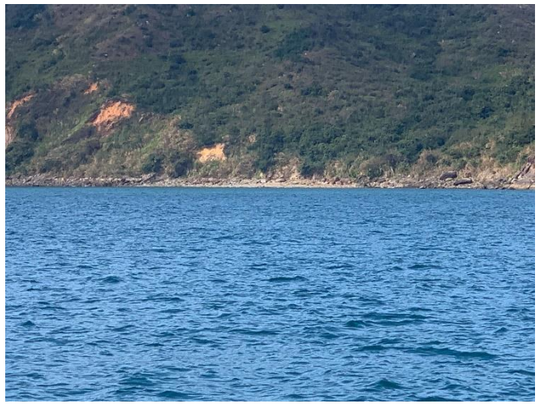
According to the record, most of the operation activities were instrument checking and adjustment, no operation activities might lead to the release of SS during the reporting period.

After investigation, all exceedances were considered non-project related.

Operation Activities:

12 December 2023	14 December 2023
• Production of desalinated water • Goods receiving at the plant • Instrumentation and Control Instrument checking • Instrument adjustment at Dissolved Air Flotation and Filtration (ActiDAFF)	• Production of desalinated water • CCT and product water sampling and analysis • Instrumentation and Control Instrument checking and maintenance

Supporting Photo:

Date of exceedance	Monitoring station(s)			
12/12/2023				
	WSR16	WSR36	NF1	NF2
14/12/2023				
	WSR36	NF2		

Bi-Weekly Incident Report on Action Level or Limit Level Non-Compliance

Date of exceedance	Monitoring Station	Tide	Parameter	Measurement Result (mg/L)	Sampling depth	Depth Average Result (mg/L)	Action Level (mg/L)		Limit Level (mg/L)		Exceedance	Marine construction activities with contact with water (Y/N)	Exceedance related to Project (Y/N)	Reasons of non-project related exceedance						
							95%-ile	Control 120%	99%-ile	Control 130%				(1)	(2)	(3)	(4)	(5)	(6)	(7)
16/12/2023	WSR1	Flood	Suspended Solid (SS)	--	--	3.50	5.00	3.50	6.00	3.79	Action Level	N	N		✓		✓	✓	✓	✓
	WSR2			--	--	3.58					Action Level	N	N		✓		✓	✓	✓	✓
19/12/2023	WSR4	Flood	Suspended Solid (SS)	--	--	4.58	5.00	4.40	6.00	4.77	Action Level	N	N		✓			✓	✓	✓
	WSR37			--	--	5.83					Limit Level	N	N		✓			✓	✓	✓
	NF2			--	--	4.58					Action Level	N	N		✓			✓	✓	✓
21/12/2023	WSR1	Flood	Suspended Solid (SS)	--	--	4.00	5.00	3.70	6.00	4.01	Action Level	N	N		✓		✓	✓	✓	✓
	WSR2			--	--	4.67					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR3			--	--	4.83					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR4			--	--	4.33					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR16			--	--	4.17					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR33			--	--	4.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF1			--	--	4.83					Limit Level	N	N		✓		✓	✓	✓	✓
	NF2			--	--	4.50					Limit Level	N	N		✓		✓	✓	✓	✓
	NF3			--	--	4.33					Limit Level	N	N		✓		✓	✓	✓	✓
23/12/2023	NF3	Ebb	Suspended Solid (SS)	--	--	5.67	5.00	5.20	6.00	5.63	Limit Level	N	N		✓		✓	✓	✓	✓
26/12/2023	WSR1	Flood	Suspended Solid (SS)	--	--	4.00	5.00	3.70	6.00	4.01	Action Level	N	N		✓		✓	✓	✓	✓
	WSR2			--	--	4.67					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR3			--	--	4.83					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR4			--	--	4.33					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR16			--	--	4.17					Limit Level	N	N		✓		✓	✓	✓	✓
	WSR33			--	--	4.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF1			--	--	4.83					Limit Level	N	N		✓		✓	✓	✓	✓
	NF2			--	--	4.50					Limit Level	N	N		✓		✓	✓	✓	✓
	NF3			--	--	4.33					Limit Level	N	N		✓		✓	✓	✓	✓
28/12/2023	WSR3	Flood	Suspended Solid (SS)	--	--	4.83	5.00	4.80	6.00	5.20	Limit Level	N	N		✓		✓	✓	✓	✓
	WSR16			--	--	5.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF1			--	--	6.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF2			--	--	5.17					Limit Level	N	N		✓		✓	✓	✓	✓
	NF3			--	--	5.33					Limit Level	N	N		✓		✓	✓	✓	✓

1) Control station value already exceed either the Action or Limit Level.
2) No silt plume or pollution discharge from site area was observed.
3) Rainfall was recorded at Tseung Kwan O during the monitoring period, rainfall may lead to release of SS content form the soil of the nearby lands (e.g., Country Park, fill bank).
4) No action and limit level exceedance observed at WSR37 (Outfall Shaft).
5) Marine construction activity was completed.
6) No operation activities related to the release of SS in the reporting period.
7) Water quality mitigation measures were observed maintained / implemented properly (double silt curtain).

Conclusion:

During water quality monitoring on 16 December 2023, 19 December 2023, 21 December 2023, 23 December 2023, 26 December 2023 and 30 December 2023, twenty-eight (28) Action Level exceedances and twenty-two (22) Limit Level exceedance were recorded during mid-flood tide, and one (1) Action Level and one (1) Limit Level exceedances of Suspended Solids were recorded during mid-ebb tide. Total twenty-nine (29) Action Level and twenty-three (23) Limit Level exceedances for Suspended Solid of impact water quality monitoring were recorded between 16 December to 31 December 2023.

Marine construction works were completed since 1 September 2023.

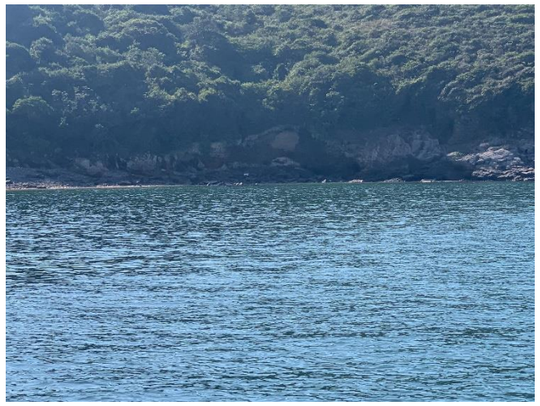
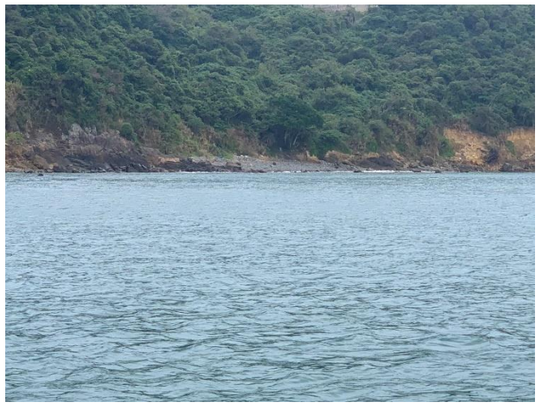
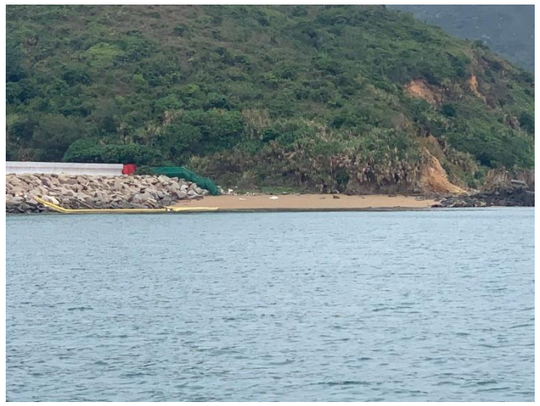
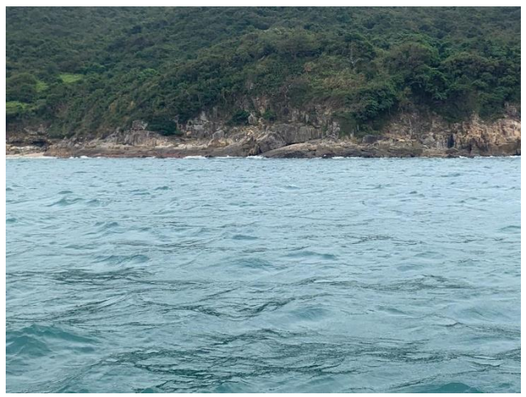
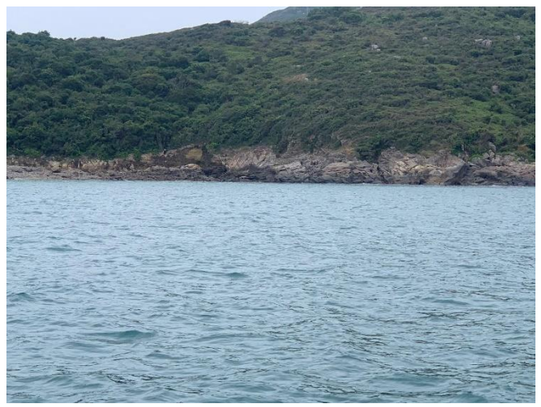
The operation activities in the reporting period were shown in the table below. The no discharge of SS during the backwashing of Dissolved Air Flotation and Filtration (ActiDAFF). The major activities of the plant operation might not lead to the release of SS during the reporting period.

After investigation, all exceedances were considered non-project related.

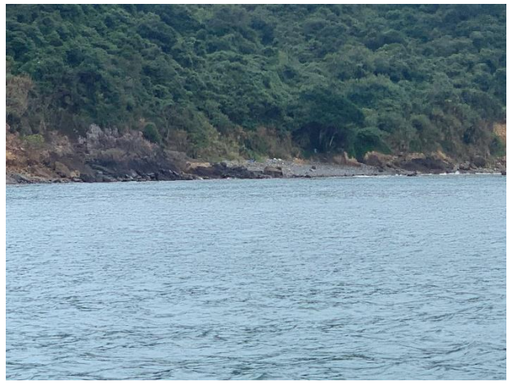
Operation Activities:

16 December 2023	19 December 2023
• Production of desalinated water • Instrument checking and maintenance	• Production of desalinated water • Goods receiving at the plant • Dissolved Air Flotation and Filtration (ActiDAFF) backwashing
21 December 2023	23 December 2023
• Production of desalinated water • Instrument checking and maintenance • Dissolved Air Flotation and Filtration (ActiDAFF) backwashing	• Production of desalinated water • Dissolved Air Flotation and Filtration (ActiDAFF) backwashing • CCT and product water sampling and analysis
26 December 2023	28 December 2023
• Production of desalinated water • Goods receiving at the plant	• Production of desalinated water • CCT and product water sampling and analysis • Dissolved Air Flotation and Filtration (ActiDAFF) backwashing • Instrument checking and maintenance

Supporting Photo:

Date of exceedance	Monitoring station(s)			
16/12/2023				
	WSR1	WSR2		
19/12/2023				
	WSR4	WSR37	NF2	
21/12/2023				
	WSR1	WSR2	WSR3	WSR4

Date of exceedance	Monitoring station(s)			
				
	WSR16	WSR33	NF1	NF2
				
	NF3			
23/12/2023				
	NF3			

Date of exceedance	Monitoring station(s)			
26/12/2023				
	WSR1	WSR2	WSR3	WSR4
				
	WSR16	WSR33	NF1	NF2
				
	NF3			

Date of exceedance	Monitoring station(s)			
28/12/2023				
	WSR3	WSR16	NF1	NF2
				
	NF3			