



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: HKWSD202/50/107903

Date: 21 March 2022

Attention: Mr W K Lau/ Mr H L Lai

**BY EMAIL & POST**  
**(email: [simon\\_wk\\_lau@wsd.gov.hk](mailto:simon_wk_lau@wsd.gov.hk)/  
[jack\\_hl\\_lai@wsd.gov.hk](mailto: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.24 (February 2022)

We refer to emails of 8 and 18 March 2022 attaching Monthly EM&A Report No.24 (February 2022) for the captioned project prepared by the ET.

We have no further comments 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

Louis Kwan  
Independent Environmental Checker

KSYL/lsm



**ACUITY**  
SUSTAINABILITY  
CONSULTING LIMITED



Website: [www.acuityhk.com](http://www.acuityhk.com)



Unit E, 12/F, Ford Glory Plaza  
Nos. 37-39 Wing Hong Street,  
Cheung Sha Wan, Kowloon.



Tel.: (852) 2698 6833  
Fax: (852) 2698 9383



水務署

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.24  
(Period from 1 February to 28 February 2022)**

Document No.

ASCL	/	200168078	/	MEMAR24	/	A
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	Prepared by:	Reviewed and Certified by:
Name	Howard Chan	Jacky LEUNG
Position	Environmental Team Member	Environmental Team Leader
Signature		
Date:	08/03/2022	08/03/2022

## REVISION HISTORY

<b>REV.</b>	<b>DESCRIPTION OF MODIFICATION</b>	<b>DATE</b>
A	First Issue for Comments	8 March 2022

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## **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 24<sup>th</sup> 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 February 2022 to 28 February 2022.
- 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:
- Land Survey;
  - Construction of solar panel supports at roof of ActiDAFF;
  - Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
  - Construction of sludge thickener, Post Treatment Building (PTB);
  - Construction of On-Site Chlorine Generation Building (OSCG Bldg);
  - Internal finishing work at Product Water Storage Tank (PWST), Main Electrical & Central Chiller Plant Building;
  - Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
  - Construction of manholes no.15 and no.16 adjacent to ActiDAFF and RO;
  - Construction of 1/F to 2/F walls and columns of Administration Building;
  - Construction of reinforced concrete (RC) support of Inspection Corridor;
  - Construction of structural wall and Roof of Chemical Building;
  - Outfall Shaft – Dewatering; Pre-drill, Rock cutting and excavations;
  - Intake shaft – Idling;
  - Pipe jacking at Combined Shaft for Outfall pipelines;

- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works;
- E&M works – ActiDaff – scaffolding, installation of E&M piping;
- E&M works – Reverse Osmosis (RO) Building – Fire services installation;

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

- Construction dust and noise generation from marine construction works, excavation works, construction works, rock cutting works and pipe piling driving works
- Waste generation from the construction activities
- Impact on water quality from marine construction works and inland construction works

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;
- Sorting and storage of general refuse and construction waste; and
- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge.

#### 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 contract-related exceedance of the Action Level was recorded during the reporting period.

A9. The EM&A works for water quality were conducted during the reporting period in accordance with the EM&A Manual.

A10. Fifty-four (54) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-eight (38) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level.

A11. Details of the exceedance are presented in **Appendix O**.

- A12. Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022 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 O**.
- A13. It was concluded that all exceedances recorded in February were unrelated to the Contract.
- A14. In this reporting period, 18 times of landfill gas monitoring were recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.
- A15. Joint site inspections of the construction work by ET and IEC were carried out on 8, 17, 23 and 28 February 2022 to audit the mitigation measures implementation status. Observations 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

- A16. No environmental complaint was received during the reporting period.
- A17. Neither notification of summons nor prosecution was received for the Contract.

#### REPORTING CHANGE

- A18. 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

- A19. Key activities anticipated in the next reporting period for the Contract will include the followings:
- Land Survey;
  - Construction of solar panel supports at roof of ActiDAFF;
  - Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
  - Construction of sludge thickener, Post Treatment Building (PTB);
  - Construction of On-Site Chlorine Generation Building (OSCG Bldg);
  - Internal finishing work at Product Water Storage Tank (PWST), Main Electrical & Central Chiller Plant Building;
  - Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
  - Construction of manholes no.15 and no.16 adjacent to ActiDAFF and RO;
  - Construction of 1/F to 2/F walls and columns of Administration Building;
  - Construction of reinforced concrete (RC) support of Inspection Corridor;

- Construction of structural wall and Roof of Chemical Building;
- Outfall Shaft – Dewatering; Pre-drill, Rock cutting and excavations;
- Intake shaft – Idling;
- Pipe jacking at Combined Shaft for Outfall pipelines;
- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works;
- E&M works – ActiDaff – scaffolding, installation of E&M piping;
- E&M works – RO- Fire services installation;
- E&M works – CO2 tank area – installation of Silos; and
- E&M works – Chiller Building – installation of chillers;

A20. The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from pipe jacking works, rock cutting works, drilling, excavation and construction works;
- Waste generation from construction activities; and
- Impact on water quality from marine construction works and inland construction works.

A21. The key environmental mitigation measures for the Contract 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;
- Sorting and storage of general refuse and construction waste; and
- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge.



## 1. BASIC CONTRACT INFORMATION

### BACKGROUND

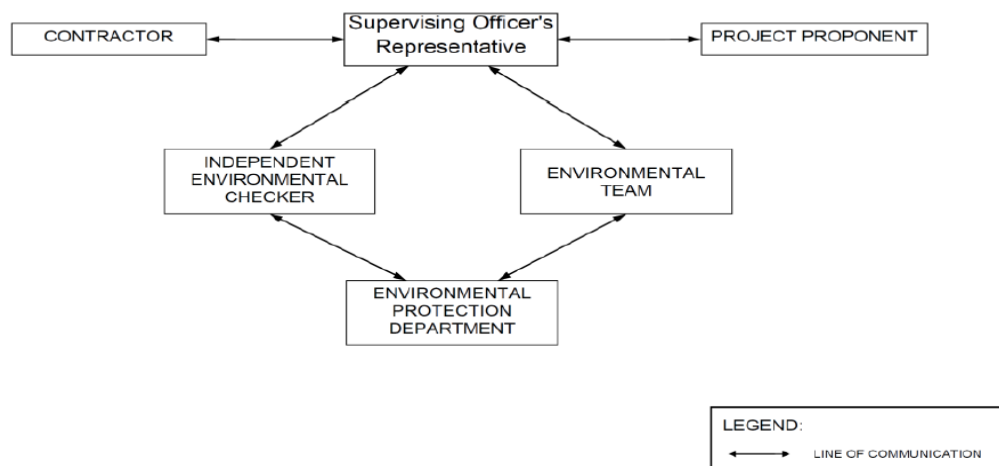
- 1.1. The Acciona Agua, S.A. Trading, Jardine Engineering Corporation, Limited and China State Construction Engineering (Hong Kong) Limited As AJC Joint Venture (AJCJV) is contracted to carry out the Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant (DPTKO) under Contract No. 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 24<sup>th</sup> Monthly EM&A Report for the Contract which summarizes the key findings of the EM&A programme during the reporting period from 1 February to 28 February 2022.

### 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	Benny Lam	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
Acuity Sustainability Consulting Limited	Environmental Team Leader	Jacky Leung	2698-6833
ANewR Consulting Limited	Independent Environmental Checker (IEC)	Louis Kwan	2618-2831

#### SUMMARY OF CONSTRUCTION WORKS

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

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

- Land Survey;
- Construction of solar panel supports at roof of ActiDAFF;
- Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
- Construction of sludge thickener, Post Treatment Building (PTB);
- Construction of On-Site Chlorine Generation Building (OSCG Bldg);
- Internal finishing work at Product Water Storage Tank (PWST), Main Electrical & Central Chiller Plant Building;
- Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
- Construction of manholes no.15 and no.16 adjacent to ActiDAFF and RO;
- Construction of 1/F to 2/F walls and columns of Administration Building;

- Construction of reinforced concrete (RC) support of Inspection Corridor;
- Construction of structural wall and Roof of Chemical Building;
- Outfall Shaft – Dewatering; Pre-drill, Rock cutting and excavations;
- Intake shaft – Idling
- Pipe jacking at Combined Shaft for Outfall pipelines;
- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works
- E&M works – ActiDaff – scaffolding, installation of E&M piping;
- E&M works – Reverse Osmosis (RO) Building – Fire services installation

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/ Licenses/ Notification	Reference	Validity Period
Environmental Permit	FEP – 01/503/2015/A	Throughout the Contract
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Ref. No.: 451539	Throughout the Contract
Billing Account for Disposal of Construction Waste	7036276	Throughout the Contract
Chemical Waste Producer Registration	5213-839-A2987-01	Throughout the Contract
Wastewater Discharge Licence (Land and Marine works)	WT00035775-2020	23/08/2021 – 31/07/2025
Construction Noise Permit (24 hrs) – CNP for general works, TBM at Combined Shaft and marine works	GW-RE1041-21	01/11/2021 – 30/04/2022
Vessel CHITs for fill disposal	7039300	20/01/2022 – 20/04/2022
Dumping at Sea Ordinance (DASO) Permit to dump materials (Category L) at sea	EP/MD/22-028	02/08/2021 – 01/02/2022

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**

<b>Parameters</b>	<b>Status</b>
<b>Water Quality</b>	
Baseline Monitoring under EM&A Manual	The baseline water quality monitoring was conducted between 12 May 2020 to 6 Jun 2020
Impact Monitoring	On-going
<b>Noise</b>	
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	On-going
<b>Waste Management</b>	
Mitigation Measures in Waste Management Plan	On-going
<b>Landfill Gas</b>	
Regular Monitoring when Construction Works are within the 250m Consultation Zone	In this reporting period, 18 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.
<b>Environmental Audit</b>	
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. In accordance with the EM&A Manual, baseline noise level at the noise monitoring stations were established as presented in the Baseline Monitoring Report. Impact noise monitoring will be conducted once per week in the form of 30-minutes measurements Leq, L10 and L90 levels recorded at each monitoring station between 0700 and 1900 on normal weekdays.
- 2.3. Referring to EM&A manual Section 4.1.2, the impact noise monitoring should be carried out at all the designated monitoring stations when there are contract-related construction activities undertaken within a radius of 300m from the monitoring stations.
- 2.4. No impact monitoring for noise impact was conducted in the reporting month due to the overly distant monitoring station from the works location, where they were farther than 1 km from the closest monitoring station NSR4 to the works location.
- 2.5. Impact noise monitoring will be conducted weekly in the reporting period between 0700-1900 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.
- 2.6. 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. **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 Leq 5min/Leq 30min (average of 6 consecutive Leq 5min)	Leq 30min L10 30min & L90 30min

### MONITORING LOCATIONS

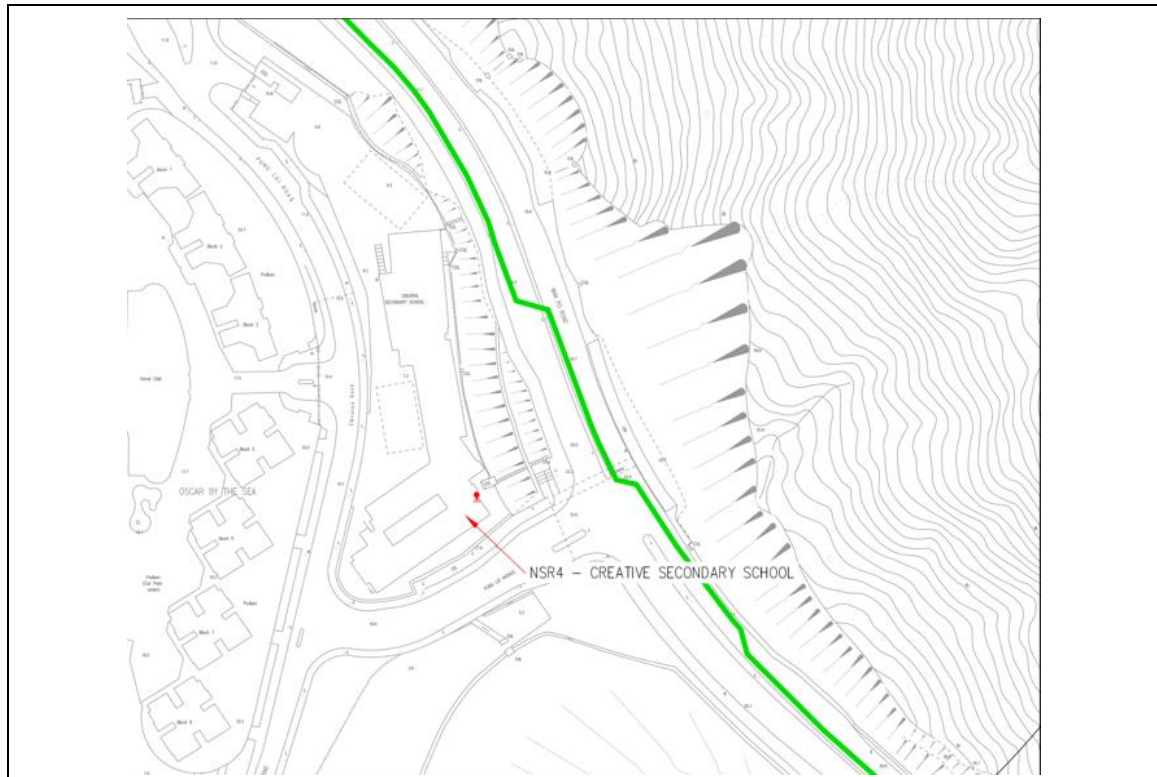
- 2.7. The monitoring locations were normally made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. A correction of +3dB(A) should be made to the free-field measurements.

2.8. 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.

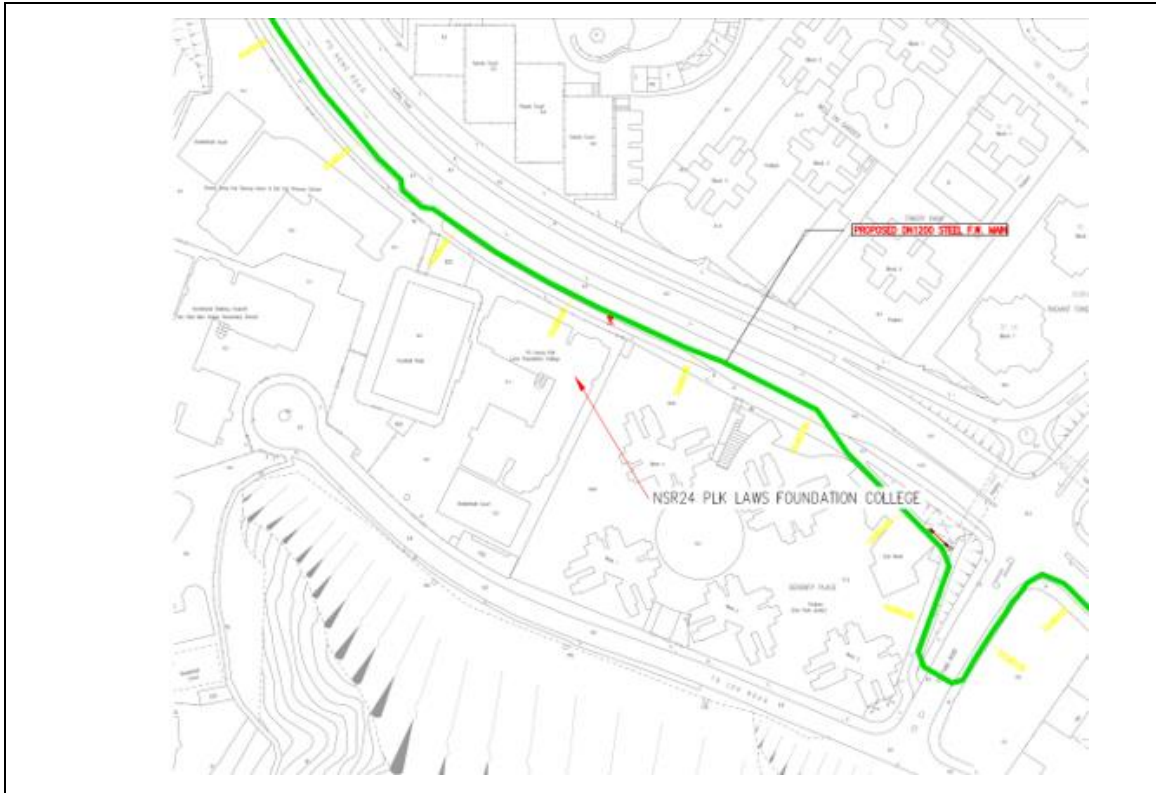
**Table 2.2 Noise Sensitive Receivers**

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

2.9. 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

- 2.10. Integrated sound level meter was used for the noise monitoring. The meter was 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 was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements was accepted as valid only if the calibration levels before and after the noise measurements agree to within 1.0 dB(A). Calibration certificates of the instruments used to be shown at **Appendix F** are intentionally left blank since no impact monitoring equipment was used in the reporting month.
- 2.11. 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

- 2.12. 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	<ul style="list-style-type: none"> <li>• 70 dB(A) for school and</li> <li>• 65 dB(A) during examination period</li> </ul>

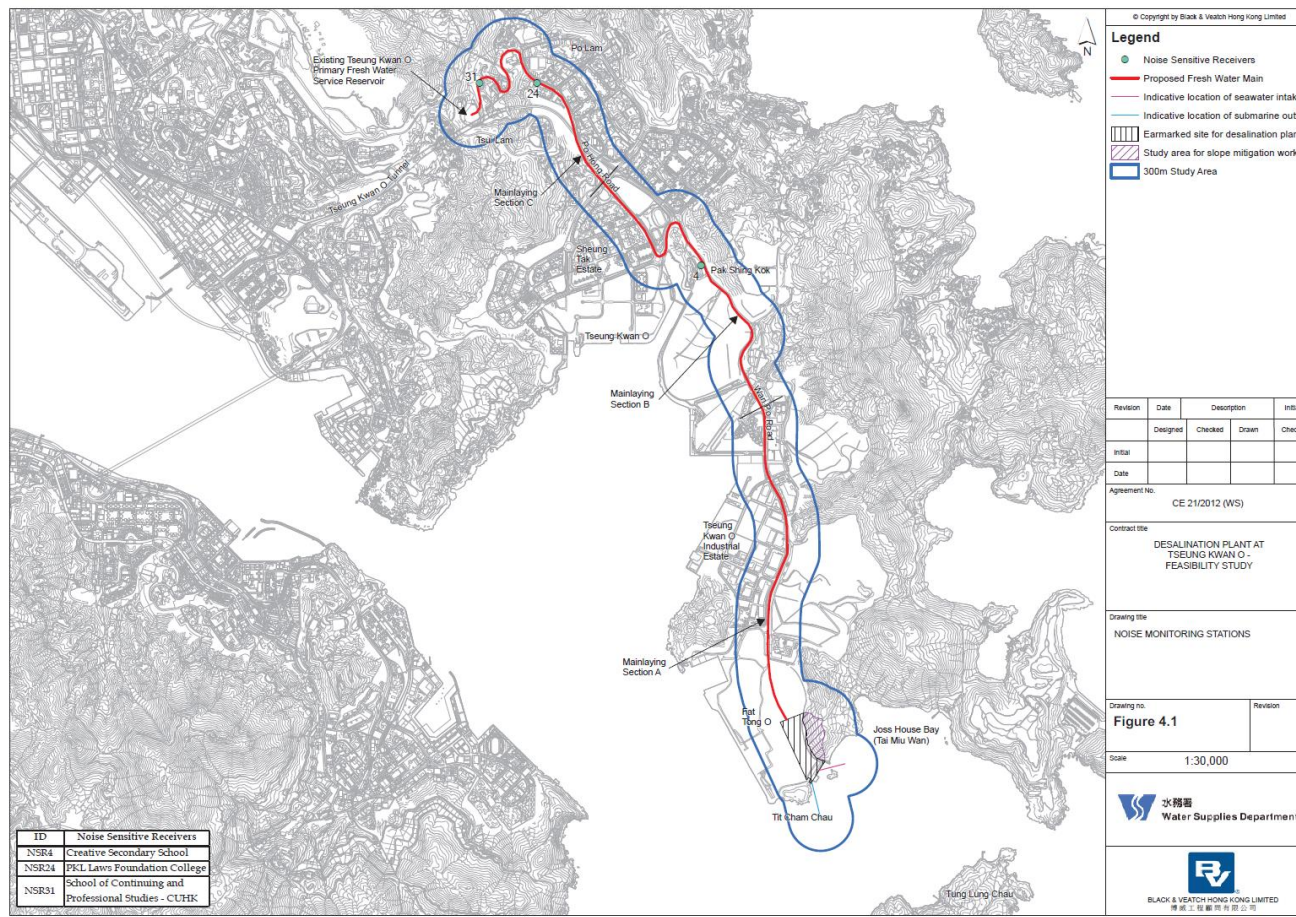
Note: Limits specified in the GW-TM and IND-TM for construction and operation noise, respectively.

- 2.13. 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**

2.14. 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 monitoring for noise impact 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 EM&A is required during dredging for the submarine pipelines and, during operation phase. In addition, baseline water quality monitoring will be required prior to the commencement of marine construction activities. 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. The water quality monitoring programme will be carried out to allow any deteriorating water quality to be readily detected and timely action taken to rectify the situation. The status and locations of water quality sensitive receivers and the marine works location may change after issuing this Document. If required, the ET in consultation with IEC will propose updated monitoring locations and seek approval from EPD.
- 3.2. 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;
  - Operation phase – first year upon commissioning; and,
  - Continuous monitoring of effluent quality.
- 3.3. In addition, the marine works contractor is required to complete a silt curtain efficiency test for the combined use of floating silt curtain type and cage type silt curtain for dredging at seawater intake to confirm the silt curtain reduction efficiency assumptions of the assessment. The details of testing plan together with the silt curtain deployment plan shall be submitted by the ET to seek approval from the IEC and EPD.
- 3.4. With the onset of marine dredging activities in late April 2021 at Outfall Shaft Area, a silt curtain efficiency test has been conducted at the Outfall Shaft Area on 16th April 2021 at 6 monitoring intervals (08:00, 10:00, 12:00, 14:00, 16:00, 18:00). The baseline monitoring event has been conducted on 10th April 2021 at 5 monitoring locations. Testing protocols and methodologies had followed the guidelines as presented in the EM&A Manual Annex C. Detailed analysis of in-situ and laboratory data was presented in a separate report which has been submitted to EPD after approval by IEC on 31 May 2021. The overall Silt Removal Effectiveness at Outfall Shaft Area for the combined used of cage and floating type silt curtains was 95.28%.

#### WATER QUALITY PARAMETERS

- 3.5. 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 baseline monitoring are listed in **Table 3.1**.

**Table 3.1 Parameters measured in the Impact Marine Water Quality Monitoring**

Parameters	Unit	Abbreviation
<b>In-situ measurements</b>		
Dissolved oxygen	mg/L	DO
Temperature	°C	-
pH	-	-
Turbidity	NTU	-
Salinity	‰	-
Total Residual Chlorine <sup>NOTE1</sup>	mg/L	TRC
<b>Laboratory measurements</b>		
Suspended Solids	mg/L	SS
Iron-Soluble <sup>NOTE2</sup>	mg/L	Fe
Anti-scalant as Reactive Phosphorus <sup>NOTE2</sup>	mg/L	PO <sub>4</sub> as P-

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

NOTE 2: The testing methods shall be submitted to EPD for approval prior to the commencement of monitoring programme

- 3.6. In addition to the water quality parameters, other relevant data were also be 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

- 3.7. For water quality monitoring, the following equipment will be 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 (e.g. Kahlsico Water Sampler 13SWB203 or an approved similar instrument). 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 for Discharge of Sterilization Water** - Total residual chlorine (TRC) shall be measured in-situ using a handheld colorimeter with its testing toolkits.

#### **SAMPLING / TESTING PROTOCOLS**

- 3.8. 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.
- 3.9. On-site calibration of field equipment was follow 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

- 3.10. All laboratory works were carried out in a HOKLAS accredited laboratory. Sufficient volume of each water sample was collected at the monitoring stations for carrying out the laboratory analyses. Using chain of custody forms, collected water samples were transferred to a HOKLAS accredited laboratory for immediate processing. The determination work was start within the next working day after collection of the water samples. The laboratory measurements were provided to the client within 5 working days of the sampling event. 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 submitted information was including pre-treatment procedures, instrument use, Quality Assurance/Quality Control (QA/QC) details (such as blank, spike recovery, number of duplicate samples per-batch etc), detection limits and accuracy. The QA/QC details were in accordance with requirements of HOKLAS or another internationally accredited scheme.
- 3.11. Parameters for laboratory measurements, their standard methods and their 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 (mg/L)	Instrumental, CTD	0.1	-	±25%
Temperature (°C)	Instrumental, CTD	0.1	-	±25%
pH	Instrumental, CTD	0.1	-	±25%
Turbidity (NTU)	Instrumental, CTD	0.1	-	±25%
Salinity (‰)	Instrumental, CTD	0.1	-	±25%
Suspended Solids (mg/L)	APHA 17 <sup>th</sup> Ed 2540D	1.0	2.0	±17%
Total Residual Chlorine (mg/L)	APHA 21 <sup>st</sup> Ed 4500 – Cl <sub>2</sub>	0.1 <sup>NOTE1</sup>	0.2 <sup>NOTE1</sup>	±10% <sup>NOTE1</sup>
Iron-soluble	USEPA 6010C	0.2 <sup>NOTE1</sup>	0.2 <sup>NOTE1</sup>	±25% <sup>NOTE1</sup>
Anti-scalant as Reactive phosphorus	APHA 4500P: B&F	0.01 <sup>NOTE1</sup>	0.01 <sup>NOTE1</sup>	±25% <sup>NOTE1</sup>

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

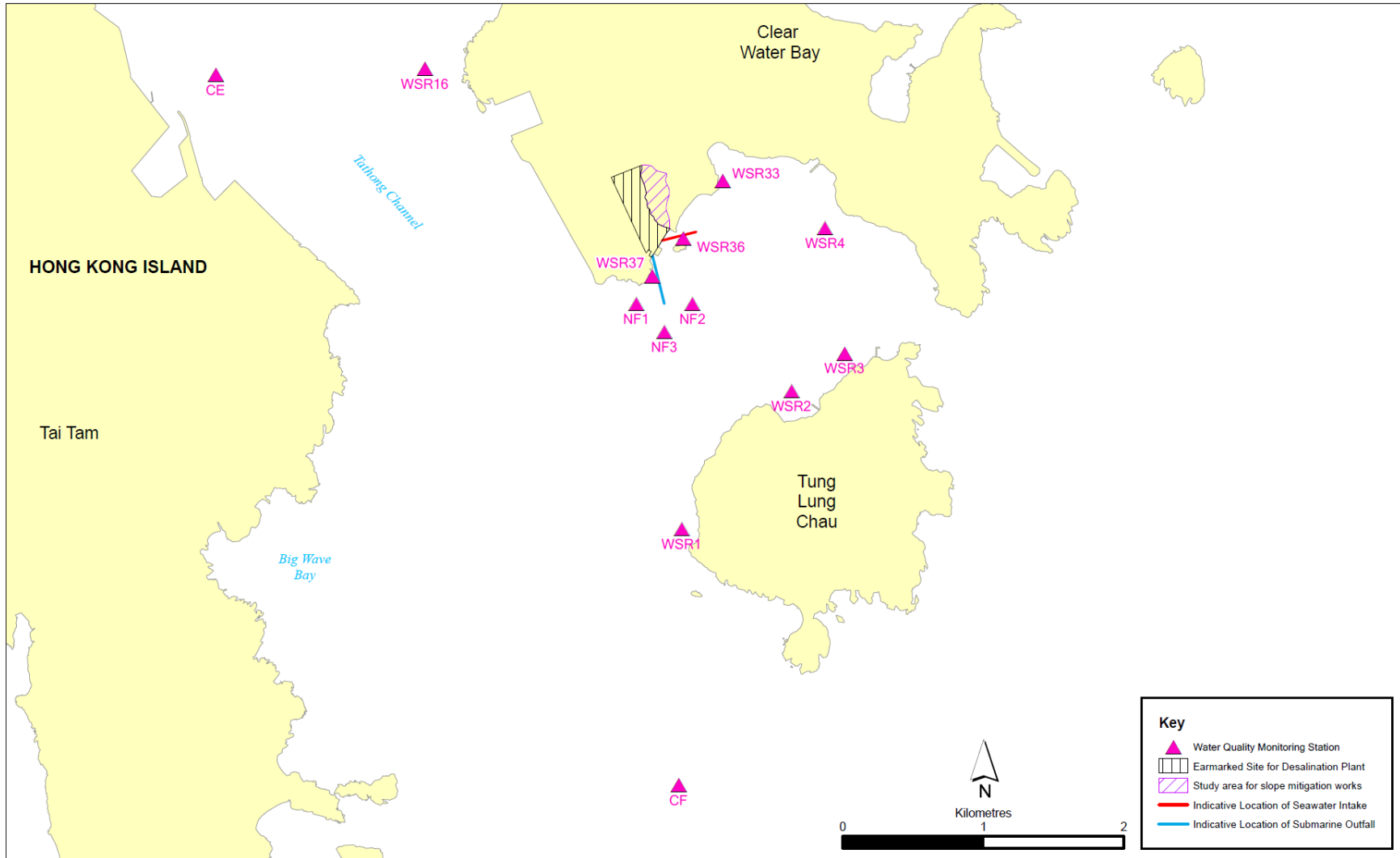
**MONITORING LOCATION**

3.13. The 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 approved by 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 mixing zone, ~ 200m west of outfall diffuser
NF2	846942	813614	Edge of mixing zone, ~ 200m east of outfall diffuser
NF3	846742	813414	Edge of mixing zone, ~ 200m south of outfall diffuser

3.14. 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.



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

### **SAMPLING FREQUENCY**

- 3.15. During periods when there are dredging works, impact monitoring was undertaken at the monitoring stations as shown in **Figure 3.1** and **Table 3.3** three days per week during the construction phase after the commencement of marine construction works and dredging activities. Monitoring at each station was undertaken at both mid-ebb and mid-flood tides on the same day. The tidal range selected for the impact monitoring was at least 0.5 m for both flood and ebb tides as far as practicable. 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.
- 3.16. The monitoring location/position, time, water depth, water temperature, salinity, weather conditions, sea conditions, tidal stage, special phenomena and work underway at the marine works site were recorded.

### **SAMPLING DEPTHS & REPLICATION**

- 3.17. For Impact monitoring, each station was sampled and measurements/ water samples was taken at three depths, 1 m below the sea surface, mid-depth and 1 m above the seabed. For stations that are less than 3 m in depth, only the mid depth sample was taken. For stations that are less than 6 m in depth, only the surface and seabed sample were taken. 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. All observations and results were recorded in the data record sheets in **Appendix L**.

### **ACTION AND LIMIT LEVELS**

- 3.18. The Action and Limit Levels have been set based on the derivation criteria specified in the EM&A Manual, as shown in **Table 3.4** below. Based on the baseline water quality monitoring data and the derivation criteria specified in **Table 3.4**, the Action/Limit Levels have been derived and are presented in **Table 3.5**.

### **MONITORING PROGRAMME**

- 3.19. The ET of the Contract had conducted the baseline water monitoring between 12 May 2020 to 6 Jun 2020 at the thirteen designated monitoring stations and the six designated monitoring at waters near TKO in accordance with the EM&A Manual and Contract Specification respectively. The monitoring results was presented in Baseline Water Quality Monitoring Report separately.
- 3.20. The commencement of marine construction and dredging activities for the Contract have been conducted in March and April 2021 respectively.



**Table 3.4 Criteria of Action and Limit Levels for Water Quality**

Parameters	Action	Limit
<b>Construction Phase Impact Monitoring</b>		
DO in mg/L	<u>Surface and Middle</u> 5%-ile of baseline data for surface and middle layer  <u>Bottom</u> 5%-ile of baseline data for bottom layers  <u>Tung Lung Chau Fish Culture Zone</u> 5.1 mgL <sup>-1</sup> or level at control station (whichever the lower)	<u>Surface and Middle</u> 4 mg L <sup>-1</sup>  <u>Bottom</u> 2 mg L <sup>-1</sup>  <u>Tung Lung Chau Fish Culture Zone</u> 5.0 mgL <sup>-1</sup> or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
<b>First-year Operation Phase Monitoring</b>		
DO in mg/L	<u>Surface and Middle</u> 5%-ile of baseline data for surface and middle layer  <u>Bottom</u> 5%-ile of baseline data for bottom layers  <u>Tung Lung Chau Fish Culture Zone</u> 5.1 mgL <sup>-1</sup> or level at control station (whichever the lower)	<u>Surface and Middle</u> 4 mg L <sup>-1</sup>  <u>Bottom</u> 2 mg L <sup>-1</sup>  <u>Tung Lung Chau Fish Culture Zone</u> 5.0 mgL <sup>-1</sup> or level at control station (whichever the lower)

SS in mg/L (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Turbidity in NTU (Depth-averaged)	≥ 95 %-ile of baseline data or 20% exceedance of value at any impact station compared with corresponding data from control station	≥ 99 %-ile of baseline data or 30% exceedance of value at any impact station compared with corresponding data from control station
Salinity in PSU (Depth-averaged)	109% of baseline level or 9% exceedance of value at any impact station compared with corresponding data from control station	110% of baseline level or 10% exceedance of value at any impact station compared with corresponding data from control station
Iron in mg/L (Depth-averaged)	0.3 mgL <sup>-1</sup>	0.3 mgL <sup>-1</sup>

**Table 3.5 Derived Action and Limit Levels for Water Quality**

Parameters	Action	Limit
<b>Construction Phase Impact Monitoring</b>		
DO in mg/L	<u>Surface and Middle</u> 7.30 mg L <sup>-1</sup> <u>Bottom</u> 7.31 mg L <sup>-1</sup> <u>Tung Lung Chau Fish Culture Zone</u> 5.1 mgL <sup>-1</sup> or level at control station (whichever the lower)	<u>Surface and Middle</u> 4 mg L <sup>-1</sup> <u>Bottom</u> 2 mg L <sup>-1</sup> <u>Tung Lung Chau Fish Culture Zone</u> 5.0 mgL <sup>-1</sup> or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	5.00 mg L <sup>-1</sup> or 20% exceedance of value at any impact station compared with corresponding data from control station	6.00 mg L <sup>-1</sup> 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
<b>First-year Operation Phase Monitoring <sup>iv</sup></b>		
DO in mg/L	<u>Surface and Middle</u> 7.30 mg L <sup>-1</sup> <u>Bottom</u> 7.31 mg L <sup>-1</sup> <u>Tung Lung Chau Fish Culture Zone</u> 5.1 mgL <sup>-1</sup> or level at control station (whichever the lower)	<u>Surface and Middle</u> 4 mg L <sup>-1</sup> <u>Bottom</u> 2 mg L <sup>-1</sup> <u>Tung Lung Chau Fish Culture Zone</u> 5.0 mgL <sup>-1</sup> or level at control station (whichever the lower)
SS in mg/L (Depth-averaged)	5.00 mg L <sup>-1</sup> or 20% exceedance of value at any impact station compared with corresponding data from control station	6.00 mg L <sup>-1</sup> 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)	34.28 PSU or 9% exceedance of value at any impact station compared with corresponding data from control station	34.60 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 mgL <sup>-1</sup>	0.3 mgL <sup>-1</sup>

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. For the Action and Limit Levels adopted during First-year Operation Phase Monitoring, further review would be made according to the EM&A Manual during Operation Phase.

### MONITORING RESULTS AND OBSERVATIONS

- 3.21. General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) were conducted on 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022.
- 3.22. Fifty-four (54) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-eight (38) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. Details of the exceedance are presented in **Appendix O**.
- 3.23. Investigation on the reason of exceedance has been carried out, where the exceedances of SS 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022 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 O**.
- 3.24. Monitoring results of 6 key parameters: Salinity, DO, turbidity, SS, pH and temperature in this reporting, are summarized in **Table 3.6** and **Table 3.7**, and detailed results are presented in **Appendix L**.

**Table 3.6 Summary of Impact Water Quality Monitoring Results (Mid-Flood)**

Locations		Parameters						
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp.(°C)
			Surface & Middle	Bottom				
CE	Avg.	32.9	9.1	9.1	8.3	4.6	6.9	18.4
	Min.	30.6	8.3	8.2	8.0	3.5	2.5	16.6
	Max.	34.0	10.1	10.2	8.4	6.1	20.0	20.4
CF	Avg.	32.9	9.1	9.1	8.3	3.7	7.5	18.5
	Min.	31.6	8.3	8.3	8.1	2.5	2.5	16.4
	Max.	34.2	10.0	10.1	8.4	5.0	27.0	20.2
WSR1	Avg.	32.8	9.2	9.2	8.3	3.0	6.3	18.4
	Min.	30.8	8.4	8.4	8.0	1.6	2.5	16.4
	Max.	34.2	10.1	10.1	8.4	4.2	19.0	20.4
WSR2	Avg.	32.8	9.1	9.1	8.3	2.2	7.9	18.3
	Min.	30.9	8.3	8.3	8.1	1.8	2.5	16.6
	Max.	34.0	10.1	10.2	8.5	2.9	23.0	19.9
WSR3	Avg.	32.8	9.0	9.0	8.2	3.0	8.1	18.3
	Min.	31.2	8.4	8.3	8.0	1.8	2.5	16.4
	Max.	33.7	10.1	10.0	8.5	4.1	21.0	19.9
WSR4	Avg.	32.9	9.1	9.1	8.3	3.2	8.2	18.4
	Min.	31.0	8.4	8.4	8.1	2.1	2.5	16.5
	Max.	34.4	10.0	10.0	8.5	4.6	22.0	20.1
WSR16	Avg.	33.1	8.9	8.9	8.3	3.1	7.0	18.4
	Min.	30.8	8.4	8.4	8.1	1.5	2.5	16.6
	Max.	34.2	9.7	9.8	8.5	4.0	21.0	20.4
WSR33	Avg.	33.0	9.0	9.0	8.3	3.2	6.4	18.4
	Min.	31.0	8.3	8.4	8.1	2.0	2.5	16.5
	Max.	34.2	9.8	9.9	8.4	4.3	21.0	20.0
WSR36	Avg.	32.8	9.0	9.0	8.3	2.8	7.0	18.4
	Min.	31.2	8.4	8.3	8.1	1.2	2.5	16.3
	Max.	33.8	10.0	10.1	8.5	4.0	25.0	20.2
WSR37	Avg.	32.9	9.0	9.0	8.2	2.9	5.8	18.3
	Min.	31.4	8.3	8.3	8.0	2.1	2.5	16.5
	Max.	34.3	9.8	9.8	8.4	4.3	13.0	20.2

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.

**Table 3.7 Summary of Impact Water Quality Monitoring Results (Mid-Ebb)**

Locations		Parameters						
		Salinity (ppt)	Dissolved Oxygen (mg/L)		pH	Turbidity (NTU)	Suspended Solids (mg/L)	Temp.(°C)
			Surface & Middle	Bottom				
CE	Avg.	32.8	9.2	9.2	8.3	3.4	7.4	18.1
	Min.	30.6	8.4	8.5	8.0	1.8	2.5	16.3
	Max.	34.2	10.1	10.2	8.5	6.1	27.0	19.7
CF	Avg.	32.8	9.1	9.2	8.3	3.9	7.4	18.3
	Min.	31.6	8.3	8.3	8.1	2.9	2.5	16.4
	Max.	33.6	10.0	10.1	8.4	5.0	27.0	19.6
WSR1	Avg.	32.8	9.1	9.1	8.3	3.2	6.2	18.2
	Min.	30.8	8.4	8.4	8.0	2.1	2.5	16.4
	Max.	34.2	10.1	10.1	8.4	4.2	19.0	19.5
WSR2	Avg.	32.8	9.2	9.2	8.3	2.3	8.3	18.2
	Min.	30.9	8.3	8.3	8.1	1.8	2.5	16.6
	Max.	34.0	10.1	10.2	8.5	2.9	23.0	19.5
WSR3	Avg.	32.8	9.0	9.0	8.2	3.1	8.4	18.1
	Min.	31.2	8.4	8.3	8.0	1.9	2.5	16.4
	Max.	33.7	10.1	10.0	8.5	4.1	21.0	19.6
WSR4	Avg.	32.8	9.1	9.1	8.3	3.2	8.5	18.2
	Min.	31.0	8.4	8.4	8.1	2.1	2.5	16.5
	Max.	33.9	10.0	10.0	8.5	4.6	22.0	19.4
WSR16	Avg.	33.0	8.9	8.9	8.3	3.2	7.4	18.2
	Min.	30.8	8.4	8.4	8.1	2.4	2.5	16.6
	Max.	34.2	9.7	9.8	8.4	4.0	21.0	19.7
WSR33	Avg.	33.0	9.0	9.0	8.3	3.3	6.5	18.2
	Min.	31.0	8.3	8.4	8.1	2.0	2.5	16.5
	Max.	34.2	9.8	9.9	8.4	4.3	21.0	19.6
WSR36	Avg.	32.7	9.0	9.0	8.3	3.0	7.2	18.1
	Min.	31.2	8.4	8.3	8.1	1.9	2.5	16.3
	Max.	33.8	10.0	10.1	8.5	4.0	25.0	19.6
WSR37	Avg.	32.7	9.0	9.0	8.2	3.0	6.0	18.1
	Min.	31.4	8.3	8.3	8.0	2.1	2.5	16.5
	Max.	33.7	9.8	9.8	8.4	4.3	13.0	19.6

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.

## 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 summarised 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 February 2022**

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 (see Note)	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)
February 2022*	175.850	0	0	0	175.850	0	0	0	0	0	94.830

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

\* The data may be updated in the next reporting month after final confirmation by the end of the month.

## 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 LOCATION

- 5.2. Monitoring of oxygen, methane, carbon dioxide and barometric pressure would be performed for excavations at 1m depth or more within the consultation Zone.
- 5.3. 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.
- 5.4. 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.

### MONITORING PROGRAMME

- 5.5. 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. In this reporting period, 18 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for oxygen, methane and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.



### MONITORING LOCATION

5.6. The area required to be monitored for landfill gas in the reporting period is shown in **Figure 5.2**.



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

### MONITORING PARAMETERS

5.7. LFG monitoring was carried out to identify any migration between the landfill and the Contract and to ensure the safety of the construction, operation and maintenance personnel working on-site, visitors and any other person within the Contract area.

5.8. The following parameters were monitored:

- Methane
- Oxygen
- Carbon Dioxide
- Barometric Pressure

5.9. Action and Limit Level are provided in **Table 5.1**.

**Table 5.1 Action and Limit Level for Landfill Gas Monitoring Equipment**

Parameters	Action Level	Limit Level
Oxygen (O <sub>2</sub> )	<19% O <sub>2</sub>	<19% O <sub>2</sub>
Methane (CH <sub>4</sub> )	>10% LEL	>20% LEL
Carbon Dioxide (CO <sub>2</sub> )	>0.5% CO <sub>2</sub>	>1.5% CO <sub>2</sub>

### MONITORING EQUIPMENT

5.10. 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)

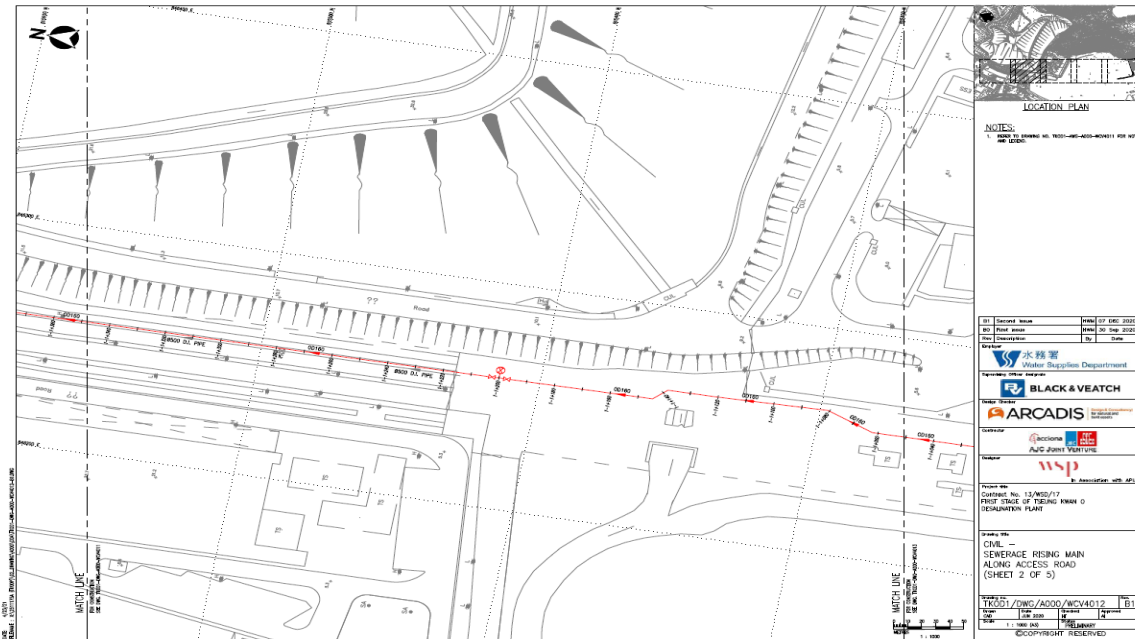


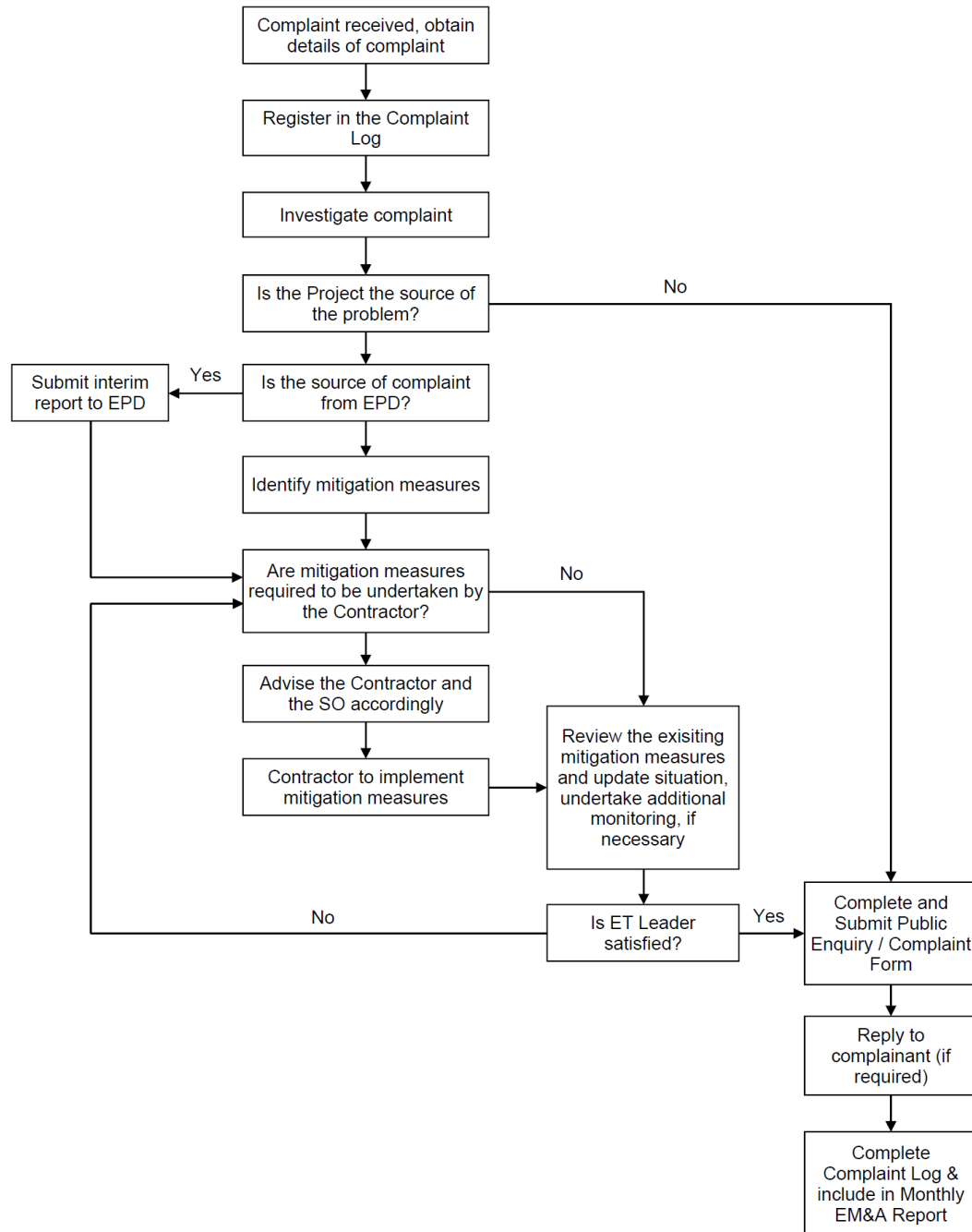
Figure 5.2 Location Map for Landfill Gas Monitoring at Wan Po Road

### MONITORING RESULTS AND OBSERVATIONS

5.11. In this reporting period, 18 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.

## 6. SUMMARY OF MONITORING EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

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



**Figure 6.1 Environmental Complaint Handling Procedures**

- 6.2. 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.
- 6.3. General water quality monitoring at the ten monitoring stations (CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36 and WSR37) were conducted on 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022.
- 6.4. Fifty-four (54) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-eight (38) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. Details of the exceedance are presented in **Appendix O**.
- 6.5. Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022. 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 O**.
- 6.6. In this reporting period, 18 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.
- 6.7. Moreover, oil stains were also observed at CEDD pier after leaving of Explosives Vessel on 9 and 23 February 2022 by Supervising Officer's Representative (SOR) during site inspection. ET will keep closely monitoring the performance of Contractor, implementation of water quality mitigation measure and other contamination issue around the Project site, to ensure the EM&A requirement is properly implemented.
- 6.8. No notification of summons and prosecution was received in the reporting period.
- 6.9. Statistics on complaints and regulatory compliance are summarized in **Appendix J**.

## 7. EM&A SITE INSPECTION

- 7.1. 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 8, 17, 23 and 28 February 2022 at the site portions listed in **Table 7.1** below.

**Table 7.1 Summaries of Site Inspection Record**

Date	Inspected Site Portion	Time
8 February 2022	TKO 137	14:30 – 17:00
17 February 2022	TKO 137	11:30 – 12:00
23 February 2022	TKO 137	11:00 – 12:00
28 February 2022	TKO 137	09:00 – 11:00

- 7.2. Joint site inspections with IEC were carried out on 8, 17, 23 and 28 February 2022.
- 7.3. 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
8 February 2022	No major observations were recorded on the reporting day.	Nil.
17 February 2022	No major observations were recorded on the reporting day.	Nil.
23 February 2022	No major observations were recorded on the reporting day.	Nil.
28 February 2022	No major observations were recorded on the reporting day.	Nil.

- 7.4. 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**.

## 8. FUTURE KEY ISSUES

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

- Land Survey;
- Construction of solar panel supports at roof of ActiDAFF;
- Construction of Reverse Osmosis (RO) Building - staircases and internal finishing;
- Construction of sludge thickener, Post Treatment Building (PTB);
- Construction of On-Site Chlorine Generation Building (OSCG Bldg);
- Internal finishing work at Product Water Storage Tank (PWST), Main Electrical & Central Chiller Plant Building;
- Manhole construction and Glass Reinforced Plastic (GRP) pipe installation;
- Construction of manholes no.15 and no.16 adjacent to ActiDAFF and RO;
- Construction of 1/F to 2/F walls and columns of Administration Building;
- Construction of reinforced concrete (RC) support of Inspection Corridor;
- Construction of structural wall and Roof of Chemical Building;
- Outfall Shaft – Dewatering; Pre-drill, Rock cutting and excavations;
- Intake shaft – Idling
- Pipe jacking at Combined Shaft for Outfall pipelines;
- Intake tunnel – Demobilize the jack pipe system and commencement of grouting works;
- E&M works – ActiDaff – scaffolding, installation of E&M piping;
- E&M works – RO- Fire services installation;
- E&M works – CO2 tank area – installation of Silos;
- E&M works – Chiller Building – installation of chillers.

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

- Construction dust and noise generation from construction pipe piling driving works, breaking rock surface, excavation works and marine construction works
- Waste generation from construction activities
- Impact on water quality from marine construction works and inland construction works

8.3. 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

- Deployment of temporary silt curtain in the area where marine construction works were conducted and deployment of water sedimentation tanks for treatment of wastewater at inland and marine areas before discharge
- 8.4. Referring to EM&A Manual Section 4.1.2, the impact noise monitoring should be carried out at all the designated monitoring stations when there are project-related construction activities undertaken within a radius of 300m from the monitoring stations.
- 8.5. The impact noise monitoring schedule for the next reporting month to be shown at **Appendix K** is not included since no impact noise monitoring will be conducted in the next reporting month.



## 9. CONCLUSIONS AND RECOMMENDATIONS

- 9.1. This is the 24<sup>th</sup> Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 February to 28 February 2022, in accordance with the EM&A Manual and the requirement under FEP-01/503/2015/A.
- 9.2. 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.
- 9.3. The EM&A works for water quality were conducted during the reporting period in accordance with the EM&A Manual.
- 9.4. Fifty-four (54) of the general water quality monitoring results of suspended solids (SS) obtained had exceeded the Action Level. Thirty-eight (38) of the general water quality monitoring results of SS obtained during the reporting period had exceeded the Limit Level. Details of the exceedance are presented in **Appendix O**.
- 9.5. Investigation on the reason of exceedance has been carried out, where the exceedances of SS on 4, 8, 10, 12, 15, 17, 19, 22, 24 and 26 February 2022 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 O**.
- 9.6. It was concluded that all exceedances recorded in the reporting month were unrelated to the project.
- 9.7. In this reporting period, 18 time of landfill gas monitoring was recorded at Wan Po Road (Ch1+625 – Ch1+513). No exceedance of action and limit levels for methane, oxygen and carbon dioxide was observed. Monitoring was conducted during excavations at 1m depth or more within the consultation zone and whenever workers entered the excavation on the day.
- 9.8. Moreover, oil stains were also observed at CEDD pier after leaving of Explosives Vessel on 9 and 23 February 2022 by Supervising Officer's Representative (SOR) during site inspection. ET will keep closely monitoring the performance of Contractor, implementation of water quality mitigation measure and other contamination issue around the Project site, to ensure the EM&A requirement is properly implemented.
- 9.9. Weekly environmental site inspection was conducted during the reporting period. No major deficiency was observed during site inspection. The environmental performance of the project was therefore considered satisfactory.
- 9.10. According to the environmental site inspections performed in the reporting month, the Contractor is reminded to pay attention on maintaining proper materials storage, site hygiene and dust suppression mitigation measures.

- 9.11. No environmental complaint was received in the reporting period.
- 9.12. No notification of summons or prosecution was received since commencement of the Contract.
- 9.13. 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	2020												2021												2022												2023											
											N	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F	Mar	Apr	May	Jun	Jul	Aug														
<b>Project Programme Updated as at 31 January 2022 (Level 2)</b>																																																										
<b>Key Dates</b>																																																										
<b>Commencement and Completion Date</b>																																																										
KD0000100	Letter of Acceptance	0	15-Nov-19		0	15-Nov-19 A		100%	0		◆ Letter of Acceptance																																															
KD0000110	Commencement of the Works	0	30-Dec-19		0	30-Dec-19 A		100%	0		◆ Commencement of the Works																																															
KD0000120	Completion of the Works (1170 Days)	0		13-Mar-23	0		13-Mar-23	0%	0	0	◆ Completion of the Work																																															
KD0000130	Revised Completion of the Works (183 Days EOT Granted)	0			183	14-Mar-23	12-Sep-23	0%	0	0																																																
KD0000510	Planned Completion of the Works	0			0		30-Sep-23	0%		-18																																																
KD0000520	Target Completion of the Works (Best Endeavour)	0			0		02-Jul-23	0%		72	◆ Target																																															
<b>Executive Summaries</b>																																																										
<b>Preliminary Setup</b>																																																										
ES0001000	Mobilization and Preliminary Set Up	191	30-Dec-19	07-Jul-20	0	30-Dec-19 A	20-Jul-20 A	100%	-13		Mobilization and Preliminary Set Up																																															
<b>Civil Design AIP and DDA</b>																																																										
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		AIP Civil Design Submission and Approval																																															
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		DDA Civil Design Submission and Approval																																															
<b>M&amp;E Design AIP and DDA</b>																																																										
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		M&E AIP Process Mechanical Submission and Approval																																															
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		M&E DDA Process Mechanical Submission and Approval																																															
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		M&E AIP Instrumentation & Control Submission and Approval																																															
ES0002030	M&E DDA Instrumentation & Control Submission and Approval	514	22-Jul-20	17-Dec-21	97	13-Feb-21 A	08-May-22	65%	-142	172	M&E DDA Instrumentation & Control Submission and Approval, M&E																																															
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		M&E DDA Electrical and Renewable Energy Submission and Approval																																															
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		M&E AIP Building Services Submission and Approval																																															
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		M&E Design Basis & Civil Guidance Dwg																																															
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		M&E DDA Building Services Submission and Approval																																															
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		M&E AIP Site Electrical Submission and Approval																																															
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		M&E DDA Lift Submission and Approval																																															
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		M&E DDA Site Electrical Submission and Approval																																															
ES0002100	M&E DDA T&C Design Submission and Approval	155	29-Mar-22	30-Aug-22	35	01-Aug-21 A	07-Mar-22	75%	176	220	M&E DDA T&C Design Submission and Approval, M																																															
<b>Procurement of Major Plant &amp; Equipment Schedule</b>																																																										
ES0002320	M&E Procurement of Major Plant, Equipment, Material and Delivery	901	14-Mar-20	31-Aug-22	184	04-Feb-20 A	03-Aug-22	73%	28	83	M&E Procurement of Major Plant, Equipment, Mater																																															
ES2420	M&E Procurement of Mechanical Equipment - Intake Pumps	595	18-May-20	02-Jan-22	133	04-Feb-20 A	13-Jun-22	70%	-162	15	M&E Procurement of Mechanical Equipment - Intake Pumps, M																																															
ES2430	M&E Procurement of Mechanical Equipment - ActiDAFF Underdrain	333	30-Oct-20	27-Sep-21	32	02-Aug-20 A	04-Mar-22	90%	-158	79	M&E Procurement of Mechanical Equipment - ActiDAFF Underdrain, M&E Proc																																															
ES2440	M&E Procurement of Mechanical Equipment - ActiDAFF Media	298	15-Mar-21	06-Jan-22	139	23-Jul-20 A	19-Jun-22	50%	-164	126	M&E Procurement of Mechanical Equipment - ActiDAFF Media																																															
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		M&E Procurement of Mechanical Equipment - RO and ERD Rack																																															
ES2460	M&E Procurement of Mechanical Equipment - RO Membrane	755	29-Mar-20	22-Apr-22	225	12-Feb-20 A	13-Sep-22	62%	-144	161	M&E Procurement of Mechanical Equipment - RO																																															
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		M&E Procurement of Electrical Equipment - CLP Substation for LV Switchboard / Genset / Building Services																																															
<b>132kV Substation</b>																																																										
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		Excavation and Formation Works for 132kV Substation																																															
ES0001470	Construction of 132kV Substation	233	31-Mar-20	18-Nov-20	0	27-Apr-20 A	30-Dec-20 A	100%	-42		Construction of 132kV Substation																																															
ES0001480	Architectural Finishes for 132kV Substation	126	11-Sep-20	14-Jan-21	0	23-Nov-20 A	22-Mar-21 A	100%	-67		Architectural Finishes for 132kV Substation																																															
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		M&E Installation of 132kV Substation																																															
<b>Combine Shaft</b>																																																										
ES0001060	Construction of Combine Shaft	257	27-Mar-20	08-Dec-20	0	02-May-20 A	30-Jun-21 A	100%	-204		Construction of Combine Shaft																																															

■ 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	2020												2021												2022												2023												
											N	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F	Mar	Apr	May	Jun	Jul	Aug															
<b>Switch Room and Transformer Installation</b>																																																											
ES0002300	M&E Installation of HV/LV Switchroom and Transformer	242	16-Nov-21	15-Jul-22	187	14-May-22	16-Nov-22	0%	-124	110	M&E Installation of HV/LV Switchroom and Transformer																																																
<b>Miscellaneous</b>																																																											
ES0001630	Remaining Architectural Finishes for All Buildings	322	11-Jan-22	28-Nov-22	314	02-Jul-22	11-May-23	0%	-164	36	Remaining Architectural Finishes for All Buildings																																																
ES0001640	External Process and Non-Process Pipe	655	18-Dec-20	03-Oct-22	322	27-May-21 A	19-Dec-22	12%	-77	-9	External Process and Non-Process Pipe																																																
ES0001650	Drainage and Cable Duct	518	04-Jun-21	03-Nov-22	184	14-Mar-22	13-Sep-22	0%	51	23	Drainage and Cable Duct																																																
ES0001660	Slope Mitigation and Maintenance Access	684	23-Nov-20	07-Oct-22	490	28-Sep-21 A	05-Jun-23	2%	-241	81	Slope Mitigation and Maintenance Access																																																
ES0001670	Landscaping Works	469	28-Oct-21	08-Feb-23	233	13-Oct-22	02-Jun-23	0%	-114	18	Landscaping Works																																																
ES0002290	M&E PV Panels	215	23-Nov-21	25-Jun-22	134	17-May-22	27-Sep-22	0%	-94	31	M&E PV Panels																																																
ES0002310	M&E Chiller & Irrigation System Installation	298	27-Oct-21	20-Aug-22	199	19-Mar-22	03-Oct-22	0%	-44	3	M&E Chiller & Irrigation System Installation																																																
ES0002350	M&E Installation of Surge Vessel	70	24-Feb-22	04-May-22	285	14-Jun-22	25-Mar-23	0%	-325	18	M&E Installation of Surge Vessel																																																
ES0002360	M&E Installation of Flowmeter Pit	70	24-Feb-22	04-May-22	65	14-Jun-22	17-Aug-22	0%	-105	72	M&E Installation of Flowmeter Pit																																																
ES0002370	M&E Installation of Static Mixer Pit	42	27-Jan-22	09-Mar-22	37	27-Jun-22	02-Aug-22	0%	-146	87	M&E Installation of Static Mixer Pit																																																
ES0002380	M&E Installation of Drainage Pit	30	23-Nov-21	22-Dec-21	32	20-May-22	20-Jun-22	0%	-180	101	M&E Installation of Drainage Pit																																																
ES0002390	M&E Installation of Thickened Sludge Holding Tank	42	09-Dec-21	19-Jan-22	44	08-Apr-22	21-May-22	0%	-122	160	M&E Installation of Thickened Sludge Holding Tank																																																
<b>Statutory Submission &amp; Inspection</b>																																																											
ES0002330	Statutory Submission & Inspection	1148	11-Jan-20	03-Mar-23	511	03-Dec-19 A	26-Jun-23	57%	-115	1	Statutory Submission & Inspection																																																
<b>Testing and Commissioning</b>																																																											
ES0002400	M&E Precommissioning	229	12-Jun-22	26-Jan-23	237	21-Sep-22	15-May-23	0%	-109	-18	M&E Precommissioning																																																
ES0002410	M&E Commissioning	213	04-Jul-22	01-Feb-23	224	12-Oct-22	23-May-23	0%	-111	-18	M&E Commissioning																																																
ES0002420	M&E Performance Test	40	02-Feb-23	13-Mar-23	130	24-May-23	30-Sep-23	0%	-201	-18	M&E Performance Test																																																

## Appendix B

# Overview of Desalination Plant in Tseung Kwan O

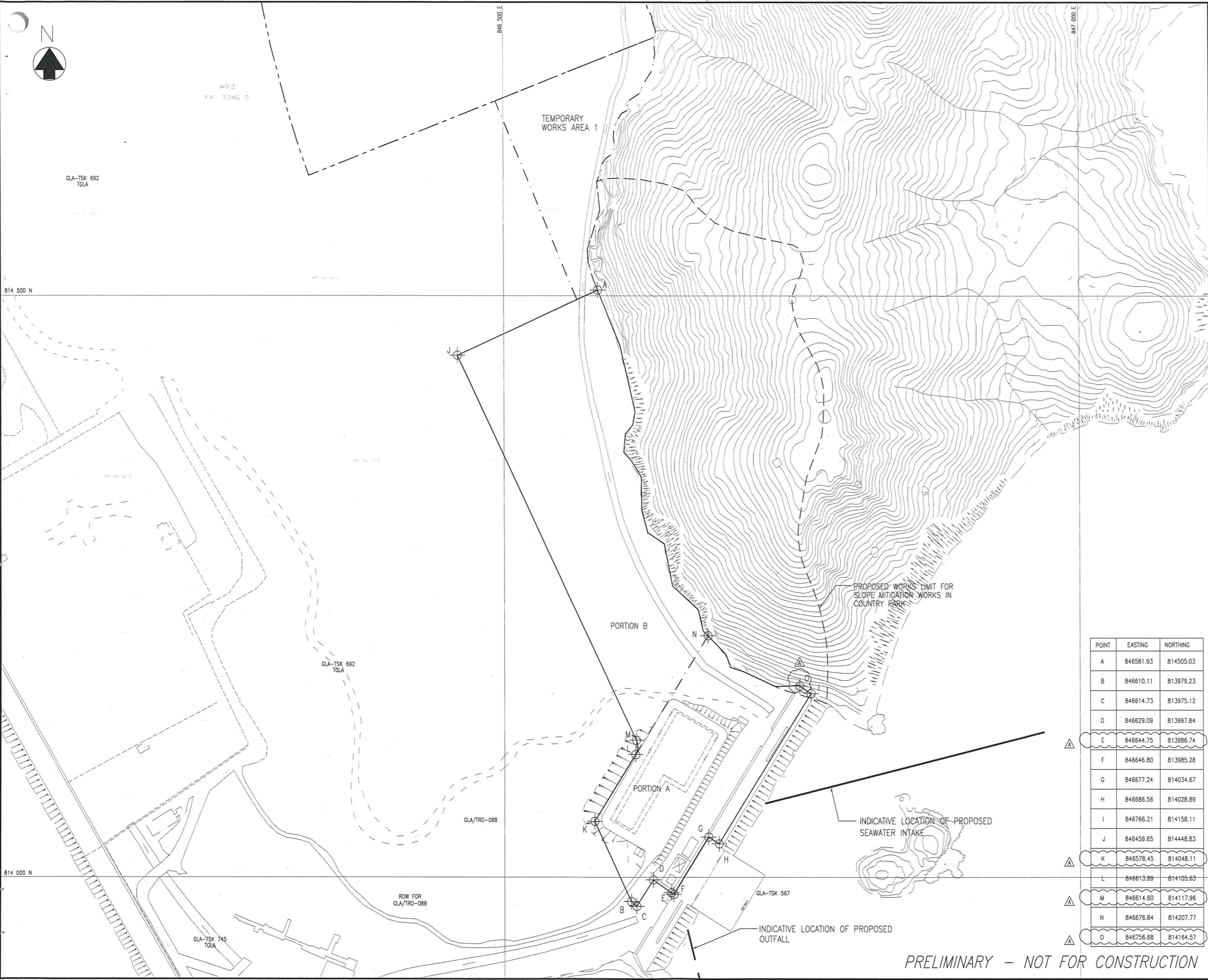


**LEGEND:**

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

**NOTE:**

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



B	10/03	UPDATE NOTES	YLC
A	07/18	UPDATE COORDINATES	YLC
Revision	Date	Description	Initial
	Designed	Checked	Drawn
Initial	YLC	CKH	SZ
Date	02/18	02/18	02/18

Approved  
*Christina Go*

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.	Revision
190495/K/TEND/10/0003	B

Scale A1 1 : 1500  
A3 1 : 3000



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

BUILDINGS IN FIRST STAGE

CODE	NAME OF BUILDING	TOTAL G.F.A. (m <sup>2</sup> )	SITE COVERAGE (m <sup>2</sup> )
B	COMBINE SHAFT	759,876	759,876
C	ACTIDAFF	1027,547	545,346
G	REVERSE OSMOSIS BUILDING AND ELECTRICAL BUILDING	451,455	536,935
H	CO2 TANKS AREA	-	-
J	PRODUCT WATER STORAGE TANK, PUMP STATION AND ELECTRICAL BUILDING	1974,610	2933,980
K	SLUDGE TREATMENT BUILDING, TANK AND PUMP ROOM	2531,044	1228,361
M	ADMINISTRATION BUILDING & ELECTRICAL BUILDING C	2450,713	1114,062
N	MAIN ELECTRICAL AND CENTRAL CHILLER PLANT BUILDING	-	499,893
R1	ELECTROCHLORINATION BUILDING & ELECTRICAL BUILDING A	657,992	825,776
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	21490,023

LEGEND / ABBREVIATION

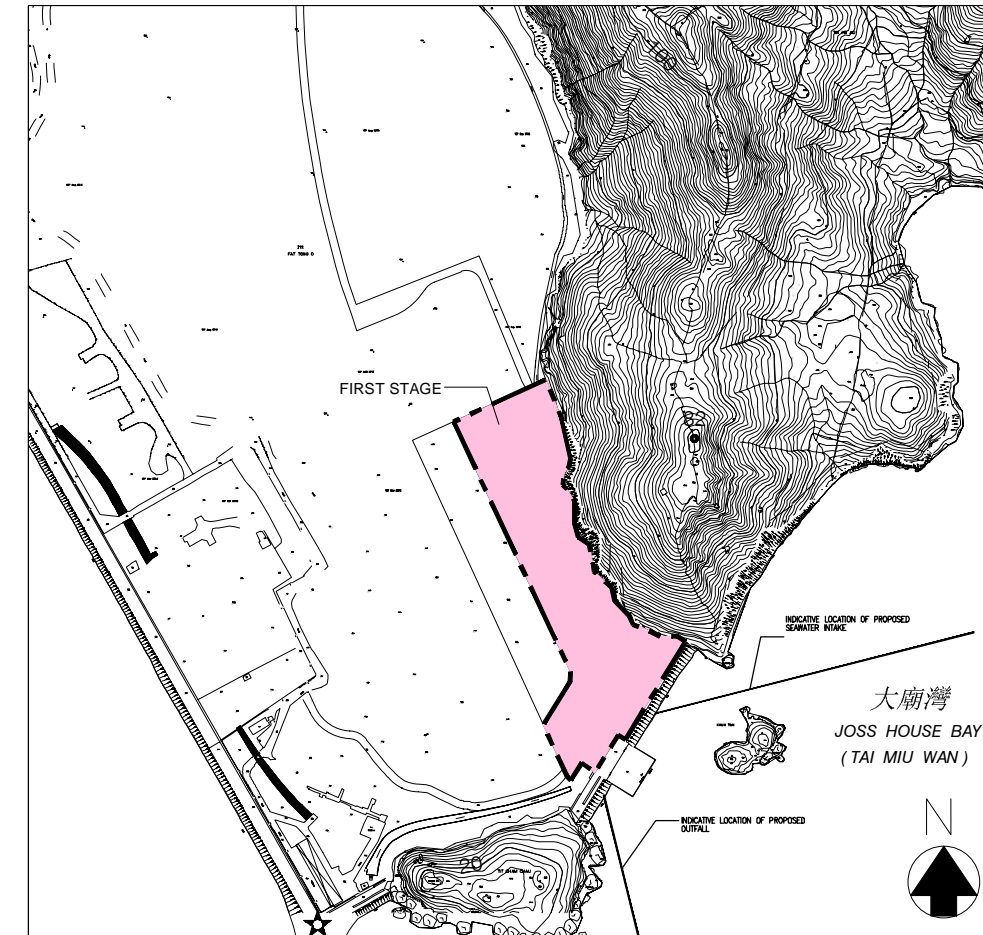
- HL WINDOW HIGH LEVEL WINDOW
- M.L. METAL LOUVRES
- C.L. CAT LADDER
- A.U.T. ACCESSIBLE UNISEX TOILET
- ⊕ PROPOSED FINISH FLOOR LEVEL IN METER ABOVE P.D.
- ⊖ STRUCTURAL FLOOR LEVEL IN METER ABOVE P.D.
- M.V.I.A.L. MECHANICAL VENTILATION & ARTIFICIAL LIGHTING
- F.E. 4.5kg CO<sub>2</sub> FIRE EXTINGUISHER
- H.R. HOSE REEL
- ⊙ FIREMANS LIFT
- ⊙ LIFT FOR THE BARRIER FREE ACCESS
- P.D. PIPE DUCT

PLOT RATIO & SITE COVERAGE CALCULATION:

SITE AREA OF THE FIRST STAGE	=	56108 m <sup>2</sup>
TOTAL G.F.A.	=	25092.141 m <sup>2</sup>
TOTAL SITE COVERAGE	=	21414.841 m <sup>2</sup>
PLOT RATIO	=	25092.141 / 56108
	=	0.447 < PERMITTED
SITE COVERAGE	=	21414.841 / 56108 x 100
	=	38.167%

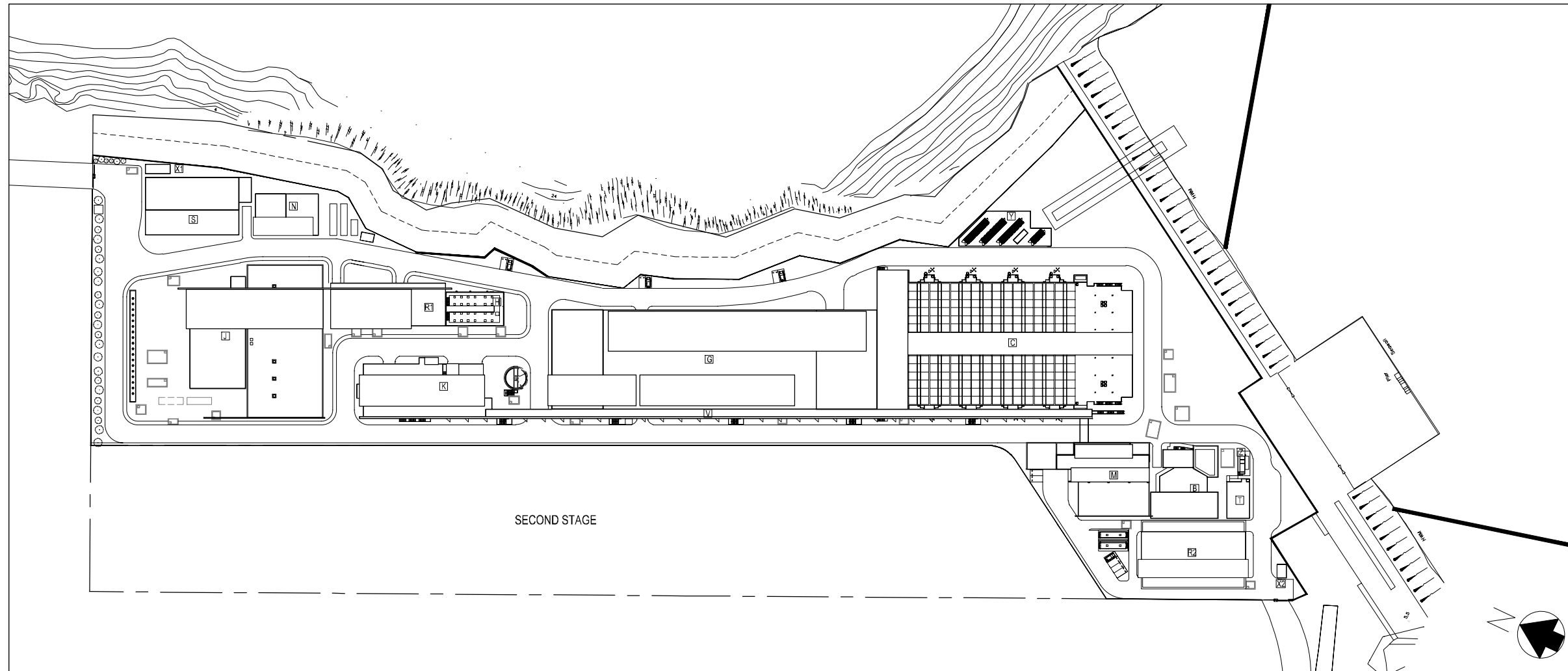
SITE LOCATION PLAN

1 : 5000



FIRST STAGE OF TSEUNG KWAN O DESALINATION PLANT

1 : 1000



0	TENDER SUBMISSION	CAD	JAN 19
Rev	Description	By	Date

Employer  
 水務署  
 Water Supplies Department

Employer's Consultant  
 BLACK & VEATCH

Tenderer  
 acciona JEC ASJEC  
 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.	TKO/AJC/W/A000/AR/001	Rev.	0
Drawn	Date	Checked	Approved
OKAL	JAN 19	S.C.	T.C.
Scale	N.T.S.	Status	-

## 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		
<b>Air Quality</b>								
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	

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



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	
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)		✓		N/A	
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	
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		
<b>Noise</b>								
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 Quiet 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 <sup>-2</sup> and have no or gappingss.	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	Noise control/	Contractor(s)	✓	✓		Implemented	A Practical Guide for

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		
	(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.	During construction						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 radius of 40m) during school hours in order to reduce impact to the educational institutions.	Noise control / During construction	Contractor(s)		✓		N/A	A Practical Guide for the Reduction of Noise from 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 <sup>-2</sup> 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 (ET)		✓		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)/ 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		
<b>Water Quality</b>								
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. Waste water 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	-



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	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	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	-
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 summarised 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	-

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 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)		✓	✓	N/A	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
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)/ 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		
<b>Waste Management</b>								
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 mobilisation/ 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 mobilisation/ 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, reminder issued	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)

Contract No. 13/WSD/17  
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				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 waste paper 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, reminder issued.	-
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)
S8.5	The management of dredged/ excavated sediment management requirement from <i>ETWB TC(W) No. 34/2002</i> 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	Contract mobilisation/ During construction	Contractor(s)		✓		Implemented	Cap 354N Waste Disposal (Charges for Disposal of

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		
	payment of disposal charges.							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 mobilisation/ 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)
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

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		
								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	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
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	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
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	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
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	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall have adequate ventilation.	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	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	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
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	Waste Disposal (Chemical Waste) (General) Regulation; Code of

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		
								Practice on the Packaging, Handling and Storage of Chemical Wastes
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, reminder issued.	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
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.
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 minimise 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 aluminium can, waste paper, 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

	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		
<b>Ecology</b>								
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 <i>Marsdenia lachnostoma</i> within the slope mitigation areas shall be retained <i>in-situ</i> , 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 <i>Marsdenia lachnostoma</i> 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 <i>Marsdenia lachnostoma</i> (or other flora species of conservation interest, if found) adjacent to the	Slope mitigation works area/ During construction	Contractor(s)		✓		Implemented	-



	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		
	proposed alignment of the flexible barriers will be prepared to protect the species.							
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	-
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)/ Environmental Team (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)		✓		N/A	-
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)		✓		N/A	-

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

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



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		
<b>Landscape &amp; Visual</b>								
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 (ie 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	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	N/A	

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



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		
	necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation. (MM6)							
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

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



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		
<b>Landfill Gas Hazard</b>								
S12.7	During all works, safety procedures should be implemented to minimise 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/ During 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 metre.	All area/ Detailed design/ During construction/ During 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/ During 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/ During 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/ During 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/ During 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/ During operation	Contractor(s)	✓	✓	✓	Implemented	

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



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	Proceed drilling with adequate care and precautions against the potential hazards which may be encountered.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	Implemented	
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/ During 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/ During 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/ During 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/ During 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/ During operation	Contractor(s)	✓	✓	✓	Implemented	

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

## Appendix D

# Impact Monitoring Schedule of the Reporting Month

**Contract No. 13/WSD/17 Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant  
EM&A Water Quality Monitoring Schedule**

Feb						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
					Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 13:00-17:00 Flood Tide: 05:38-13:00 <u>Monitoring Time:</u> Mid-ebb: 13:15-16:45 Mid-flood: 08:00-11:04*\$	
6	7	8	9	10	11	12
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 15:32-20:49 Flood Tide: 07:23-15:32 <u>Monitoring Time:</u> Mid-ebb: 15:47-19:00#&\$ Mid-flood: 09:42-13:12		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 17:00-23:59 Flood Tide: 08:00-17:00 <u>Monitoring Time:</u> Mid-ebb: 17:20-19:00#&\$ Mid-flood: 10:45-14:15		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 18:00-23:59 Flood Tide: 01:55-18:00 <u>Monitoring Time:</u> Mid-ebb: 18:17-19:00#&\$ Mid-flood: 08:12-11:42
13	14	15	16	17	18	19
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 10:00-13:19 Flood Tide: 13:19-20:20 <u>Monitoring Time:</u> Mid-ebb: 10:09-13:09 Mid-flood: 15:04-18:34		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 10:52-15:00 Flood Tide: 15:00-21:51 <u>Monitoring Time:</u> Mid-ebb: 11:11-14:41 Mid-flood: 15:20-18:50		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 11:42-16:29 Flood Tide: 05:12-11:42 <u>Monitoring Time:</u> Mid-ebb: 12:20-15:50 Mid-flood: 08:00-10:12*
20	21	22	23	24	25	26
		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 13:31-19:04 Flood Tide: 06:36-13:31 <u>Monitoring Time:</u> Mid-ebb: 14:32-18:02 Mid-flood: 08:18-11:48		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 15:07-22:00 Flood Tide: 08:00-15:07 <u>Monitoring Time:</u> Mid-ebb: 15:27-18:57& Mid-flood: 09:48-13:18		Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 <u>Tidal Period:</u> Ebb Tide: 17:12-23:59 Flood Tide: 00:36-17:12 <u>Monitoring Time:</u> Mid-ebb: 17:32-19:00#&\$ Mid-flood: 08:00-10:39&*
27	28					

Remarks:  
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.  
\$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is adopted.  
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.  
# - 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 for Noise Exceedance



### Event and Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>Carry out investigation to identify the source and cause of the complaint/ exceedance(s)</li> <li>Notify IEC, ER, and Contractor and report the results of investigation to the Contractor, ER and the IEC</li> <li>Discuss with the Contractor and IEC for remedial measures required</li> <li>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</li> </ol>	<ol style="list-style-type: none"> <li>Review the analyzed results submitted by the ET</li> <li>Review the proposed remedial measures by the Contractor and advise the ER accordingly</li> <li>Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of Notification of Exceedance in writing</li> <li>Require Contractor to propose remedial measures for the analysed noise problem</li> <li>Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>Submit noise mitigation proposals, if required, to the IEC and ER</li> <li>Implement noise mitigation proposals.</li> </ol>

Limit Level	<ol style="list-style-type: none"> <li>Notify IEC, ER, EPD and Contractor</li> <li>Identify the source(s) of impact by reviewing all the relevant monitoring data and the corresponding construction activities. Exceedances should also be confirmed by immediate verification in the field as far as practical.</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>inform IEC, ER and EPD the cause &amp; actions taken for the exceedances</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions</li> <li>Review Contractor's remedial actions to assure their effectiveness and advise the ER &amp; ET accordingly</li> <li>Supervise the implementation of the remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing</li> <li>Notify Contractor</li> <li>Require Contractor to propose remedial measures for the analyzed noise problem</li> <li>Ensure remedial measures are properly implemented</li> <li>If exceedance continuous, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is aborted</li> </ol>	<ol style="list-style-type: none"> <li>Take immediate action to avoid further exceedance</li> <li>Identify practicable measures to minimize the noise impact. Submit proposals for remedial actions to ER within three working days of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposal if problem still not under control</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>
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## Appendix F

# Noise Monitoring Equipment Calibration Certificate (BLANK)

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# Appendix G

## Event/Action Plan for Water Quality Exceedance

Event	Action			
	ET	IEC	SO	Contractor
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next working day of exceedance. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after Action Level being exceeded by two consecutive sampling days)

Event	Action			
	ET	IEC	SO	Contractor
Limit level being exceeded by one sampling day	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with Contractor, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)

Event	Action			
	ET	IEC	SO	Contractor
Limit level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods. Discuss mitigation measures with IEC, SO and Contractor. Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SO accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented measures. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and SO and propose mitigation measures to IEC and SO within 3 working days; Implement the agreed mitigation measures; As directed by the SOR, to slow down or to stop all or part of the marine work or construction activities. (The above actions should be taken within 1 working day after Limit Level being exceeded by two consecutive sampling days)

# 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 2022 (year)**

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	233.850	0.000	0.000	0.000	233.850	0.000	0.000	0.069	0.005	0.000	109.020
Feb	175.850	0.000	0.000	0.000	175.850	0.000	0.000	0.000	0.000	0.000	94.830
Mar											
Apr											
May											
Jun											
Sub-total	409.700	0.000	0.000	0.000	409.700	0.000	0.000	0.069	0.005	0.000	203.850
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	409.700	0.000	0.000	0.000	409.700	0.000	0.000	0.069	0.005	0.000	203.850

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

\* The data will be reviewed in next month.

# Appendix I

## Site Inspection Proforma



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

**WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST**

Inspection Date: 8/21/2022 Inspected by: ET: Jacky Leung SO: Raymond Kok WSD: N/A  
 Inspection Time: 14:30-17:00 Contractor: Brian Kam / A-Play IEC: Louis Kwok

<b>Weather</b>							
Condition	<input type="checkbox"/> Sunny	<input type="checkbox"/> Fine	<input checked="" type="checkbox"/> Overcast	<input type="checkbox"/> Drizzle	<input type="checkbox"/> Rain	<input type="checkbox"/> Storm	<input type="checkbox"/> Hazy
Temperature	<input type="checkbox"/> C		Humidity	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> Low	
Wind	<input checked="" type="checkbox"/> Calm	<input type="checkbox"/> Light	<input type="checkbox"/> Breeze	<input type="checkbox"/> Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
<b>0.00 General</b>						
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
0.02		Is ET Leader's log-book kept readily available for inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>1.00 Construction Dust</b>						
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Regular water spraying was conducted.
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Regular water spraying was conducted.
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No fume or smoke emitting plant or construction activity observed.
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Paved. + sprayed with water.
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(CMM LAB)

**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
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.17	S4.8.1	Is open burning prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>2.00</b>		<b>Construction Noise (Airborne)</b>				
2.01	S5.7	Are quiet plants adopted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>QUME labels</i>
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>regular maintenance</i>
2.03	S5.7	Are plants throttled down or turned off when not in use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>if no nearby NSR</i>
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>3.00</b>		<b>Water Quality</b>				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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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
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.07	S6.9	Is the drainage system properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.11	S6.9	Are exposed slope surface properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	manual seeding
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.15	S6.9	Is oil leakage or spillage prevented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (2)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (2)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (1)
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No visits to marine areas on reporting day
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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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
3.26	S6.9	Is closed grab dredger of 3 to 6 m <sup>3</sup> used for dredging at seawater intake?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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 <sup>3</sup> closed grab, 10-11 grab per hour for 6m <sup>3</sup> closed grab?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m <sup>3</sup> /day while the maximum allowed dredging rate at the submarine outfall is 3,500 m <sup>3</sup> /day?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NO marine dumping observed.
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.38	S6.9	Are all vessels have a clean ballast system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.41	S6.9	Is any soil waste disposed overboard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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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
4.00		<b>Waste Management</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.07	S8.5	Are all containers for chemical waste properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	S8.5	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (1)
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (1)
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.17	S8.5	Are C&D wastes sorted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.18	S8.5	Are C&D waste disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>reminder</i>
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>5.00</b>		<b>Landscape and Visual</b>				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>manual seeding</i>
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.00</b>		<b>Ecology</b>				
6.01	S9.7	Is site runoff properly treated to prevent any silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.02	S9.7	Are silt trap installed and well-maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.07	S9.7	Are 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		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?				
6.09	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.10	S9.7	Is a specification for fencing and demarcating individuals of Marsdenia lachnostoma (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.11	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.13	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.14	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.16	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.00</b>		<b>Landfill Gas Hazard</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
<b>8.00</b>		<b>Overall</b>				
8.01		Is the EM&A properly implemented in general?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

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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:

*Reminders*

- 1.) General housekeeping  
- remove food packaging and empty containers near the combined shaft*
- 2.) Working chemical containers shall be placed on a drip tray to prevent any accidental leakage.*

**Signatures:**

ET  
Representative

(Name: *LIU WING JACKY*)

Contractor's  
Representative

(Name: *Brian Kam*)

Supervising Officer's  
Representative

(Name: *Raymond Leoh*)

IEC's  
Representative

(Name: *Louis Kwan*)

WSD's  
Representative

*N/A*  
(Name: *N/A*)



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

**WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST**

Inspection Date: 17/04/2022 Inspected by: ET: Toby Leung SO: \_\_\_\_\_ WSD: N/A  
 Contractor: \_\_\_\_\_ IEC: \_\_\_\_\_  
 Inspection Time: ~~10:15~~ 11:30

<b>Weather</b>							
<b>Condition</b>	<input type="checkbox"/> Sunny	<input type="checkbox"/> Fine	<input type="checkbox"/> Overcast	<input checked="" type="checkbox"/> Drizzle	<input type="checkbox"/> Rain	<input type="checkbox"/> Storm	<input type="checkbox"/> Hazy
<b>Temperature</b>	<input type="text" value="16"/> C		<b>Humidity</b>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	
<b>Wind</b>	<input type="checkbox"/> Calm	<input type="checkbox"/> Light	<input checked="" type="checkbox"/> Breeze	<input type="checkbox"/> Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
<b>0.00 General</b>						
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
0.02		Is ET Leader's log-book kept readily available for inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>1.00 Construction Dust</b>						
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dusty materials were kept wet to limit dust emission
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No fume/smoke emitting plant or construction activity observed
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	paved
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dusty materials were kept wet to limit dust emission
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No dump trucks observed
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(N/A/M/L/0)

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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
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.17	S4.8.1	Is open burning prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>2.00</b>		<b>Construction Noise (Airborne)</b>				
2.01	S5.7	Are quiet plants adopted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	noise cab
2.02	S5.7	Are the PMEs operating on site well-maintained to minimize the generation of excessive noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	regular inspection
2.03	S5.7	Are plants throttled down or turned off when not in use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	no nearby NSR
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PMEs closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>3.00</b>		<b>Water Quality</b>				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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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
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.07	S6.9	Is the drainage system properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.11	S6.9	Are exposed slope surface properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(manual seeding)
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.15	S6.9	Is oil leakage or spillage prevented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (3)
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (3)
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (1)
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (3)
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	no marine dredging observed as per IV marine areas on the reporting day.
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
3.26	S6.9	Is closed grab dredger of 3 to 6 m <sup>3</sup> used for dredging at seawater intake?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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 <sup>3</sup> closed grab, 10-11 grab per hour for 6m <sup>3</sup> closed grab?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m <sup>3</sup> /day while the maximum allowed dredging rate at the submarine outfall is 3,500 m <sup>3</sup> /day?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.38	S6.9	Are all vessels have a clean ballast system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.41	S6.9	Is any soil waste disposed overboard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
<b>4.00</b>		<b>Waste Management</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (2)
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.07	S8.5	Are all containers for chemical waste properly labelled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reminder (1)
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	S8.5	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reminder (1)
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.17	S8.5	Are C&D wastes sorted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.18	S8.5	Are C&D waste disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>removed or C3</i>
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>5.00</b>		<b>Landscape and Visual</b>				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>manual seeding</i>
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.00</b>		<b>Ecology</b>				
6.01	S9.7	Is site runoff properly treated to prevent any silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.02	S9.7	Are silt trap installed and well-maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.07	S9.7	Are 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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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
		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?				
6.09	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.10	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.11	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.13	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.14	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.16	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.00</b>		<b>Landfill Gas Hazard</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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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
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
<b>8.00</b>		<b>Overall</b>				
8.01		Is the EM&A properly implemented in general?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

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# Acuity Sustainability Consulting Limited

Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon  
T: 2333-6823 | F: 2333-1316 | E: genera@acuityhk.com | www.acuityhk.com

## 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:

Observation(s)

Nil

Reminders(s)

- (1) General housekeeping was reminded. (Regular clearing of C&D wastes <sup>stored.</sup> on-site)
- (2) Chemical Containers should be removed from R.O. Building
- (3) The Main Contractor was reminded that all chemicals should be stored in driptrays and with labels added. (Steel Bar Area & R.O. Building)

### Signatures:

ET Representative

Contractor's Representative

Supervising Officer's Representative

IEC's Representative

WSD's Representative

(Name: )  
LEUNG JACKY

(Name: )

(Name: )

(Name: )

N/A

(Name: N/A )

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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: 23 Feb 2022      Inspected by: ET: Jacky Leung      SO: \_\_\_\_\_ WSD: \_\_\_\_\_  
 Contractor: \_\_\_\_\_      IEC: \_\_\_\_\_

Inspection Time: \_\_\_\_\_

<b>Weather</b>						
<b>Condition</b>	<input type="checkbox"/> Sunny	<input checked="" type="checkbox"/> Fine	<input type="checkbox"/> Overcast	<input type="checkbox"/> Drizzle	<input type="checkbox"/> Rain	<input type="checkbox"/> Storm <input type="checkbox"/> Hazy
<b>Temperature</b>	<input type="text" value="11"/> C		<b>Humidity</b>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> Low
<b>Wind</b>	<input type="checkbox"/> Calm	<input type="checkbox"/> Light	<input checked="" type="checkbox"/> Breeze	<input type="checkbox"/> Strong		

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
<b>0.00</b>		<b>General</b>				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
0.02		Is ET Leader's log-book kept readily available for inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>1.00</b>		<b>Construction Dust</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dusty materials were kept wet to limit dust emission.
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Paved
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.12	S4.8.1	Does the operation of plants on site free from dark smoke emission?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRMM Label



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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
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.17	S4.8.1	Is open burning prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>2.00</b>		<b>Construction Noise (Airborne)</b>				
2.01	S5.7	Are quiet plants adopted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Noise label
2.02	S5.7	Are the PME's operating on site well-maintained to minimize the generation of excessive noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Regular inspection
2.03	S5.7	Are plants throttled down or turned off when not in use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PME's closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>3.00</b>		<b>Water Quality</b>				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



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

Item No.	FIA ref		N/A	Yes	No	Photo/Remarks
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.07	S6.9	Is the drainage system properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.11	S6.9	Are exposed slope surface properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.15	S6.9	Is oil leakage or spillage prevented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Considered
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



**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
3.26	S6.9	Is closed grab dredger of 3 to 6 m <sup>3</sup> used for dredging at seawater intake?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 <sup>3</sup> closed grab, 10-11 grab per hour for 6m <sup>3</sup> closed grab?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m <sup>3</sup> /day while the maximum allowed dredging rate at the submarine outfall is 3,500 m <sup>3</sup> /day?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.38	S6.9	Are all vessels have a clean ballast system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.41	S6.9	Is any soil waste disposed overboard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





**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
<b>4.00</b>		<b>Waste Management</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.07	S8.5	Are all containers for chemical waste properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	S8.5	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminded
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.17	S8.5	Are C&D wastes sorted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.18	S8.5	Are C&D waste disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>5.00</b>		<b>Landscape and Visual</b>				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.00</b>		<b>Ecology</b>				
6.01	S9.7	Is site runoff properly treated to prevent any silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.02	S9.7	Are silt trap installed and well-maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.07	S9.7	Are 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
		Country Park to assess the condition and identify the location of each individual of <i>Marsdenia lachnostoma</i> and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups or 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.10	S9.7	Is a specification for fencing and demarcating individuals of <i>Marsdenia lachnostoma</i> (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.11	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.13	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.14	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.16	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Landfill Gas Hazard</b>						
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
<b>8.00</b>		<b>Overall</b>				
8.01		Is the EM&A properly implemented in general?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____



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:

Observation:

N/A

Reminder:

- 1). General Housekeeping was reminded. (Regular clearing of C&D waste stored on site).
- 2). Contractor was reminded to remove the rubbish from the ~~At~~ <sup>st</sup> nullah.

Signatures:

ET Representative

(Name: )  
Jacky Leung

Contractor's Representative

(Name: )

Supervising Officer's Representative

(Name: Derek Lai )

IEC's Representative

(Name: )

WSD's Representative

(Name: )



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

**WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST**

Inspection Date: 28 Feb 2022 Inspected by: ET: Jacky Leung SO: Mr. Raymond Kok WSD: C. K. Yip  
 Contractor: Mr. Brian Kwan/His IEC: Mr. Louis Kwan  
 Inspection Time: 09:00 Tiffany Tang

Weather							
Condition	<input checked="" type="checkbox"/> Sunny	<input type="checkbox"/> Fine	<input type="checkbox"/> Overcast	<input type="checkbox"/> Drizzle	<input type="checkbox"/> Rain	<input type="checkbox"/> Storm	<input type="checkbox"/> Hazy
Temperature	<input type="checkbox"/> 18	C		Humidity	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> Low
Wind	<input type="checkbox"/> Calm	<input checked="" type="checkbox"/> Light	<input type="checkbox"/> Breeze	<input type="checkbox"/> Strong			

Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
0.00		<b>General</b>				
0.01		Is the current Environmental Permit displayed conspicuously at all vehicle site entrances/exits for public's information at any time?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
0.02		Is ET Leader's log-book kept readily available for inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.00		<b>Construction Dust</b>				
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	S4.8.1	Are screenings, enclosures, water spraying or vacuum cleaning devices provided to dusty construction works for dust suppression?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	S4.8.1	Are fumes or smoke emitting plants or construction activities shielded by a screen?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	S4.8.1	Are wheel-washing facilities with high-pressure water jets provided at all site exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	S4.8.1	Is wheel-washing provided to all vehicles leaving the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.06	S4.8.1	Are road section near the site exit free from dusty material?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>paved</u>
1.08	S4.8.1	Are water spraying provided immediately prior to any loading or transfer of dusty materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>No loading and transfer works</u>
1.09	S4.8.1	Are covers provided to all dump trucks carrying dusty materials when entering and leaving the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>No dump truck observed</u>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	S4.8.1	Is exposed earth properly treated within six months after the last construction activity on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.12	S4.8.1	Does the operation of plants on site free form dark smoke emission?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>NRMM Label</u>



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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
1.13	S4.8.1	Are vehicles travelling at speed not exceeding 15km/hr within the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	S4.8.1	Are de-bagging, batching and mixing processes of bagged cement carried out in sheltered areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	S4.8.1	Are hoarding of at least 2.4m high provided along the site boundary adjoining areas accessible by the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.17	S4.8.1	Is open burning prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>2.00</b>		<b>Construction Noise (Airborne)</b>				
2.01	S5.7	Are quiet plants adopted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	OPME label
2.02	S5.7	Are the PME's operating on site well-maintained to minimize the generation of excessive noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.03	S5.7	Are plants throttled down or turned off when not in use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.04	S5.7	Are the plants known to emit noise strongly in one direction oriented to face away from NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	S5.7	Are moveable barriers provided to screen NSRs from plant or noisy operations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	S5.7	Are silencers, mufflers and enclosures provided to plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	S5.7	Are the hoods, cover panels and inspection hatches of PME's closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.08	S5.7	Are purposely-built site hoarding construction with appropriate materials provided along the site boundary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.09	S5.7	Are noisy operation properly scheduled to minimize exposure and cumulative impacts to nearby sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	S5.7	Are valid noise emission label(s) affixed to all hand-held breakers operating on site?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.11	S5.7	Are valid noise emission label(s) affixed to all air compressors operating on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	S5.7	Are all construction noise permit(s) applied for percussive piling work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	S5.7	Are construction noise permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	S5.7	Are valid construction noise permit(s) displayed at all vehicular exits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.00</b>		<b>Water Quality</b>				
3.01	S6.9	Is effluent discharge license obtained for wastewater discharge from site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.02	S6.9	Is effluent discharged according to the effluent discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.03	S6.9	Is wastewater discharge from site properly treated prior to discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



## Acuity Sustainability Consulting Limited

Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon  
 T: 2333-6823 | F: 2333-1316 | E: genera@acuityhk.com | www.acuityhk.com

### 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
3.04	S6.9	Are perimeter channels provided to intercept storm runoff from outside the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.06	S6.9	Is surface runoff diverted to sedimentation facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.07	S6.9	Is the drainage system properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.08	S6.9	Are construction works carefully programmed to minimize soil excavation works during rainy seasons?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	S6.9	Are exposed soil surface protected by paving as soon as possible to reduce the potential of soil erosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	S6.9	Are temporary access roads protected by crushed gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.11	S6.9	Are exposed slope surface properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	S6.9	Are open stockpiles of construction materials on site covered by tarpaulin or similar fabric during construction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.14	S6.9	Is runoff from wheel-washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.15	S6.9	Is oil leakage or spillage prevented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminder 1
3.16	S6.9	Are there any measures to prevent the release of oil and grease into the storm drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.17	S6.9	Are the oil interceptors/ grease traps properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.18	S6.9	Are debris and rubbish generated on site collected, handled and disposed of properly to avoid them entering the streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminder 2
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.21	S6.9	Are sufficient chemical toilets provided on site to handle sewage from construction work force?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.22	S6.9	Are sewage disposal and toilet maintenance of the portable chemical toilets provided by the licensed contractors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.23	S6.9	Is concrete washing water properly collected and treated prior to discharge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.24	S6.9	Is suitable type of silt curtains deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.25	S6.9	Is closed grab dredger used to reduce the potential leakage of sediments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





**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
3.26	S6.9	Is closed grab dredger of 3 to 6 m <sup>3</sup> used for dredging at seawater intake?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 <sup>3</sup> closed grab, 10-11 grab per hour for 6m <sup>3</sup> closed grab?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.29	S6.9	Is the maximum allowed dredging rate at the seawater intake limited to 750 m <sup>3</sup> /day while the maximum allowed dredging rate at the submarine outfall is 3,500 m <sup>3</sup> /day?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.31	S6.9	Are disposal vessels fitted with tight bottom seals in order to prevent leakage of material during transport?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.33	S6.9	Are excess materials cleaned from decks and exposed fittings before the vessel is moved from the dredging area after dredging?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.38	S6.9	Are all vessels have a clean ballast system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.39	S6.9	Are all vessels well maintained and inspected before use to limit any potential discharges to the marine environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.41	S6.9	Is any soil waste disposed overboard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



**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
<b>4.00</b>		<b>Waste Management</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.02	S8.5	Is a recording system implemented to record the amount of wastes generated, recycled and disposed of?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.03	S8.5	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.04	S8.5	Are chemical waste separated from other waste and collected by a licensed chemical waste collector?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	S8.5	Are trip tickets for chemical waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.06	S8.5	Is chemical waste reused and recycled on site as far as practicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	S8.5	Are all containers for chemical waste properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.08	S8.5	Is chemical waste storage area used solely for storage of chemical waste and properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminder 1
4.09	S8.5	Are incompatible chemical wastes stored in different areas?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminder 1
4.10	S8.5	Is the chemical waste storage area enclosed on at least 3 sides and adequately ventilated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	S8.5	Are a routine cleaning and maintenance programme implemented for drainage systems, sump pits, and oil interceptors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	S8.5	Are sufficient general refuse disposal/collection points provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	S8.5	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reminder 2
4.15	S8.5	Are appropriate measures adopted to minimize windblown litter and dust during transportation of waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.16	S8.5	Are individual collectors for aluminum cans, plastic bottles and packaging material and office paper provided to encourage waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.17	S8.5	Are C&D wastes sorted on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.18	S8.5	Are C&D waste disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.19	S8.5	Are unused C&D materials or chemicals recycled or reused to reduce the quantity of waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.20	S8.5	Are public fill and C&D waste reuse on site as far as practicable to avoid disposal off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
4.21	S8.5	Are the construction materials stored properly to minimize the potential for damage or contamination?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.22	S8.5	Is a dumping license obtained to deliver public fill to public filling areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>5.00</b>		<b>Landscape and Visual</b>				
5.01	S11.10 & 11.11	Are Is site hoarding provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	S11.10 & 11.11	Are vegetation disturbance minimized or soil protected to reduce potential soil erosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.03	S11.10 & 11.11	Is construction light oriented away from the sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	S11.10 & 11.11	Is grass hydroseeding provided to slopes as soon as the completion of works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.05	S11.10 & 11.11	Are damages to trees outside site boundary due construction works avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.06	S11.10 & 11.11	Is excavation works carried out manually instead of machinery operation within 2.5m vicinity of any preserved trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.07	S11.10 & 11.11	Are the retained and transplanted tree(s) properly protected and in good conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.08	S11.10 & 11.11	Are surgery works carried out for damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.00</b>		<b>Ecology</b>				
6.01	S9.7	Is site runoff properly treated to prevent any silly runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.02	S9.7	Are silt trap installed and well-maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.03	S9.7	Are stockpiles properly covered to avoid generating silty runoff?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.04	S9.7	Are construction works restricted to works area which are clearly defined?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.06	S9.7	Are pruning of tree canopies along the alignment of the flexible barriers limited to a minimum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.07	S9.7	Are 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.08	S9.7	At the detailed design stage prior to the commencement of the slope mitigation works, is vegetation survey carried out at the slope mitigation areas within the Clear Water Bay	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



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Item No.	EIA ref.		N/A	Yes	No	Photo/Remarks
		Country Park to assess the condition and identify the location of each individual of <i>Marsdenia lachnostoma</i> and other flora species of conservation interest that may be directly affected by the construction works?				
6.09	S9.7	Is temporary fencing installed to fence off the concerned species either in groups or 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.10	S9.7	Is a specification for fencing and demarcating individuals of <i>Marsdenia lachnostoma</i> (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers prepared to protect the species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.11	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.12	S9.7	Is the resident site supervisory staff closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.13	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.14	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.16	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.15	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.00		<b>Landfill Gas Hazard</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.02	S12.7	Are the gas detection equipment and precautions being used during trenching and excavation as well as creation of confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**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
7.06	S12.7	Is the monitoring of landfill gas being undertaken in all excavations, manholes, chambers and any confined spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.08	S12.7	Is the drilling proceeded with adequate care and precautions against the potential hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7.12	S12.7	Are the warning signs of the hazards of landfill gas and its possible presence on site posted in prominent places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8.00		<b>Overall</b>				
8.01		Is the EM&A properly implemented in general?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____



Acuity Sustainability Consulting Limited

Unit C, 11/F, Ford Glory Plaza, No. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon  
T: 2333-6823 | F: 2333-1316 | E: genera@acuityhk.com | www.acuityhk.com

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. Used chemical should be stored properly.
2. Contractor was reminded that General refuse should be disposed of properly and avoid placing them on ground

Signatures:

ET Representative

(Name: *[Signature]*)

Contractor's Representative

(Name: Brian Kam)

Supervising Officer's Representative

(Name: Raymond Kwan)

IEC's Representative

(Name: Louis Kwan)

WSD's Representative

(Name: )

# Appendix J

## Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 28 February 2022	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 – 28 February 2022	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 – 28 February 2022	0	0	N/A



## Appendix K

# Impact Monitoring Schedule of Next Reporting Month

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

Mar-22

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:56-13:31 Flood Tide: 16:55-20:20 Monitoring Time: Mid-ebb: 09:58-13:28 Mid-flood: 15:10-18:40	2	3 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:51-15:13 Flood Tide: 15:13-22:00 Monitoring Time: Mid-ebb: 11:17-14:47 Mid-flood: 15:33-19:00	4	5 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 11:46-16:41 Flood Tide: 05:00-11:46 Monitoring Time: Mid-ebb: 12:28-15:58 Mid-flood: 08:00-11:25
6	7	8 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:03-19:00 Flood Tide: 06:00-13:03 Monitoring Time: Mid-ebb: 14:16-17:46 Mid-flood: 08:00-11:16	9	10 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 14:00-22:00 Flood Tide: 06:00-14:00 Monitoring Time: Mid-ebb: 16:15-19:00 Mid-flood: 08:15-11:45	11	12 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 16:00-23:59 Flood Tide: 00:28-16:00 Monitoring Time: Mid-ebb: 16:23-19:00 Mid-flood: 11:43-15:13
13	14	15 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:30-12:30 Flood Tide: 12:30-19:07 Monitoring Time: Mid-ebb: 09:15-12:21 Mid-flood: 14:03-17:33	16	17 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:45-14:17 Flood Tide: 14:17-21:00 Monitoring Time: Mid-ebb: 10:16-13:46 Mid-flood: 15:53-19:00	18	19 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 10:25-16:00 Flood Tide: 04:00-10:25 Monitoring Time: Mid-ebb: 11:27-14:57 Mid-flood: 08:00-10:05
20	21	22 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 12:00-18:04 Flood Tide: 05:22-12:00 Monitoring Time: Mid-ebb: 13:17-16:47 Mid-flood: 08:10-11:40	23	24 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 13:00-20:25 Flood Tide: 06:00-13:00 Monitoring Time: Mid-ebb: 14:57-18:27 Mid-flood: 08:00-11:15	25	26 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 15:38-23:59 Flood Tide: 00:00-15:38 Monitoring Time: Mid-ebb: 16:03-19:00 Mid-flood: 08:00-11:30
27	28	29 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:00-12:36 Flood Tide: 14:24-21:08 Monitoring Time: Mid-ebb: 09:03-12:33 Mid-flood: 14:12-17:42	30	31 Impact Water Quality monitoring for CE, CF, WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37 Tidal Period: Ebb Tide: 09:42-14:24 Flood Tide: 14:24-21:08 Monitoring Time: Mid-ebb: 10:18-13:48 Mid-flood: 14:44-18:14		

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

# Appendix L

## Water Quality and Landfill Gas Monitoring Data

Location	Date	Weather	Sea Condition	Tidal	Water Level	Depth (m)	Time	DO (mg/L)	pH	Sal (ppt)	Temp (oC)	Turbidity (NTU)	Suspended Solids (mg/L)
CE	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	10:38	8.87	8.31	34.29	19.88	3.41	4
CE	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	10:38	8.75	8.26	34.29	19.74	3.36	4
CE	20220204	Cloudy	Moderate	Mid-Flood	Middle	10.75	10:37	8.75	8.3	34.28	19.8	3.63	6
CE	20220204	Cloudy	Moderate	Mid-Flood	Middle	10.75	10:37	8.76	8.27	34.19	19.9	3.22	5
CE	20220204	Cloudy	Moderate	Mid-Flood	Bottom	20.5	10:36	8.81	8.25	34.21	19.75	3.65	4
CE	20220204	Cloudy	Moderate	Mid-Flood	Bottom	20.5	10:36	8.83	8.23	34.14	19.88	3.42	4
CF	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	8.93	8.13	34.25	20.1	3.38	5
CF	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	8.95	8.12	34.14	20.25	3.9	5
CF	20220204	Cloudy	Moderate	Mid-Flood	Middle	10.7	8:01	8.93	8.14	34.2	20.13	3.86	5
CF	20220204	Cloudy	Moderate	Mid-Flood	Middle	10.7	8:01	9.04	8.13	34.13	20.12	3.6	6
CF	20220204	Cloudy	Moderate	Mid-Flood	Bottom	20.4	8:00	8.99	8.19	34.11	20.09	4.51	6
CF	20220204	Cloudy	Moderate	Mid-Flood	Bottom	20.4	8:00	8.98	8.11	34.26	20.25	4.31	4
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:25	8.45	8.22	33.56	20.13	2.71	7
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:25	8.49	8.17	33.62	20.24	2.53	5
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Middle	4.55	8:24	8.47	8.18	33.64	20.17	1.82	6
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Middle	4.55	8:24	8.57	8.22	33.52	20.14	1.86	6
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Bottom	8.1	8:23	8.58	8.2	33.77	20.24	2.13	5
WSR01	20220204	Cloudy	Moderate	Mid-Flood	Bottom	8.1	8:23	8.57	8.17	33.57	20.06	2.14	5
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	9.36	8.23	33.75	20.27	1.73	5
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	9.28	8.23	33.77	20.33	2.07	6
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Middle	4.6	8:42	9.2	8.3	33.76	20.38	1.94	2.5
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Middle	4.6	8:42	9.23	8.28	33.69	20.31	1.85	2.5
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Bottom	8.2	8:41	9.36	8.23	33.79	20.42	1.85	3
WSR02	20220204	Cloudy	Moderate	Mid-Flood	Bottom	8.2	8:41	9.19	8.23	33.58	20.34	2.05	4
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:57	9.29	8.36	33.83	19.67	1.9	8
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	8:57	9.13	8.33	33.75	19.68	2.23	10
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.95	8:56	9.29	8.31	33.61	19.59	1.83	5
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.95	8:56	9.14	8.35	33.62	19.59	1.61	6
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.9	8:55	9.18	8.34	33.73	19.54	1.35	7
WSR03	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.9	8:55	9.13	8.3	33.67	19.68	1.36	5

WSR04	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:11	8.39	8.35	33.77	19.95	2.02	6
WSR04	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:11	8.51	8.34	33.65	19.89	2.28	5
WSR04	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.75	9:10	8.43	8.35	33.72	19.88	1.92	5
WSR04	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.75	9:10	8.4	8.37	33.63	19.95	2.19	5
WSR04	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.5	9:09	8.46	8.37	33.66	20.07	1.88	7
WSR04	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.5	9:09	8.51	8.3	33.76	19.93	2.14	6
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	10:15	9.08	8.21	33.9	19.93	2.6	5
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	10:15	9	8.17	33.73	19.9	2.94	3
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Middle	8	10:14	9.07	8.24	33.8	19.99	2.65	5
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Middle	8	10:14	9.13	8.23	33.73	20.01	2.68	4
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Bottom	15	10:13	9.08	8.23	33.85	19.9	2.12	4
WSR16	20220204	Cloudy	Moderate	Mid-Flood	Bottom	15	10:13	9.12	8.23	33.74	19.99	2.29	4
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:26	9.19	8.25	33.51	20.25	2.68	4
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:26	9.2	8.23	33.47	20.3	2.25	4
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:25	9.26	8.24	33.59	20.3	2.75	6
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:25	9.18	8.18	33.43	20.42	2.44	5
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:24	9.18	8.24	33.58	20.38	2.23	5
WSR33	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:24	9.23	8.23	33.64	20.35	2.18	5
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:39	8.97	8.18	33.73	19.97	2.23	5
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:39	9.02	8.15	33.67	20.09	2.56	4
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.75	9:39	8.88	8.15	33.57	20.04	2.5	4
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Middle	3.75	9:39	8.9	8.22	33.6	20.06	2.72	3
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.5	9:38	8.92	8.15	33.74	20	1.93	6
WSR36	20220204	Cloudy	Moderate	Mid-Flood	Bottom	6.5	9:38	8.92	8.16	33.62	19.97	2.17	4
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:52	8.68	8.14	34.04	20.29	3.03	4
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Surface	1	9:52	8.7	8.14	34.08	20.2	2.56	6
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Middle	4	9:51	8.76	8.16	34.27	20.31	2.3	8
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Middle	4	9:51	8.71	8.15	34.1	20.25	2.14	6
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Bottom	7	9:50	8.84	8.19	34.26	20.2	2.37	3
WSR37	20220204	Cloudy	Moderate	Mid-Flood	Bottom	7	9:50	8.81	8.17	34.03	20.2	2.16	4
CE	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	13:17	8.26	8.31	33.83	20.34	3.7	4
CE	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	13:17	8.3	8.34	33.67	20.38	3.98	4
CE	20220204	Cloudy	Moderate	Mid-Ebb	Middle	10.7	13:16	8.2	8.38	33.67	20.44	3.91	7

CE	20220204	Cloudy	Moderate	Mid-Ebb	Middle	10.7	13:16	8.25	8.37	33.77	20.42	3.76	6
CE	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	13:15	8.23	8.31	33.81	20.40	3.52	9
CE	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	13:15	8.27	8.36	33.63	20.35	3.48	12
CF	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:51	8.56	8.34	34.13	20.17	2.45	10
CF	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:51	8.61	8.4	34.16	20.24	2.45	13
CF	20220204	Cloudy	Moderate	Mid-Ebb	Middle	9.65	15:50	8.53	8.39	34.19	20.19	2.75	6
CF	20220204	Cloudy	Moderate	Mid-Ebb	Middle	9.65	15:50	8.58	8.34	34.10	20.24	2.8	8
CF	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	18.3	15:49	8.62	8.34	34.15	20.15	2.88	7
CF	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	18.3	15:49	8.64	8.36	34.00	20.22	2.76	6
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:27	9.22	8.31	33.32	20.40	2.42	5
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:27	9.19	8.36	33.44	20.41	2.22	5
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.45	15:26	9.29	8.33	33.32	20.37	2.14	12
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.45	15:26	9.29	8.37	33.45	20.30	2.01	10
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	15:25	9.29	8.33	33.31	20.37	1.59	6
WSR01	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	15:25	9.28	8.31	33.39	20.35	1.56	5
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:08	8.51	8.28	33.56	19.92	1.96	7
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	15:08	8.58	8.25	33.58	19.84	2.1	6
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.7	15:07	8.55	8.31	33.63	19.85	2.18	3
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.7	15:07	8.58	8.29	33.73	19.89	1.96	4
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	15:06	8.57	8.31	33.55	19.85	2.12	5
WSR02	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	15:06	8.5	8.23	33.57	19.91	2.24	4
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:53	8.81	8.16	33.46	19.86	2.22	6
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:53	8.84	8.16	33.35	19.84	2.56	6
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.95	14:52	8.92	8.12	33.30	19.81	2.73	5
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.95	14:52	8.8	8.13	33.32	19.87	2.4	6
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	14:51	8.88	8.17	33.51	19.79	2.07	5
WSR03	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	14:51	8.9	8.15	33.38	19.79	1.82	6
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:41	8.67	8.31	34.36	20.03	3.23	5
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:41	8.72	8.35	34.33	20.04	3.15	6
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.55	14:40	8.7	8.33	34.34	20.05	2.24	6
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.55	14:40	8.74	8.32	34.32	20.04	2.65	6
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	14:39	8.72	8.33	34.28	19.98	2.55	5
WSR04	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	14:39	8.62	8.31	34.41	20.04	2.29	4

WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	13:38	9.22	8.43	34.16	20.29	2.43	6
WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	13:38	9.18	8.43	34.13	20.28	2.52	4
WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Middle	7.75	13:37	9.12	8.43	34.11	20.35	2.48	6
WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Middle	7.75	13:37	9.11	8.46	34.19	20.28	2.79	5
WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	14.5	13:36	9.08	8.37	34.15	20.30	1.51	4
WSR16	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	14.5	13:36	9.13	8.42	34.21	20.36	1.7	4
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:27	8.75	8.39	33.30	19.96	2.61	4
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:27	8.79	8.44	33.28	19.95	3.05	6
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.85	14:26	8.72	8.36	33.49	19.95	2.48	5
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.85	14:26	8.74	8.36	33.29	20.00	2.64	6
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	14:25	8.86	8.37	33.32	19.98	2.18	4
WSR33	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	14:25	8.81	8.36	33.36	19.99	2.48	6
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:14	8.96	8.25	33.53	20.16	2.08	5
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:14	8.98	8.26	33.55	20.21	1.86	5
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.25	14:14	8.93	8.21	33.59	20.17	1.64	6
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Middle	3.25	14:14	8.99	8.27	33.43	20.19	1.39	4
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	5.5	14:13	9.03	8.19	33.55	20.21	1.16	5
WSR36	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	5.5	14:13	9.01	8.26	33.43	20.17	1.23	5
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:00	8.71	8.34	34.27	20.17	2.43	4
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Surface	1	14:00	8.82	8.34	34.28	20.14	2.2	6
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.2	13:59	8.79	8.32	34.29	20.22	2.47	6
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Middle	4.2	13:59	8.69	8.31	34.22	20.16	2.32	5
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	13:58	8.84	8.33	34.25	20.21	2.3	4
WSR37	20220204	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	13:58	8.76	8.35	34.23	20.18	2.12	4
CE	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	12:19	9.43	8.27	34.01	19.37	3.06	2.5
CE	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	12:19	9.33	8.33	33.95	19.30	3.15	2.5
CE	20220208	Cloudy	Moderate	Mid-Flood	Middle	10.6	12:18	9.41	8.29	34.06	19.36	3.24	5
CE	20220208	Cloudy	Moderate	Mid-Flood	Middle	10.6	12:18	9.29	8.34	33.94	19.37	2.99	5
CE	20220208	Cloudy	Moderate	Mid-Flood	Bottom	20.2	12:17	9.34	8.35	34.03	19.37	3.43	3
CE	20220208	Cloudy	Moderate	Mid-Flood	Bottom	20.2	12:17	9.39	8.3	34.12	19.32	3.25	3
CF	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	9:44	9.39	8.25	33.68	19.11	3.84	3
CF	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	9:44	9.38	8.19	33.77	19.14	3.96	4
CF	20220208	Cloudy	Moderate	Mid-Flood	Middle	10.65	9:43	9.42	8.19	33.74	19.13	3.9	3

CF	20220208	Cloudy	Moderate	Mid-Flood	Middle	10.65	9:43	9.46	8.21	33.83	19.14	4.15	2.5
CF	20220208	Cloudy	Moderate	Mid-Flood	Bottom	20.3	9:42	9.39	8.19	33.74	19.17	4.69	3
CF	20220208	Cloudy	Moderate	Mid-Flood	Bottom	20.3	9:42	9.29	8.21	33.76	19.08	4.02	4
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:06	9.36	8.4	33.11	19.61	3.04	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:06	9.56	8.43	33.15	19.54	2.92	3
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.55	10:05	9.5	8.46	33.10	19.56	2.96	3
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.55	10:05	9.34	8.41	33.10	19.66	2.68	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Bottom	8.1	10:04	9.5	8.47	33.00	19.52	2.91	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Flood	Bottom	8.1	10:04	9.46	8.46	33.08	19.66	2.78	3
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:23	9.54	8.26	33.82	19.22	2.35	3
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:23	9.53	8.29	33.89	19.26	2.14	3
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.95	10:22	9.51	8.26	33.82	19.27	2.22	3
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.95	10:22	9.61	8.3	33.91	19.20	2.3	2.5
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Bottom	8.9	10:21	9.54	8.24	33.99	19.27	1.91	3
WSR02	20220208	Cloudy	Moderate	Mid-Flood	Bottom	8.9	10:21	9.41	8.32	33.83	19.20	2.16	4
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:37	8.81	8.42	33.53	19.34	3.26	2.5
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:37	8.98	8.42	33.49	19.30	2.83	2.5
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.9	10:36	8.88	8.42	33.49	19.33	2.56	3
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.9	10:36	8.87	8.44	33.48	19.38	3.01	4
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.8	10:35	9	8.39	33.49	19.44	2.42	4
WSR03	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.8	10:35	8.85	8.41	33.50	19.43	2.08	3
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:50	8.59	8.44	32.96	19.41	2.95	3
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	10:50	8.74	8.44	33.01	19.40	2.68	4
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.9	10:49	8.73	8.41	33.01	19.40	2.81	3
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.9	10:49	8.8	8.48	33.10	19.37	3.25	3
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.8	10:48	8.6	8.4	33.11	19.42	2.87	4
WSR04	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.8	10:48	8.71	8.45	32.98	19.33	3.06	3
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:56	8.71	8.35	34.04	19.32	3.04	3
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:56	8.68	8.4	33.93	19.18	3.08	3
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Middle	8.25	11:55	8.64	8.33	33.98	19.29	2.66	3
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Middle	8.25	11:55	8.61	8.33	33.94	19.26	2.73	3
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Bottom	15.5	11:54	8.66	8.32	33.88	19.32	2.72	4
WSR16	20220208	Cloudy	Moderate	Mid-Flood	Bottom	15.5	11:54	8.79	8.39	33.92	19.27	3.05	4



WSR33	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:04	8.94	8.32	33.22	19.23	3.22	4
WSR33	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:04	8.92	8.32	33.33	19.35	2.9	4
WSR33	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.5	11:03	8.97	8.3	33.37	19.24	3.07	4
WSR33	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.5	11:03	8.97	8.32	33.25	19.32	2.85	4
WSR33	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6	11:02	8.95	8.33	33.28	19.30	2.3	9
WSR33	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6	11:02	8.78	8.29	33.24	19.27	2.7	10
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:18	8.53	8.32	33.68	19.00	3.35	4
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:18	8.56	8.3	33.77	19.01	3.17	5
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.75	11:18	8.73	8.32	33.67	18.87	2.92	8
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Middle	3.75	11:18	8.66	8.3	33.75	19.01	2.65	10
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.5	11:17	8.51	8.29	33.79	18.95	2.81	5
WSR36	20220208	Cloudy	Moderate	Mid-Flood	Bottom	6.5	11:17	8.72	8.28	33.77	18.87	2.61	7
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:33	8.86	8.39	33.62	19.32	3.16	4
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Surface	1	11:33	8.75	8.37	33.65	19.33	3.54	5
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.2	11:32	8.86	8.37	33.50	19.26	3.14	4
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Middle	4.2	11:32	8.92	8.36	33.62	19.29	3.17	6
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Bottom	7.4	11:31	8.91	8.33	33.57	19.22	2.8	4
WSR37	20220208	Cloudy	Moderate	Mid-Flood	Bottom	7.4	11:31	8.83	8.38	33.50	19.29	2.89	4
CE	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	15:49	8.89	8.34	33.98	19.33	4.47	10
CE	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	15:49	9.04	8.41	33.98	19.44	4.85	10
CE	20220208	Cloudy	Moderate	Mid-Ebb	Middle	10.5	15:48	9.02	8.35	33.87	19.46	4.86	3
CE	20220208	Cloudy	Moderate	Mid-Ebb	Middle	10.5	15:48	8.9	8.41	34	19.38	4.43	3
CE	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	20	15:47	8.87	8.41	33.92	19.36	5.09	7
CE	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	20	15:47	9.05	8.34	33.91	19.4	5.34	8
CF	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	18:20	8.33	8.38	33.28	19.56	3.15	3
CF	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	18:20	8.33	8.33	33.36	19.47	3.05	4
CF	20220208	Cloudy	Moderate	Mid-Ebb	Middle	10.2	18:19	8.39	8.32	33.34	19.52	3.67	2.5
CF	20220208	Cloudy	Moderate	Mid-Ebb	Middle	10.2	18:19	8.43	8.37	33.32	19.51	3.42	2.5
CF	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	19.4	18:18	8.38	8.32	33.35	19.41	4.02	4
CF	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	19.4	18:18	8.26	8.38	33.37	19.46	4.27	5
WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:57	8.82	8.34	33.11	19.49	3.09	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:57	9.04	8.39	33.12	19.53	3.04	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Middle	4.7	17:56	8.86	8.4	33.13	19.51	2.9	2.5

WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Middle	4.7	17:56	8.84	8.33	33.2	19.51	2.75	3
WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	17:55	8.92	8.37	33.11	19.45	2.83	2.5
WSR01	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	17:55	8.82	8.35	33.16	19.49	2.56	2.5
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:46	9.14	8.35	32.82	19.35	2.59	5
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:46	9.1	8.37	32.93	19.4	2.63	6
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Middle	4.8	17:45	9.22	8.35	32.83	19.41	2.47	8
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Middle	4.8	17:45	9.05	8.33	32.93	19.45	2.44	9
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	17:44	9.11	8.31	32.9	19.37	2.39	7
WSR02	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	8.6	17:44	9.05	8.34	32.8	19.36	2.22	5
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:26	8.56	8.15	33.29	19.47	3.48	5
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:26	8.52	8.11	33.17	19.49	4.13	3
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.75	17:25	8.6	8.13	33.22	19.62	3.66	5
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.75	17:25	8.62	8.09	33.29	19.58	3.43	4
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	17:24	8.58	8.1	33.16	19.61	3.38	3
WSR03	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	17:24	8.42	8.09	33.15	19.49	3.5	4
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:14	8.62	8.41	33.37	19.38	3.62	8
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:14	8.57	8.41	33.28	19.35	3.59	7
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.55	17:13	8.54	8.38	33.27	19.44	2.89	7
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.55	17:13	8.65	8.4	33.26	19.41	3.4	8
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	17:12	8.56	8.38	33.33	19.38	2.95	6
WSR04	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	17:12	8.63	8.37	33.26	19.35	3.11	6
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:11	8.88	8.31	33.78	19.67	2.96	9
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:11	8.75	8.28	33.7	19.57	3.46	8
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Middle	7.85	16:10	8.82	8.28	33.73	19.66	2.81	6
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Middle	7.85	16:10	8.68	8.33	33.71	19.57	3.01	8
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	14.7	16:09	8.82	8.34	33.78	19.63	2.49	10
WSR16	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	14.7	16:09	8.67	8.32	33.73	19.67	2.49	12
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:00	8.56	8.25	33.73	19.5	4.11	17
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	17:00	8.64	8.26	33.74	19.52	4.1	18
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.55	16:59	8.69	8.29	33.77	19.6	3.93	21
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.55	16:59	8.5	8.25	33.74	19.49	3.47	19
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	16:58	8.69	8.28	33.74	19.52	3.72	5
WSR33	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.1	16:58	8.67	8.32	33.74	19.63	3.27	5

WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:46	8.47	8.2	33.14	19.44	3.76	14
WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:46	8.58	8.18	33.09	19.58	4.01	15
WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.5	16:46	8.42	8.19	33.05	19.54	3.4	7
WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.5	16:46	8.56	8.12	33.15	19.53	3.52	6
WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6	16:45	8.6	8.2	33.07	19.43	3.32	4
WSR36	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6	16:45	8.59	8.18	33.15	19.52	3.34	6
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:32	8.49	8.07	33.39	19.54	3.5	5
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Surface	1	16:32	8.54	8.1	33.43	19.56	3.06	5
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.95	16:31	8.38	8.07	33.51	19.58	2.85	10
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Middle	3.95	16:31	8.43	8.08	33.41	19.57	2.53	12
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	16:30	8.52	8.14	33.39	19.51	2.31	12
WSR37	20220208	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	16:30	8.41	8.12	33.48	19.46	2.74	12
CE	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	13:27	9.57	8.38	33.28	19.27	4.87	3
CE	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	13:27	9.63	8.41	33.24	19.23	4.96	3
CE	20220210	Cloudy	Moderate	Mid-Flood	Middle	11.4	13:26	9.45	8.4	33.15	19.14	4.89	3
CE	20220210	Cloudy	Moderate	Mid-Flood	Middle	11.4	13:26	9.47	8.39	33.29	19.27	4.82	4
CE	20220210	Cloudy	Moderate	Mid-Flood	Bottom	21.8	13:25	9.53	8.44	33.13	19.26	4.13	5
CE	20220210	Cloudy	Moderate	Mid-Flood	Bottom	21.8	13:25	9.52	8.37	33.13	19.12	4.37	4
CF	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	10:47	9.51	8.4	33.65	19.17	5.5	4
CF	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	10:47	9.51	8.38	33.79	19.03	5.32	4
CF	20220210	Cloudy	Moderate	Mid-Flood	Middle	9.65	10:46	9.46	8.38	33.66	19.04	5.72	4
CF	20220210	Cloudy	Moderate	Mid-Flood	Middle	9.65	10:46	9.5	8.34	33.65	19.11	5.1	5
CF	20220210	Cloudy	Moderate	Mid-Flood	Bottom	18.3	10:45	9.47	8.35	33.73	19.08	5.62	5
CF	20220210	Cloudy	Moderate	Mid-Flood	Bottom	18.3	10:45	9.49	8.35	33.62	19.15	5.81	4
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:10	9.57	8.32	34.24	19.15	3.74	18
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:10	9.66	8.3	34.20	19.16	3.49	18
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Middle	4.2	11:09	9.64	8.3	34.36	18.98	3.21	4
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Middle	4.2	11:09	9.53	8.28	34.25	19.11	3.05	5
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Bottom	7.4	11:08	9.61	8.27	34.29	19.11	3.29	5
WSR01	20220210	Cloudy	Moderate	Mid-Flood	Bottom	7.4	11:08	9.55	8.33	34.30	19.11	3.3	5
WSR02	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:29	8.95	8.35	33.25	19.40	2.79	6
WSR02	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:29	8.87	8.38	33.24	19.38	3.15	7
WSR02	20220210	Cloudy	Moderate	Mid-Flood	Middle	4.9	11:28	8.98	8.39	33.27	19.34	2.49	6

WSR02	20220210	Cloudy	Moderate	Mid-Flood	Middle	4.9	11:28	8.89	8.4	33.36	19.54	2.55	7
WSR02	20220210	Cloudy	Moderate	Mid-Flood	Bottom	8.8	11:27	8.86	8.33	33.33	19.46	2.06	6
WSR02	20220210	Cloudy	Moderate	Mid-Flood	Bottom	8.8	11:27	8.97	8.35	33.37	19.38	2.03	7
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:43	8.64	8.26	33.76	18.84	2.6	8
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:43	8.52	8.21	33.67	18.93	2.86	9
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Middle	4	11:42	8.67	8.25	33.77	18.86	3.02	7
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Middle	4	11:42	8.49	8.2	33.67	18.96	3.1	9
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Bottom	7	11:41	8.62	8.18	33.79	18.93	2.75	4
WSR03	20220210	Cloudy	Moderate	Mid-Flood	Bottom	7	11:41	8.61	8.19	33.85	18.78	2.48	4
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:57	8.96	8.24	33.53	18.95	2.58	4
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	11:57	9.04	8.27	33.56	18.99	2.93	5
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.9	11:56	8.98	8.25	33.50	18.92	2.87	4
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.9	11:56	9.05	8.25	33.54	18.84	2.45	4
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.8	11:55	8.92	8.24	33.49	18.86	2.52	5
WSR04	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.8	11:55	8.96	8.24	33.57	18.93	2.4	4
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	13:03	8.72	8.27	34.32	19.20	3.21	3
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	13:03	8.66	8.25	34.33	19.34	3.11	4
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Middle	8.5	13:02	8.75	8.22	34.37	19.28	3.1	4
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Middle	8.5	13:02	8.66	8.28	34.23	19.19	2.88	4
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Bottom	16	13:01	8.87	8.28	34.26	19.22	2.87	3
WSR16	20220210	Cloudy	Moderate	Mid-Flood	Bottom	16	13:01	8.8	8.25	34.40	19.33	2.41	2.5
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:12	8.96	8.39	34.07	18.99	3.06	3
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:12	8.92	8.4	34.09	18.90	3.22	4
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.55	12:11	8.88	8.41	34.15	19.11	3.07	2.5
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.55	12:11	8.96	8.41	34.21	18.92	3.31	3
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.1	12:10	8.87	8.39	34.16	19.01	3.33	10
WSR33	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.1	12:10	8.78	8.44	34.08	19.03	3.04	11
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:26	8.99	8.16	33.35	18.99	3.84	3
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:26	9.14	8.16	33.31	18.79	3.97	2.5
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.2	12:26	9.01	8.16	33.33	18.82	3.8	2.5
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.2	12:26	9.13	8.21	33.21	18.98	3.3	2.5
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Bottom	5.4	12:25	9.12	8.17	33.32	18.95	3.21	2.5
WSR36	20220210	Cloudy	Moderate	Mid-Flood	Bottom	5.4	12:25	9.01	8.18	33.37	18.92	2.85	2.5

WSR37	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:41	9.27	8.34	34.02	19.55	2.9	2.5
WSR37	20220210	Cloudy	Moderate	Mid-Flood	Surface	1	12:41	9.44	8.36	34.05	19.49	2.54	3
WSR37	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.85	12:40	9.34	8.4	34.09	19.51	2.79	3
WSR37	20220210	Cloudy	Moderate	Mid-Flood	Middle	3.85	12:40	9.28	8.4	33.99	19.49	2.44	3
WSR37	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.7	12:39	9.23	8.33	34.02	19.48	2.24	2.5
WSR37	20220210	Cloudy	Moderate	Mid-Flood	Bottom	6.7	12:39	9.29	8.35	34.03	19.54	1.88	2.5
CE	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	17:22	8.4	8.19	33.04	18.7	4.55	3
CE	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	17:22	8.49	8.24	33.1	18.61	4.85	2.5
CE	20220210	Cloudy	Moderate	Mid-Ebb	Middle	10.15	17:21	8.33	8.22	33.02	18.74	5.32	3
CE	20220210	Cloudy	Moderate	Mid-Ebb	Middle	10.15	17:21	8.38	8.21	33.06	18.6	5.51	3
CE	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	19.3	17:20	8.48	8.27	33.03	18.7	5.25	3
CE	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	19.3	17:20	8.49	8.26	33.05	18.73	5.13	3
CF	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:52	8.38	8.27	33.16	19.06	4.33	2.5
CF	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:52	8.42	8.21	33.2	19.07	4.92	4
CF	20220210	Cloudy	Moderate	Mid-Ebb	Middle	10.3	19:51	8.41	8.21	33.2	19.12	5.03	4
CF	20220210	Cloudy	Moderate	Mid-Ebb	Middle	10.3	19:51	8.35	8.21	33.11	19.05	4.48	2.5
CF	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	19.6	19:50	8.45	8.24	33.12	19.03	4.27	2.5
CF	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	19.6	19:50	8.46	8.24	33.24	19.06	4.24	3
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:30	8.43	8.18	33.13	19.22	4.17	4
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:30	8.47	8.2	33.14	19.24	3.83	2.5
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.75	19:29	8.35	8.18	33.17	19.13	4.12	4
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.75	19:29	8.35	8.19	33.07	19.17	3.8	3
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	8.5	19:28	8.48	8.26	33.06	19.15	3.43	4
WSR01	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	8.5	19:28	8.42	8.19	33.01	19.21	3.16	2.5
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:12	8.39	8.28	33.05	18.89	2.54	3
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	19:12	8.29	8.18	33.02	18.91	2.34	2.5
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.5	19:11	8.47	8.24	33.16	18.84	2.88	2.5
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.5	19:11	8.48	8.22	33.13	18.91	2.42	2.5
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	8	19:10	8.34	8.23	33.17	18.87	2.48	2.5
WSR02	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	8	19:10	8.49	8.2	33.1	18.78	2.45	2.5
WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:57	8.38	8.27	33.14	18.72	3.29	7
WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:57	8.43	8.22	33.18	18.73	3.56	7
WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.25	18:56	8.34	8.2	33.12	18.76	3.51	2.5

WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.25	18:56	8.32	8.22	33.16	18.64	3.5	3
WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	18:55	8.3	8.23	33.1	18.61	3.06	11
WSR03	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	18:55	8.47	8.19	33.15	18.69	3.17	11
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:44	8.41	8.18	33.04	19.05	3.41	2.5
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:44	8.37	8.22	33.12	19.11	3.58	4
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.75	18:43	8.47	8.2	33.2	19.18	2.87	2.5
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.75	18:43	8.43	8.22	33.2	19.01	3.21	2.5
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	18:42	8.43	8.2	33.18	19.16	2.8	4
WSR04	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	18:42	8.41	8.25	33.04	19.17	2.52	3
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	17:42	8.51	8.26	33.13	19.31	3.96	2.5
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	17:42	8.49	8.2	33.08	19.22	4	2.5
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Middle	7.8	17:41	8.35	8.24	33.24	19.21	3.5	2.5
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Middle	7.8	17:41	8.46	8.2	33.21	19.34	3.64	3
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	14.6	17:40	8.45	8.28	33.05	19.22	2.9	7
WSR16	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	14.6	17:40	8.51	8.25	33.18	19.33	3.46	7
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:30	8.47	8.22	33.23	18.54	3.2	3
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:30	8.31	8.24	33.02	18.55	3.36	4
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.65	18:29	8.34	8.25	33.11	18.51	3.36	7
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.65	18:29	8.47	8.27	33.2	18.43	3.21	7
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	18:28	8.36	8.21	33.17	18.48	3.31	5
WSR33	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	18:28	8.44	8.28	33.19	18.42	2.92	9
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:16	8.35	8.27	33.11	18.54	3.55	8
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:16	8.4	8.23	33.18	18.65	3.14	6
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.2	18:16	8.41	8.22	33.24	18.53	3.55	4
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Middle	3.2	18:16	8.48	8.27	33.06	18.61	3.12	5
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	5.4	18:15	8.39	8.18	33.21	18.52	3.08	2.5
WSR36	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	5.4	18:15	8.29	8.18	33.13	18.59	3.02	3
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:02	8.33	8.24	33.03	18.47	4.24	7
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Surface	1	18:02	8.41	8.25	33.23	18.58	4.31	7
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.2	18:01	8.31	8.22	33.13	18.51	4.08	4
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Middle	4.2	18:01	8.36	8.21	33.13	18.47	4.11	4
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	18:00	8.35	8.24	33.02	18.63	3.45	4
WSR37	20220210	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	18:00	8.32	8.26	33.22	18.52	3.5	6

CE	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:51	9.04	8.31	32.5	19.27	3.66	4
CE	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:51	9.14	8.35	32.53	19.29	3.18	3
CE	20220212	Cloudy	Moderate	Mid-Flood	Middle	11.6	10:50	9.47	8.33	32.56	19.21	2.95	4
CE	20220212	Cloudy	Moderate	Mid-Flood	Middle	11.6	10:50	9.37	8.33	32.56	19.23	3.27	4
CE	20220212	Cloudy	Moderate	Mid-Flood	Bottom	22.2	10:49	9.24	8.33	32.56	19.14	3.61	5
CE	20220212	Cloudy	Moderate	Mid-Flood	Bottom	22.2	10:49	9.11	8.33	32.51	19.14	3.52	7
CF	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:14	9.74	8.16	32.71	19.51	3.98	5
CF	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:14	9.69	8.15	32.76	19.53	4.17	7
CF	20220212	Cloudy	Moderate	Mid-Flood	Middle	10.55	8:13	9.6	8.16	32.68	19.51	3.84	9
CF	20220212	Cloudy	Moderate	Mid-Flood	Middle	10.55	8:13	9.43	8.18	32.78	19.39	4.03	6
CF	20220212	Cloudy	Moderate	Mid-Flood	Bottom	20.1	8:12	9.48	8.18	32.69	19.4	3.96	6
CF	20220212	Cloudy	Moderate	Mid-Flood	Bottom	20.1	8:12	9.54	8.13	32.77	19.38	4.12	9
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:36	8.8	8.18	33.23	19.23	3.03	6
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:36	8.96	8.18	33.23	19.18	3.38	8
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.7	8:35	8.73	8.18	33.19	19.27	2.58	6
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.7	8:35	9.11	8.18	33.2	19.25	2.51	7
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Bottom	8.4	8:34	8.92	8.15	33.24	19.33	2.76	9
WSR01	20220212	Cloudy	Moderate	Mid-Flood	Bottom	8.4	8:34	8.69	8.18	33.15	19.17	2.45	6
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:53	8.71	8.22	32.52	19.32	2.49	8
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	8:53	8.69	8.25	32.52	19.35	2.3	8
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.65	8:52	8.65	8.26	32.52	19.42	2.13	2.5
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.65	8:52	9.06	8.22	32.53	19.24	1.96	2.5
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Bottom	8.3	8:51	8.85	8.26	32.59	19.39	2.27	5
WSR02	20220212	Cloudy	Moderate	Mid-Flood	Bottom	8.3	8:51	8.86	8.24	32.49	19.32	2.15	7
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	9.74	8.4	32.81	19.67	2.99	2.5
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	9.54	8.35	32.77	19.63	2.7	4
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.2	9:05	9.39	8.36	32.77	19.69	2.82	3
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.2	9:05	9.47	8.37	32.74	19.58	2.98	5
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Bottom	7.4	9:04	9.34	8.38	32.74	19.55	2.99	3
WSR03	20220212	Cloudy	Moderate	Mid-Flood	Bottom	7.4	9:04	9.36	8.37	32.79	19.65	2.98	2.5
WSR04	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:19	8.67	8.19	32.98	19.51	3.41	2.5
WSR04	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:19	8.78	8.18	32.95	19.43	2.93	4
WSR04	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.5	9:18	8.59	8.15	32.93	19.39	3.09	3

WSR04	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.5	9:18	8.66	8.18	32.93	19.47	2.67	3
WSR04	20220212	Cloudy	Moderate	Mid-Flood	Bottom	6	9:17	8.56	8.19	32.92	19.4	2.48	6
WSR04	20220212	Cloudy	Moderate	Mid-Flood	Bottom	6	9:17	8.56	8.15	32.98	19.36	2.39	3
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:27	8.89	8.28	32.86	18.94	3.03	3
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:27	8.42	8.27	32.92	18.84	2.59	3
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Middle	8.35	10:26	8.86	8.3	32.86	18.8	2.26	2.5
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Middle	8.35	10:26	8.4	8.3	32.86	18.88	2.35	2.5
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Bottom	15.7	10:25	8.72	8.32	32.85	18.78	2.24	3
WSR16	20220212	Cloudy	Moderate	Mid-Flood	Bottom	15.7	10:25	8.76	8.28	32.88	18.84	2.06	3
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:35	8.77	8.2	32.53	19.62	2.94	5
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:35	8.95	8.18	32.63	19.49	2.98	6
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.5	9:34	8.61	8.21	32.55	19.65	2.91	4
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.5	9:34	9.02	8.2	32.58	19.58	3.2	4
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Bottom	6	9:33	9.03	8.18	32.53	19.62	3.12	5
WSR33	20220212	Cloudy	Moderate	Mid-Flood	Bottom	6	9:33	8.99	8.2	32.55	19.52	2.77	4
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:49	8.59	8.36	33.21	18.81	3.8	4
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	9:49	8.68	8.37	33.11	18.91	3.78	5
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.15	9:49	9.02	8.39	33.14	18.94	3.22	4
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Middle	3.15	9:49	9.01	8.38	33.19	18.9	3.44	3
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Bottom	5.3	9:48	8.71	8.35	33.2	18.89	3.35	4
WSR36	20220212	Cloudy	Moderate	Mid-Flood	Bottom	5.3	9:48	8.65	8.34	33.15	18.77	3.3	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:05	9.46	8.43	32.44	19.04	3.74	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Surface	1	10:05	9.57	8.39	32.5	18.93	3.24	3
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.4	10:04	9.55	8.4	32.45	18.96	3.34	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Middle	4.4	10:04	9.39	8.4	32.42	18.87	3.24	5
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Bottom	7.8	10:03	9.6	8.41	32.41	19	3.05	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Flood	Bottom	7.8	10:03	9.85	8.4	32.47	18.93	2.8	5
CE	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	18:19	9.17	8.25	32.96	19.07	4.32	10
CE	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	18:19	9.06	8.2	32.87	18.85	4.34	11
CE	20220212	Cloudy	Moderate	Mid-Ebb	Middle	10.45	18:18	9.19	8.25	32.93	18.89	4.47	11
CE	20220212	Cloudy	Moderate	Mid-Ebb	Middle	10.45	18:18	9.16	8.21	32.95	18.97	4.59	11
CE	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	19.9	18:17	9.36	8.23	32.87	18.89	4.55	9
CE	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	19.9	18:17	9.04	8.21	32.83	18.90	4.67	10



CF	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:46	8.93	8.4	33.10	19.20	3.23	5
CF	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:46	8.94	8.4	33.12	19.12	3.42	4
CF	20220212	Cloudy	Moderate	Mid-Ebb	Middle	10.75	20:45	9.14	8.41	33.05	19.30	3.91	2.5
CF	20220212	Cloudy	Moderate	Mid-Ebb	Middle	10.75	20:45	8.9	8.42	33.11	19.14	3.61	2.5
CF	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	20.5	20:44	9.27	8.4	33.04	19.26	3.66	2.5
CF	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	20.5	20:44	9.02	8.44	33.05	19.24	3.38	3
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:23	9.05	8.27	33.53	19.16	3.91	4
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:23	9.24	8.27	33.58	19.16	3.8	2.5
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.5	20:22	9.17	8.23	33.62	18.96	3.16	11
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.5	20:22	9.12	8.29	33.53	19.02	2.85	10
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	8	20:21	9	8.29	33.59	19.00	2.81	6
WSR01	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	8	20:21	9.14	8.23	33.47	19.13	2.72	4
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:06	8.78	8.45	33.37	18.92	2.39	10
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	20:06	8.97	8.43	33.26	19.01	2.67	10
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.85	20:05	9.03	8.43	33.19	18.93	2.67	18
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.85	20:05	8.77	8.44	33.29	19.09	2.48	20
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	20:04	9.06	8.47	33.21	19.00	2.2	23
WSR02	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	20:04	8.8	8.45	33.19	19.00	2.44	21
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:52	9.15	8.21	33.65	19.16	2.96	21
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:52	9.25	8.15	33.65	19.17	2.74	19
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.2	19:51	8.99	8.15	33.61	18.95	2.65	9
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.2	19:51	9.08	8.23	33.73	19.01	3.03	10
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	19:50	9.13	8.19	33.66	19.11	2.37	10
WSR03	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	19:50	9.33	8.19	33.70	19.12	2.57	5
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:41	8.7	8.18	33.64	19.20	3.97	4
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:41	9.04	8.23	33.69	19.26	3.86	5
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.5	19:40	8.86	8.15	33.72	19.15	3.55	5
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.5	19:40	8.85	8.23	33.65	19.33	3.08	5
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6	19:39	8.75	8.22	33.61	19.25	3.3	2.5
WSR04	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6	19:39	8.71	8.18	33.58	19.15	2.85	2.5
WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	18:40	9.08	8.22	33.63	18.84	3.48	3
WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	18:40	8.95	8.19	33.65	18.88	3.16	2.5
WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Middle	7.9	18:39	8.97	8.19	33.66	18.89	3.04	2.5

WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Middle	7.9	18:39	9.17	8.18	33.67	18.74	3.19	4
WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	14.8	18:38	9.05	8.17	33.64	18.72	2.72	9
WSR16	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	14.8	18:38	9.15	8.17	33.61	18.82	2.44	13
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:27	8.8	8.29	33.37	19.38	3.19	6
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:27	8.73	8.35	33.47	19.34	3.41	3
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.6	19:26	8.81	8.31	33.45	19.31	2.86	2.5
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.6	19:26	8.79	8.29	33.34	19.28	3.29	2.5
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	19:25	8.64	8.31	33.39	19.35	3.2	2.5
WSR33	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	19:25	8.48	8.32	33.37	19.25	2.84	2.5
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:12	9.66	8.18	33.66	19.52	3.45	8
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:12	9.3	8.15	33.83	19.33	3.69	9
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.65	19:12	9.57	8.16	33.70	19.50	3.42	10
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Middle	3.65	19:12	9.36	8.14	33.77	19.51	3.58	11
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	19:11	9.33	8.18	33.74	19.47	3.44	2.5
WSR36	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	19:11	9.43	8.21	33.77	19.47	3.39	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:00	9.44	8.3	32.67	18.71	3.1	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Surface	1	19:00	9.27	8.34	32.64	18.69	3.06	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.2	18:59	9.42	8.29	32.65	18.81	3.01	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Middle	4.2	18:59	9.48	8.34	32.64	18.65	2.9	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	18:58	9.38	8.33	32.73	18.66	3.03	2.5
WSR37	20220212	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	18:58	9.44	8.33	32.68	18.66	2.62	2.5
CE	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:46	8.7	8.2	31.56	19.4	3	2.5
CE	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:46	8.65	8.22	31.71	19.39	3.2	2.5
CE	20220215	Cloudy	Moderate	Mid-Flood	Middle	11.55	17:45	8.65	8.22	31.59	19.46	3.54	3
CE	20220215	Cloudy	Moderate	Mid-Flood	Middle	11.55	17:45	8.56	8.17	31.69	19.44	3.64	5
CE	20220215	Cloudy	Moderate	Mid-Flood	Bottom	22.1	17:44	8.52	8.26	31.66	19.4	3.96	2.5
CE	20220215	Cloudy	Moderate	Mid-Flood	Bottom	22.1	17:44	8.63	8.22	31.74	19.43	3.52	3
CF	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:06	8.81	8.22	32.15	19.35	4.08	4
CF	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:06	8.87	8.24	32.1	19.33	4.09	5
CF	20220215	Cloudy	Moderate	Mid-Flood	Middle	10.05	15:05	8.73	8.22	32.22	19.27	4.8	3
CF	20220215	Cloudy	Moderate	Mid-Flood	Middle	10.05	15:05	8.82	8.26	32.15	19.37	4.21	2.5
CF	20220215	Cloudy	Moderate	Mid-Flood	Bottom	19.1	15:04	8.74	8.24	32.07	19.28	3.99	2.5
CF	20220215	Cloudy	Moderate	Mid-Flood	Bottom	19.1	15:04	8.73	8.21	32.04	19.23	4.12	3

WSR01	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:30	9.08	8.34	32.47	19.22	3.51	5
WSR01	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:30	9.07	8.28	32.27	19.23	3.32	4
WSR01	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.75	15:29	9.17	8.32	32.31	19.25	2.85	2.5
WSR01	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.75	15:29	9.06	8.34	32.35	19.26	3.22	2.5
WSR01	20220215	Cloudy	Moderate	Mid-Flood	Bottom	8.5	15:28	9.17	8.28	32.46	19.16	2.76	2.5
WSR01	20220215	Cloudy	Moderate	Mid-Flood	Bottom	8.5	15:28	9.19	8.3	32.37	19.25	2.47	2.5
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:49	8.69	8.43	32.45	19.67	1.89	2.5
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	15:49	8.74	8.41	32.35	19.65	2.16	3
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.7	15:48	8.71	8.43	32.47	19.57	1.88	2.5
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.7	15:48	8.68	8.42	32.45	19.58	2.15	3
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Bottom	8.4	15:47	8.62	8.4	32.4	19.62	2.24	3
WSR02	20220215	Cloudy	Moderate	Mid-Flood	Bottom	8.4	15:47	8.68	8.41	32.29	19.66	2.1	3
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:03	9.01	8.33	32.47	19.53	3.16	4
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:03	9.07	8.27	32.45	19.55	3.02	4
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.75	16:02	8.96	8.3	32.4	19.49	2.25	5
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.75	16:02	8.98	8.32	32.48	19.51	2.56	6
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.5	16:01	9.07	8.26	32.58	19.48	1.96	4
WSR03	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.5	16:01	8.99	8.31	32.46	19.49	2.14	5
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:16	8.71	8.36	31.83	19.82	2.18	9
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:16	8.57	8.4	31.87	19.86	2.11	7
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.55	16:15	8.64	8.41	31.94	19.75	2.07	5
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.55	16:15	8.67	8.38	31.94	19.81	2.4	4
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.1	16:14	8.67	8.35	31.93	19.88	2.15	6
WSR04	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.1	16:14	8.66	8.42	31.78	19.74	2.44	7
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:23	9.2	8.15	32.14	19.14	3.01	4
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:23	9.23	8.15	32.23	19.15	3.11	3
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Middle	8	17:22	9.35	8.22	32.22	19.16	2.62	3
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Middle	8	17:22	9.23	8.21	32.17	19.15	2.6	3
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Bottom	15	17:21	9.34	8.15	32.24	19.18	2.42	3
WSR16	20220215	Cloudy	Moderate	Mid-Flood	Bottom	15	17:21	9.29	8.22	32.19	19.15	2.64	3
WSR33	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:30	9.35	8.13	32.11	19.45	2.27	7
WSR33	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:30	9.39	8.09	32.06	19.33	2.61	7
WSR33	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.7	16:29	9.34	8.16	32.25	19.36	2.15	3

WSR33	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.7	16:29	9.44	8.1	32.07	19.43	2.06	3
WSR33	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.4	16:28	9.48	8.14	32.19	19.35	2.46	11
WSR33	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.4	16:28	9.47	8.09	32.08	19.44	2.1	13
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:44	9.57	8.33	32.52	19.13	2.85	6
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	16:44	9.75	8.26	32.58	19.11	2.78	6
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.85	16:44	9.61	8.35	32.57	19.11	2.31	15
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Middle	3.85	16:44	9.67	8.3	32.57	19.1	2.16	13
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.7	16:43	9.64	8.3	32.49	18.99	2.05	5
WSR36	20220215	Cloudy	Moderate	Mid-Flood	Bottom	6.7	16:43	9.71	8.3	32.52	18.98	2.38	5
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:00	9.08	8.39	31.82	19.36	2.92	4
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Surface	1	17:00	9.23	8.38	31.86	19.4	3.48	4
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.15	16:59	9.2	8.31	31.85	19.47	3.1	2.5
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Middle	4.15	16:59	9.07	8.33	31.71	19.38	3.2	3
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Bottom	7.3	16:58	9.11	8.39	31.86	19.41	2.64	2.5
WSR37	20220215	Cloudy	Moderate	Mid-Flood	Bottom	7.3	16:58	9.17	8.36	31.67	19.38	2.33	2.5
CE	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:11	8.83	8.28	33.06	19.67	4.29	4
CE	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:11	8.9	8.29	33.05	19.54	4.11	3
CE	20220215	Cloudy	Moderate	Mid-Ebb	Middle	10.65	10:10	8.89	8.32	33.14	19.64	4.25	7
CE	20220215	Cloudy	Moderate	Mid-Ebb	Middle	10.65	10:10	8.86	8.26	33.07	19.63	4.17	6
CE	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	20.3	10:09	8.86	8.29	33.12	19.65	4.51	9
CE	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	20.3	10:09	9	8.32	33.04	19.51	4.33	12
CF	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:43	9.47	8.17	32.14	19.06	3.23	11
CF	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:43	9.41	8.17	32.20	19.19	3.79	14
CF	20220215	Cloudy	Moderate	Mid-Ebb	Middle	9.7	12:42	9.47	8.14	32.16	19.11	3.81	12
CF	20220215	Cloudy	Moderate	Mid-Ebb	Middle	9.7	12:42	9.48	8.14	32.22	19.07	3.92	10
CF	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	18.4	12:41	9.36	8.14	32.13	19.06	3.75	20
CF	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	18.4	12:41	9.31	8.2	32.11	19.12	3.63	24
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:20	8.88	8.27	32.01	19.08	3.25	3
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:20	8.86	8.27	32.03	18.97	3.11	5
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.2	12:19	9	8.25	32.09	18.97	3.2	7
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.2	12:19	8.92	8.22	32.14	18.99	3.3	8
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	12:18	8.91	8.28	32.08	18.95	2.89	7
WSR01	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	12:18	9.04	8.25	32.10	19.09	2.94	6

WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:01	9.36	8.23	32.89	18.81	2.38	5
WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	12:01	9.29	8.23	32.98	18.83	2.12	4
WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.5	12:00	9.26	8.26	32.88	18.84	2.02	4
WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.5	12:00	9.27	8.27	32.97	18.82	1.89	3
WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	8	11:59	9.38	8.29	32.91	18.80	2.24	5
WSR02	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	8	11:59	9.31	8.28	32.93	18.96	2.19	5
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:46	8.78	8.22	32.49	19.08	3.12	5
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:46	8.66	8.25	32.43	19.09	2.88	7
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.2	11:45	8.64	8.22	32.47	19.17	2.6	4
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.2	11:45	8.63	8.22	32.47	19.12	3.05	4
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	11:44	8.79	8.22	32.53	19.16	2.51	5
WSR03	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	11:44	8.74	8.25	32.53	19.07	2.9	4
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:34	9.43	8.37	32.25	19.37	3.95	15
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:34	9.42	8.34	32.27	19.34	3.4	15
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.85	11:33	9.4	8.4	32.12	19.40	3.11	4
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.85	11:33	9.51	8.34	32.23	19.39	3.06	5
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	11:32	9.46	8.4	32.19	19.32	2.78	19
WSR04	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	11:32	9.51	8.39	32.27	19.42	3.16	22
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:33	8.5	8.36	32.92	19.47	3.89	3
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:33	8.44	8.35	32.96	19.51	3.45	5
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Middle	7.55	10:32	8.44	8.39	32.86	19.40	3.52	5
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Middle	7.55	10:32	8.38	8.36	32.96	19.49	3.13	4
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	14.1	10:31	8.51	8.39	32.92	19.38	2.69	3
WSR16	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	14.1	10:31	8.38	8.35	32.95	19.48	3.18	4
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:20	9.4	8.42	32.93	19.59	3.89	5
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:20	9.27	8.39	32.93	19.52	4.05	4
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.85	11:19	9.35	8.38	32.85	19.46	3.43	4
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.85	11:19	9.4	8.41	32.99	19.59	3.92	3
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	11:18	9.38	8.43	32.92	19.54	3.75	4
WSR33	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	11:18	9.39	8.43	32.89	19.55	3.88	5
WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:05	8.49	8.38	33.07	19.58	3.12	3
WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	11:05	8.58	8.36	32.97	19.51	2.96	4
WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.75	11:05	8.55	8.4	32.98	19.50	3.13	7

WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Middle	3.75	11:05	8.5	8.38	32.97	19.60	2.77	8
WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	11:04	8.48	8.36	33.02	19.62	2.08	5
WSR36	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	11:04	8.63	8.34	33.03	19.49	2.11	4
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:53	8.61	8.22	32.35	18.91	2.6	4
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Surface	1	10:53	8.74	8.24	32.39	18.91	2.48	6
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.35	10:52	8.59	8.2	32.41	18.78	2.22	3
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Middle	4.35	10:52	8.75	8.24	32.42	18.77	2.32	4
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	10:51	8.61	8.26	32.43	18.82	2.28	4
WSR37	20220215	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	10:51	8.7	8.26	32.36	18.80	2.1	3
CE	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:57	9.52	8.27	33.37	19.08	3.14	7
CE	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:57	9.69	8.26	33.50	19.03	3.21	6
CE	20220217	Cloudy	Moderate	Mid-Flood	Middle	11.15	17:56	9.51	8.3	33.36	19.03	3.67	11
CE	20220217	Cloudy	Moderate	Mid-Flood	Middle	11.15	17:56	9.48	8.27	33.46	19.04	3.31	10
CE	20220217	Cloudy	Moderate	Mid-Flood	Bottom	21.3	17:55	9.58	8.31	33.33	19.08	3.63	6
CE	20220217	Cloudy	Moderate	Mid-Flood	Bottom	21.3	17:55	9.51	8.3	33.48	19.01	3.38	7
CF	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	15:22	9.49	8.21	33.95	18.81	3.8	5
CF	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	15:22	9.62	8.18	34.04	18.81	3.93	6
CF	20220217	Cloudy	Moderate	Mid-Flood	Middle	10.75	15:21	9.62	8.2	34.09	18.88	4.21	2.5
CF	20220217	Cloudy	Moderate	Mid-Flood	Middle	10.75	15:21	9.55	8.17	34.09	18.82	4.18	2.5
CF	20220217	Cloudy	Moderate	Mid-Flood	Bottom	20.5	15:20	9.48	8.16	34.14	18.85	3.97	6
CF	20220217	Cloudy	Moderate	Mid-Flood	Bottom	20.5	15:20	9.64	8.15	34.09	18.88	4.15	7
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	15:43	9.48	8.29	33.29	19.04	2.44	10
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	15:43	9.36	8.29	33.22	19.03	2.64	10
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.7	15:42	9.44	8.32	33.12	19.06	2.45	6
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.7	15:42	9.44	8.31	33.30	19.04	2.86	6
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Bottom	8.4	15:41	9.49	8.33	33.11	19.02	2.31	6
WSR01	20220217	Cloudy	Moderate	Mid-Flood	Bottom	8.4	15:41	9.39	8.28	33.21	19.06	2.02	6
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:02	9.03	8.39	33.93	18.43	2.39	7
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:02	9.05	8.37	33.96	18.49	2.16	5
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.9	16:01	8.89	8.4	33.87	18.50	2.22	20
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.9	16:01	8.99	8.4	33.88	18.44	2.02	20
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Bottom	8.8	16:00	9.03	8.44	33.95	18.46	2.09	19
WSR02	20220217	Cloudy	Moderate	Mid-Flood	Bottom	8.8	16:00	8.93	8.42	33.95	18.48	1.79	18

WSR03	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:16	8.94	8.26	34.41	19.72	2.71	16
WSR03	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:16	8.96	8.26	34.28	19.75	2.9	17
WSR03	20220217	Cloudy	Moderate	Mid-Flood	Middle	4	16:15	8.85	8.23	34.32	19.85	2.68	6
WSR03	20220217	Cloudy	Moderate	Mid-Flood	Middle	4	16:15	8.71	8.26	34.37	19.87	2.37	6
WSR03	20220217	Cloudy	Moderate	Mid-Flood	Bottom	7	16:14	8.78	8.28	34.32	18.89	2.85	18
WSR03	20220217	Cloudy	Moderate	Mid-Flood	Bottom	7	16:14	8.91	8.24	34.36	19.87	2.82	19
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:30	9.58	8.41	34.40	18.89	3.15	19
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:30	9.56	8.39	34.30	18.90	3.18	16
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.65	16:29	9.4	8.44	34.27	18.95	2.47	12
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.65	16:29	9.59	8.4	34.39	18.89	2.94	14
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Bottom	6.3	16:28	9.5	8.44	34.26	18.94	2.65	19
WSR04	20220217	Cloudy	Moderate	Mid-Flood	Bottom	6.3	16:28	9.44	8.4	34.28	18.94	2.52	20
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:33	8.88	8.17	34.21	18.93	3.39	19
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:33	8.78	8.16	34.14	18.90	3.29	19
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Middle	8.45	17:32	8.77	8.22	34.19	18.88	3.01	22
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Middle	8.45	17:32	8.91	8.21	34.03	18.91	3.03	23
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Bottom	15.9	17:31	8.88	8.2	34.01	18.90	2.72	5
WSR16	20220217	Cloudy	Moderate	Mid-Flood	Bottom	15.9	17:31	8.78	8.21	34.14	18.93	2.55	7
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:44	8.73	8.48	33.90	18.99	3.01	11
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:44	8.76	8.47	33.78	18.97	3.27	10
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.8	16:43	8.76	8.49	33.84	19.03	2.81	9
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.8	16:43	8.68	8.45	33.91	18.98	3.24	10
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Bottom	6.6	16:42	8.73	8.46	33.87	18.98	2.31	11
WSR33	20220217	Cloudy	Moderate	Mid-Flood	Bottom	6.6	16:42	8.61	8.45	33.86	18.99	2.6	11
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:56	9.07	8.41	34.38	19.05	2.22	6
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	16:56	8.9	8.43	34.33	19.07	2.13	7
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.2	16:56	9.01	8.39	34.25	19.07	2.52	5
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Middle	3.2	16:56	9.1	8.37	34.42	19.07	2.6	6
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Bottom	5.4	16:55	9.15	8.37	34.27	19.03	2.19	6
WSR36	20220217	Cloudy	Moderate	Mid-Flood	Bottom	5.4	16:55	8.98	8.4	34.48	19.07	2.08	6
WSR37	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:11	9.61	8.41	33.88	18.76	2.5	9
WSR37	20220217	Cloudy	Moderate	Mid-Flood	Surface	1	17:11	9.62	8.43	33.96	18.74	2.16	10
WSR37	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.45	17:10	9.56	8.43	34.04	18.80	2.27	11

WSR37	20220217	Cloudy	Moderate	Mid-Flood	Middle	4.45	17:10	9.57	8.43	33.90	18.79	2.2	13
WSR37	20220217	Cloudy	Moderate	Mid-Flood	Bottom	7.9	17:09	9.42	8.41	33.93	18.77	1.84	2.5
WSR37	20220217	Cloudy	Moderate	Mid-Flood	Bottom	7.9	17:09	9.42	8.39	34.02	18.79	2.06	2.5
CE	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:13	9.52	8.37	34.01	18.59	4.21	20
CE	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:13	9.6	8.37	33.98	18.65	3.88	20
CE	20220217	Cloudy	Moderate	Mid-Ebb	Middle	11.45	11:12	9.53	8.35	33.91	18.63	3.92	12
CE	20220217	Cloudy	Moderate	Mid-Ebb	Middle	11.45	11:12	9.65	8.35	33.98	18.67	3.87	14
CE	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	21.9	11:11	9.53	8.31	33.95	18.63	4.01	11
CE	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	21.9	11:11	9.51	8.36	33.94	18.6	4.14	13
CF	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:47	9.64	8.38	33.45	18.95	2.86	13
CF	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:47	9.68	8.42	33.52	18.95	3.16	10
CF	20220217	Cloudy	Moderate	Mid-Ebb	Middle	10	13:46	9.55	8.44	33.44	18.96	3.6	16
CF	20220217	Cloudy	Moderate	Mid-Ebb	Middle	10	13:46	9.55	8.38	33.47	18.95	3.3	17
CF	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	19	13:45	9.58	8.4	33.54	18.91	3.57	25
CF	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	19	13:45	9.67	8.41	33.5	18.88	3.55	27
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:24	9.04	8.32	34.19	18.86	2.57	15
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:24	9.01	8.3	34.15	18.89	2.78	13
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.35	13:23	9.08	8.33	34.17	18.88	2.08	18
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.35	13:23	8.99	8.35	34.17	18.83	2.13	19
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	13:22	9.14	8.3	34.11	18.81	2.29	19
WSR01	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.7	13:22	9.15	8.35	34.16	18.93	2.06	18
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:06	9.01	8.43	33.99	18.74	2.14	20
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	13:06	8.88	8.44	34.02	18.79	1.99	21
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.7	13:05	8.88	8.38	33.97	18.76	2.13	15
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.7	13:05	8.94	8.43	33.96	18.77	2.22	18
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	13:04	8.83	8.43	34	18.87	2.47	23
WSR02	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	13:04	8.93	8.4	33.98	18.83	2.3	22
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:50	8.95	8.49	33.24	18.66	2.8	20
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:50	9.02	8.46	33.19	18.68	3.03	18
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.25	12:49	9.02	8.5	33.24	18.7	2.52	19
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.25	12:49	9.04	8.51	33.24	18.63	2.21	16
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	12:48	9.02	8.53	33.22	18.62	2.19	19
WSR03	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	12:48	9.01	8.46	33.13	18.74	2.41	19



WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:37	9.45	8.35	33.88	18.89	3.12	19
WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:37	9.63	8.34	33.91	18.88	3.12	19
WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.4	12:36	9.46	8.38	33.88	18.71	2.56	20
WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.4	12:36	9.49	8.36	33.89	18.9	2.61	19
WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	5.8	12:35	9.43	8.33	33.94	18.71	2.1	19
WSR04	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	5.8	12:35	9.55	8.4	33.91	18.71	2.12	20
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:35	8.84	8.27	34.15	18.71	3.85	20
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:35	8.88	8.31	34.07	18.68	3.61	21
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Middle	8.2	11:34	8.92	8.26	34.07	18.71	3.21	21
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Middle	8.2	11:34	8.9	8.29	34.07	18.7	3.57	21
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	15.4	11:33	8.81	8.26	34.19	18.59	2.94	13
WSR16	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	15.4	11:33	8.91	8.28	34.14	18.66	2.91	14
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:23	9.23	8.41	34.23	18.77	2.76	10
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:23	9.1	8.4	34.2	18.76	3.16	10
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.6	12:22	9.19	8.4	34.24	18.65	2.72	5
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.6	12:22	9.25	8.37	34.23	18.69	2.36	7
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	12:21	9.24	8.35	34.21	18.64	2.55	17
WSR33	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	12:21	9.2	8.41	34.19	18.77	2.76	18
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:10	9.16	8.46	33.53	18.83	2.56	6
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	12:10	8.98	8.47	33.56	18.75	2.76	8
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.15	12:10	9.14	8.44	33.62	18.87	2.38	20
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Middle	3.15	12:10	9.1	8.46	33.6	18.76	2.27	25
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	5.3	12:09	9.04	8.44	33.57	18.78	1.91	10
WSR36	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	5.3	12:09	9.1	8.4	33.58	18.75	2.16	11
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:57	9.49	8.26	33.04	18.82	3.18	11
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Surface	1	11:57	9.51	8.26	33.09	18.92	3.05	13
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.45	11:56	9.49	8.26	33.06	18.83	2.92	6
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Middle	4.45	11:56	9.43	8.23	33.12	18.89	2.65	8
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	11:55	9.53	8.2	33.14	18.96	2.4	12
WSR37	20220217	Cloudy	Moderate	Mid-Ebb	Bottom	7.9	11:55	9.57	8.22	33.05	18.94	2.24	11
CE	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	10:30	8.52	8.2	32.83	17.03	3.38	5
CE	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	10:30	8.56	8.26	32.86	17.19	2.96	3
CE	20220219	Cloudy	Moderate	Mid-Flood	Middle	11.05	10:29	8.44	8.21	32.84	17.12	3.77	3

CE	20220219	Cloudy	Moderate	Mid-Flood	Middle	11.05	10:29	8.4	8.29	32.82	17.15	3.21	5
CE	20220219	Cloudy	Moderate	Mid-Flood	Bottom	21.1	10:28	8.57	8.26	32.77	17.11	3.66	5
CE	20220219	Cloudy	Moderate	Mid-Flood	Bottom	21.1	10:28	8.56	8.29	32.92	17.18	3.67	4
CF	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	8.85	8.18	33.45	17.07	3.48	5
CF	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	8.66	8.17	33.35	17.08	3.65	4
CF	20220219	Cloudy	Moderate	Mid-Flood	Middle	9.55	8:01	8.8	8.22	33.31	17.11	3.8	5
CF	20220219	Cloudy	Moderate	Mid-Flood	Middle	9.55	8:01	8.71	8.1	33.30	17.03	3.55	4
CF	20220219	Cloudy	Moderate	Mid-Flood	Bottom	18.1	8:00	8.67	8.15	33.45	16.96	4.3	5
CF	20220219	Cloudy	Moderate	Mid-Flood	Bottom	18.1	8:00	8.79	8.1	33.43	16.96	3.91	4
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:25	8.36	8.02	33.09	16.94	3.24	3
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:25	8.36	8.11	33.15	16.93	2.96	5
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.3	8:24	8.2	8.14	33.15	16.88	3.12	4
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.3	8:24	8.31	8.04	33.11	16.84	2.69	5
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.6	8:23	8.24	8.07	33.17	16.95	2.37	4
WSR01	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.6	8:23	8.22	8.04	33.13	16.96	2.19	4
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:42	8.75	8.03	33.06	16.93	2.17	5
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:42	8.81	8.01	33.14	16.88	2.27	5
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.5	8:41	8.85	8.03	33.19	16.83	2.24	7
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.5	8:41	8.86	8.08	33.14	16.82	2.16	9
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Bottom	8	8:40	8.79	8.08	33.12	16.87	2.11	8
WSR02	20220219	Cloudy	Moderate	Mid-Flood	Bottom	8	8:40	8.75	7.99	33.17	16.89	1.98	8
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:54	8.17	8.16	33.23	17.05	2.62	6
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	8:54	8.17	8.15	33.10	17.04	2.51	7
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.2	8:53	8.12	8.19	33.07	17.02	2.9	4
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.2	8:53	8.12	8.16	33.08	17.09	2.59	4
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.4	8:52	8.08	8.23	33.23	17.01	1.98	8
WSR03	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.4	8:52	8.14	8.22	33.24	16.93	2.13	6
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	8.7	8.22	32.48	17.10	2.75	7
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	8.87	8.23	32.57	16.98	3.2	6
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.4	9:05	8.85	8.27	32.44	16.98	2.57	12
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.4	9:05	8.74	8.2	32.46	17.09	2.89	11
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Bottom	5.8	9:04	8.69	8.24	32.47	17.01	2.48	12
WSR04	20220219	Cloudy	Moderate	Mid-Flood	Bottom	5.8	9:04	8.82	8.21	32.46	17.06	2.59	13

WSR16	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	10:08	9.12	8.06	33.36	16.95	2.63	4
WSR16	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	10:08	8.92	8.11	33.35	17.10	2.89	4
WSR16	20220219	Cloudy	Moderate	Mid-Flood	Middle	8.5	10:07	8.92	8.16	33.42	16.95	2.7	7
WSR16	20220219	Cloudy	Moderate	Mid-Flood	Middle	8.5	10:07	9.08	8.06	33.32	16.94	2.35	9
WSR16	20220219	Cloudy	Moderate	Mid-Flood	Bottom	16	10:06	8.93	8.14	33.46	17.05	2.68	9
WSR16	20220219	Cloudy	Moderate	Mid-Flood	Bottom	16	10:06	8.9	8.05	33.30	17.04	2.64	8
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:20	9.15	8.08	32.98	17.07	2.38	5
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:20	9	8.19	33.07	17.13	2.06	5
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.85	9:19	9.07	8.15	33.06	17.20	2.46	3
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.85	9:19	9.06	8.16	33.01	17.11	2.37	3
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:18	9.11	8.19	33.17	17.06	2.24	9
WSR33	20220219	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:18	9.01	8.15	33.17	17.02	2.36	12
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:33	8.2	8	33.32	17.00	2.43	6
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:33	8.12	8.02	33.36	17.12	2.2	6
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.85	9:33	8.16	8.01	33.45	17.11	2.39	15
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Middle	3.85	9:33	8.24	8.06	33.47	17.04	2.72	17
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:32	8.22	8.02	33.39	17.16	2.48	5
WSR36	20220219	Cloudy	Moderate	Mid-Flood	Bottom	6.7	9:32	8.14	8.04	33.38	17.03	2.15	6
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:47	8.2	8.12	32.98	17.05	3.11	11
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Surface	1	9:47	8.22	8.05	32.97	17.18	3.41	8
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.25	9:46	8.13	8.12	32.76	17.17	2.66	11
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Middle	4.25	9:46	8.24	8.06	32.85	17.05	2.69	13
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.5	9:45	8.08	8.09	32.88	17.18	2.18	11
WSR37	20220219	Cloudy	Moderate	Mid-Flood	Bottom	7.5	9:45	8.24	8.03	32.82	17.05	2.13	11
CE	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	12:22	8.64	8.06	32.89	17.32	3.73	4
CE	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	12:22	8.78	8.05	33.03	17.38	3.46	4
CE	20220219	Cloudy	Moderate	Mid-Ebb	Middle	11.85	12:21	8.66	8.06	32.95	17.34	3.96	6
CE	20220219	Cloudy	Moderate	Mid-Ebb	Middle	11.85	12:21	8.76	8.11	32.88	17.41	4.16	6
CE	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	22.7	12:20	8.65	8.03	32.94	17.28	4.68	3
CE	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	22.7	12:20	8.77	8.15	33	17.3	4.33	4
CF	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:54	8.83	8.19	33.2	17.32	3.59	6
CF	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:54	8.83	8.12	33.2	17.38	3.52	7
CF	20220219	Cloudy	Moderate	Mid-Ebb	Middle	10.05	14:53	8.8	8.11	33.08	17.37	3.6	4

CF	20220219	Cloudy	Moderate	Mid-Ebb	Middle	10.05	14:53	8.88	8.21	33.29	17.25	3.45	6
CF	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	14:52	8.83	8.18	33.15	17.22	3.72	5
CF	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	14:52	8.83	8.15	33.25	17.28	3.49	6
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:32	8.95	8.04	33.52	17.13	3.69	5
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:32	8.91	8.03	33.61	17.02	3.79	4
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.6	14:31	9.04	8.06	33.61	17.1	3.31	4
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.6	14:31	8.93	7.98	33.52	17.04	3.49	4
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	8.2	14:30	9	8.1	33.58	17.14	2.76	5
WSR01	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	8.2	14:30	9	8.06	33.66	17.21	2.91	4
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:15	8.97	8.16	33.71	17.21	2.31	4
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:15	8.98	8.19	33.63	17.02	2.16	5
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.55	14:14	8.97	8.21	33.62	17.04	1.89	3
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.55	14:14	9.03	8.16	33.78	17.13	2.08	5
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	8.1	14:13	9.05	8.25	33.68	17.14	2.16	11
WSR02	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	8.1	14:13	8.93	8.21	33.67	17.21	2.19	8
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:00	8.56	8.04	32.69	17.41	3.1	5
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	14:00	8.58	8.02	32.76	17.27	3.28	6
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.75	13:59	8.55	8.05	32.66	17.29	3.17	4
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.75	13:59	8.61	8	32.73	17.26	2.86	3
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	13:58	8.46	8.11	32.86	17.37	2.33	5
WSR03	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	13:58	8.65	8.02	32.8	17.41	2.56	5
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:47	9.24	8.2	32.95	17.36	3.1	8
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:47	9.17	8.2	33.12	17.35	2.8	8
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.6	13:46	9.13	8.15	33.12	17.19	2.83	8
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.6	13:46	9.23	8.14	32.93	17.3	3.13	9
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	13:45	9.09	8.16	33.08	17.26	2.9	15
WSR04	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	13:45	9.16	8.19	33.02	17.38	2.97	16
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	12:44	8.8	8.15	33.4	17.13	2.84	6
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	12:44	8.75	8.2	33.45	16.95	2.94	5
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Middle	8.35	12:43	8.79	8.19	33.5	17.16	3.13	10
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Middle	8.35	12:43	8.85	8.21	33.57	16.96	2.62	8
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	15.7	12:42	8.76	8.24	33.46	17.01	2.68	5
WSR16	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	15.7	12:42	8.64	8.15	33.5	17.05	2.66	5

WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:31	8.71	8.16	33.29	17	3.32	4
WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:31	8.81	8.21	33.41	17.19	3.52	4
WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.5	13:30	8.79	8.28	33.26	17.17	3.47	6
WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.5	13:30	8.65	8.26	33.3	17.02	2.99	7
WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6	13:29	8.7	8.23	33.25	17.02	2.7	5
WSR33	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	6	13:29	8.83	8.29	33.27	17.19	2.8	5
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:17	8.64	8.29	32.74	17.2	2.88	4
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:17	8.64	8.32	32.76	17.19	2.81	6
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.25	13:17	8.67	8.25	32.74	17.11	2.54	9
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Middle	3.25	13:17	8.66	8.2	32.74	17.2	2.23	10
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	5.5	13:16	8.69	8.24	32.79	17.13	2.58	7
WSR36	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	5.5	13:16	8.63	8.31	32.82	17.19	2.41	6
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:04	8.46	8.12	33.67	17.03	3.63	5
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Surface	1	13:04	8.31	8.05	33.65	17.06	3.63	6
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.2	13:03	8.37	8.04	33.58	17.18	3.61	5
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Middle	4.2	13:03	8.35	8.05	33.56	17.21	3.13	6
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	13:02	8.45	8.16	33.64	17.12	3.25	4
WSR37	20220219	Cloudy	Moderate	Mid-Ebb	Bottom	7.4	13:02	8.36	8.11	33.62	17.13	3.2	4
CE	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:51	9.63	8.05	31.28	16.95	3.29	3
CE	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:51	9.6	8.01	31.27	17.04	3.82	4
CE	20220222	Cloudy	Moderate	Mid-Flood	Middle	11	10:50	9.61	8	31.31	16.92	3.44	6
CE	20220222	Cloudy	Moderate	Mid-Flood	Middle	11	10:50	9.59	8.07	31.26	16.93	3.27	6
CE	20220222	Cloudy	Moderate	Mid-Flood	Bottom	21	10:49	9.65	8.06	31.33	16.92	3.66	7
CE	20220222	Cloudy	Moderate	Mid-Flood	Bottom	21	10:49	9.69	8.05	31.3	17.02	3.46	5
CF	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	8:20	9.72	8	31.4	16.59	4.36	5
CF	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	8:20	9.63	8.01	31.47	16.48	4.56	5
CF	20220222	Cloudy	Moderate	Mid-Flood	Middle	10.7	8:19	9.69	8.06	31.47	16.49	5.07	8
CF	20220222	Cloudy	Moderate	Mid-Flood	Middle	10.7	8:19	9.62	8.06	31.3	16.48	4.88	6
CF	20220222	Cloudy	Moderate	Mid-Flood	Bottom	20.4	8:18	9.57	8.03	31.48	16.52	5.43	19
CF	20220222	Cloudy	Moderate	Mid-Flood	Bottom	20.4	8:18	9.64	8.02	31.36	16.56	5.4	16
WSR01	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	8.78	8.25	32	16.53	3.4	8
WSR01	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	8.9	8.23	32.01	16.5	3.36	9
WSR01	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.6	8:42	8.72	8.2	32.14	16.53	3.48	11

WSR01	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.6	8:42	8.81	8.27	32.12	16.54	3.86	9
WSR01	20220222	Cloudy	Moderate	Mid-Flood	Bottom	8.2	8:41	8.91	8.24	32.12	16.55	3.43	14
WSR01	20220222	Cloudy	Moderate	Mid-Flood	Bottom	8.2	8:41	8.87	8.24	32.02	16.65	3.67	12
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:02	8.91	8.01	31.94	16.78	1.49	14
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:02	8.94	8.03	32.05	16.83	1.73	16
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.65	9:01	8.88	8.06	32.03	16.76	1.96	2.5
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.65	9:01	8.92	8.05	31.91	16.83	2.1	2.5
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Bottom	8.3	9:00	8.92	8.01	31.91	16.8	2.44	5
WSR02	20220222	Cloudy	Moderate	Mid-Flood	Bottom	8.3	9:00	8.98	8	31.94	16.81	2.12	4
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:14	9.37	8.33	31.32	16.65	2.77	5
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:14	9.36	8.33	31.29	16.62	3.18	5
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.1	9:13	9.35	8.32	31.27	16.71	2.91	5
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.1	9:13	9.39	8.3	31.35	16.63	3.3	7
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Bottom	7.2	9:12	9.33	8.28	31.25	16.75	2.65	3
WSR03	20220222	Cloudy	Moderate	Mid-Flood	Bottom	7.2	9:12	9.29	8.3	31.34	16.63	3.09	4
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:27	8.96	8.26	31.24	16.74	3.77	4
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:27	8.97	8.23	31.24	16.87	4.06	4
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:26	8.95	8.21	31.16	16.88	3.15	9
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:26	9.07	8.21	31.3	16.78	3.58	9
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:25	8.98	8.29	31.18	16.82	3.15	14
WSR04	20220222	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:25	8.98	8.21	31.23	16.72	2.79	12
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:28	9.07	8.1	32.02	16.64	3.18	4
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:28	9.09	8.12	31.88	16.7	3.33	5
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Middle	8.35	10:27	9.19	8.09	31.88	16.73	3.21	8
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Middle	8.35	10:27	9.06	8.12	31.98	16.62	3.39	8
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Bottom	15.7	10:26	9.13	8.12	31.87	16.65	2.63	7
WSR16	20220222	Cloudy	Moderate	Mid-Flood	Bottom	15.7	10:26	9.08	8.08	31.94	16.73	2.8	5
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:40	9.01	8.18	31.65	16.54	3.2	9
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:40	8.8	8.15	31.66	16.48	3.44	10
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:39	8.84	8.15	31.69	16.57	2.68	7
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.8	9:39	8.82	8.15	31.6	16.52	2.95	6
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:38	9.01	8.16	31.74	16.53	2.72	7
WSR33	20220222	Cloudy	Moderate	Mid-Flood	Bottom	6.6	9:38	8.86	8.16	31.64	16.47	2.6	9

WSR36	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:52	9.21	8.13	31.65	16.94	3.34	5
WSR36	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	9:52	9.2	8.09	31.59	16.89	2.95	4
WSR36	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.15	9:52	9.24	8.12	31.67	16.82	3.03	11
WSR36	20220222	Cloudy	Moderate	Mid-Flood	Middle	3.15	9:52	9.19	8.13	31.72	16.82	2.86	13
WSR36	20220222	Cloudy	Moderate	Mid-Flood	Bottom	5.3	9:51	9.25	8.11	31.71	16.85	2.33	8
WSR36	20220222	Cloudy	Moderate	Mid-Flood	Bottom	5.3	9:51	9.07	8.17	31.68	16.9	2.57	7
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:06	8.67	8.2	31.76	16.91	3.16	7
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Surface	1	10:06	8.6	8.21	31.87	16.8	3.2	7
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.4	10:05	8.52	8.24	31.87	16.91	3.27	6
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Middle	4.4	10:05	8.56	8.22	31.93	16.89	2.89	6
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Bottom	7.8	10:04	8.67	8.2	31.84	16.79	2.71	12
WSR37	20220222	Cloudy	Moderate	Mid-Flood	Bottom	7.8	10:04	8.67	8.23	31.9	16.9	3.01	14
CE	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	14:34	10.14	8.19	30.75	17.11	4.95	3
CE	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	14:34	9.98	8.12	30.67	17.14	4.82	5
CE	20220222	Cloudy	Moderate	Mid-Ebb	Middle	10.05	14:33	10.14	8.17	30.60	17.10	5.31	9
CE	20220222	Cloudy	Moderate	Mid-Ebb	Middle	10.05	14:33	10.09	8.19	30.75	17.19	5.02	8
CE	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	14:32	10.06	8.2	30.68	17.15	5.3	3
CE	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	14:32	10.21	8.17	30.62	17.24	5.55	3
CF	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	17:03	10.01	8.28	31.62	17.23	4.01	4
CF	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	17:03	9.91	8.22	31.73	17.17	3.66	3
CF	20220222	Cloudy	Moderate	Mid-Ebb	Middle	10.7	17:02	9.92	8.24	31.62	17.17	4.13	8
CF	20220222	Cloudy	Moderate	Mid-Ebb	Middle	10.7	17:02	10.08	8.25	31.66	17.14	4.22	8
CF	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	17:01	10.12	8.24	31.64	17.18	4.71	11
CF	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	17:01	9.98	8.19	31.65	17.24	4.42	13
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:40	9.11	8.28	30.93	17.10	3.59	6
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:40	9.18	8.31	30.76	17.13	3.57	7
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:39	9.17	8.31	30.91	17.01	3.78	6
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Middle	4.4	16:39	9.12	8.31	30.78	17.11	3.91	4
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	16:38	9.11	8.25	30.76	17.15	2.99	5
WSR01	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	7.8	16:38	9.08	8.31	30.92	17.09	3.16	4
WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:21	9.34	8.21	31.03	17.29	1.99	9
WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:21	9.42	8.18	31.04	17.28	1.87	7
WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Middle	4.5	16:20	9.24	8.19	30.94	17.27	2.01	15

WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Middle	4.5	16:20	9.37	8.22	31.08	17.19	1.89	13
WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	8	16:19	9.42	8.11	30.98	17.20	2.41	5
WSR02	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	8	16:19	9.22	8.12	31.11	17.31	2.37	6
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:06	9.77	8.26	31.24	16.79	3.84	15
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	16:06	9.91	8.18	31.27	16.87	3.39	16
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.9	16:05	9.73	8.18	31.21	16.89	3.83	17
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.9	16:05	9.8	8.2	31.30	16.79	3.88	18
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	16:04	9.82	8.27	31.20	16.82	3.13	10
WSR03	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	16:04	9.82	8.29	31.30	16.92	3.24	10
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:54	9.94	8.3	31.09	17.18	3.53	10
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:54	9.95	8.24	31.06	17.12	3.61	8
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.6	15:53	10.01	8.27	31.01	17.11	3.32	6
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.6	15:53	9.95	8.3	31.12	17.20	3.53	7
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	15:52	10	8.29	31.03	17.14	2.95	10
WSR04	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.2	15:52	9.9	8.28	31.08	17.19	3.23	12
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	14:56	9.62	8.11	30.82	17.12	3.68	7
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	14:56	9.72	8.11	30.81	17.26	3.76	8
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Middle	8.05	14:55	9.66	8.09	30.84	17.17	3.45	13
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Middle	8.05	14:55	9.69	8.12	30.85	17.22	3.46	10
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	15.1	14:54	9.61	8.08	30.88	17.24	3.56	6
WSR16	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	15.1	14:54	9.8	8.07	30.77	17.26	3.04	8
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:40	9.74	8.18	31.02	16.82	3.98	4
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:40	9.79	8.13	31.03	16.85	4.08	4
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.75	15:39	9.85	8.15	31.00	16.83	4.3	4
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.75	15:39	9.81	8.11	31.14	16.77	3.68	5
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	15:38	9.87	8.15	31.03	16.80	3.74	4
WSR33	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	15:38	9.8	8.21	31.03	16.90	3.31	6
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:27	9.99	8.21	31.28	16.69	3.49	8
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:27	10.03	8.12	31.21	16.69	3.58	7
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.85	15:27	10.14	8.11	31.17	16.67	3.64	10
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.85	15:27	10.07	8.19	31.15	16.62	3.84	12
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	15:26	10.12	8.11	31.21	16.72	3.59	4
WSR36	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.7	15:26	10.04	8.1	31.24	16.67	3.18	5



WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:16	9.81	8.12	31.62	16.72	3.47	7
WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Surface	1	15:16	9.72	8.12	31.71	16.69	3.88	8
WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.95	15:15	9.73	8.05	31.63	16.76	3.09	4
WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Middle	3.95	15:15	9.69	8.04	31.60	16.75	3.61	5
WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	15:14	9.73	8.1	31.70	16.78	3.35	8
WSR37	20220222	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	15:14	9.77	8.09	31.59	16.72	3.58	11
CE	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	12:30	9.57	8.32	32.88	17.13	3.86	7
CE	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	12:30	9.72	8.3	33.07	17.2	4.01	8
CE	20220224	Cloudy	Moderate	Mid-Flood	Middle	12.1	12:29	9.57	8.3	33.11	17.17	3.56	8
CE	20220224	Cloudy	Moderate	Mid-Flood	Middle	12.1	12:29	9.75	8.36	33.08	17.1	3.57	5
CE	20220224	Cloudy	Moderate	Mid-Flood	Bottom	23.2	12:28	9.54	8.32	32.95	17.03	3.67	4
CE	20220224	Cloudy	Moderate	Mid-Flood	Bottom	23.2	12:28	9.66	8.35	32.92	17.2	3.74	4
CF	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	9:50	9.32	8.26	33.11	17.27	4.86	6
CF	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	9:50	9.14	8.35	33.29	17.37	4.09	4
CF	20220224	Cloudy	Moderate	Mid-Flood	Middle	10.25	9:49	9.33	8.28	33.26	17.36	4.92	5
CF	20220224	Cloudy	Moderate	Mid-Flood	Middle	10.25	9:49	9.2	8.26	33.13	17.33	4.89	5
CF	20220224	Cloudy	Moderate	Mid-Flood	Bottom	19.5	9:48	9.25	8.32	33.15	17.19	5.46	4
CF	20220224	Cloudy	Moderate	Mid-Flood	Bottom	19.5	9:48	9.25	8.32	33.06	17.26	5.5	4
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:13	9.37	8.35	33.57	16.81	3.38	5
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:13	9.4	8.34	33.51	16.95	3.19	4
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.25	10:12	9.49	8.26	33.38	16.9	3.17	5
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.25	10:12	9.3	8.31	33.44	16.77	2.67	4
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Bottom	7.5	10:11	9.32	8.31	33.45	16.78	2.65	5
WSR01	20220224	Cloudy	Moderate	Mid-Flood	Bottom	7.5	10:11	9.29	8.29	33.4	16.97	2.83	5
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:33	9.77	8.3	32.78	17.35	2.35	6
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:33	9.66	8.27	32.75	17.37	2.57	4
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.5	10:32	9.65	8.31	32.82	17.38	1.91	3
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.5	10:32	9.61	8.27	32.85	17.28	2.29	4
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Bottom	8	10:31	9.76	8.27	32.86	17.36	1.97	4
WSR02	20220224	Cloudy	Moderate	Mid-Flood	Bottom	8	10:31	9.72	8.25	32.78	17.47	2.04	4
WSR03	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:47	9.73	8.19	32.98	17.25	3.06	5
WSR03	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	10:47	9.65	8.09	33	17.28	3.14	3
WSR03	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.8	10:46	9.75	8.2	32.78	17.19	2.76	5

WSR03	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.8	10:46	9.64	8.18	32.98	17.33	3.08	6
WSR03	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.6	10:45	9.67	8.16	32.78	17.31	2.61	5
WSR03	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.6	10:45	9.69	8.15	32.9	17.15	3.04	5
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:02	9.96	8.31	32.85	17.3	2.54	5
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:02	9.82	8.38	32.91	17.32	2.22	6
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.7	11:01	9.96	8.36	32.72	17.23	2.06	8
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.7	11:01	10.05	8.35	32.79	17.24	2.14	7
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.4	11:00	9.87	8.34	32.93	17.27	1.5	7
WSR04	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.4	11:00	9.94	8.33	32.72	17.21	1.53	8
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	12:07	9.43	8.35	33.71	17.49	2.74	7
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	12:07	9.38	8.28	33.63	17.52	2.36	6
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Middle	7.7	12:06	9.42	8.33	33.56	17.52	2.69	5
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Middle	7.7	12:06	9.36	8.3	33.82	17.51	2.49	6
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Bottom	14.4	12:05	9.34	8.3	33.57	17.61	1.72	5
WSR16	20220224	Cloudy	Moderate	Mid-Flood	Bottom	14.4	12:05	9.4	8.37	33.72	17.61	1.99	5
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:19	9.16	8.27	33.2	17.16	2.65	5
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:19	9.07	8.37	33.08	16.98	2.82	6
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.5	11:18	9.21	8.35	33	17.08	2.96	5
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.5	11:18	9.02	8.28	33.15	16.99	2.56	7
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6	11:17	9.22	8.29	33.01	17.17	2.37	5
WSR33	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6	11:17	9.12	8.31	33	17.02	2.84	7
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:32	9.83	8.4	33.07	17.21	2.51	6
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:32	9.92	8.3	33.15	17.28	2.61	6
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.65	11:32	9.94	8.36	33.11	17.24	2.33	8
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Middle	3.65	11:32	9.75	8.37	33.06	17.28	2.61	7
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.3	11:31	9.84	8.34	33.07	17.2	1.92	6
WSR36	20220224	Cloudy	Moderate	Mid-Flood	Bottom	6.3	11:31	9.81	8.3	33.01	17.21	2.16	6
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:45	9.55	8.29	32.86	17.53	3.54	5
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Surface	1	11:45	9.54	8.28	32.88	17.59	3.34	4
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.3	11:44	9.64	8.27	32.86	17.49	3.02	6
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Middle	4.3	11:44	9.68	8.33	33.07	17.6	3.06	6
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Bottom	7.6	11:43	9.72	8.22	33.1	17.58	2.57	4
WSR37	20220224	Cloudy	Moderate	Mid-Flood	Bottom	7.6	11:43	9.72	8.21	33	17.57	2.55	5

CE	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	15:29	9.77	8.26	32.75	17.39	4.22	8
CE	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	15:29	9.77	8.18	32.75	17.41	3.96	6
CE	20220224	Cloudy	Moderate	Mid-Ebb	Middle	11.3	15:28	9.8	8.2	32.67	17.32	3.96	6
CE	20220224	Cloudy	Moderate	Mid-Ebb	Middle	11.3	15:28	9.82	8.26	32.84	17.29	4	6
CE	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	21.6	15:27	9.71	8.23	32.61	17.38	4.61	6
CE	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	21.6	15:27	9.76	8.23	32.72	17.31	4.55	5
CF	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	18:02	9.7	8.27	33.44	17.82	3.15	6
CF	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	18:02	9.83	8.22	33.61	17.86	3.04	5
CF	20220224	Cloudy	Moderate	Mid-Ebb	Middle	10.05	18:01	9.89	8.28	33.62	17.84	3.43	6
CF	20220224	Cloudy	Moderate	Mid-Ebb	Middle	10.05	18:01	9.75	8.23	33.54	17.79	3.59	6
CF	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	18:00	9.81	8.22	33.62	17.74	3.87	5
CF	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	19.1	18:00	9.82	8.22	33.55	17.74	3.66	6
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:37	10.04	8.26	33.02	17.28	3.26	7
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:37	10.09	8.25	33.04	17.25	2.82	7
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.55	17:36	10.04	8.28	33.07	17.23	2.69	7
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.55	17:36	10.01	8.28	33.1	17.36	2.85	8
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	8.1	17:35	9.92	8.25	32.96	17.29	2.36	5
WSR01	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	8.1	17:35	10.08	8.22	32.98	17.34	2.72	8
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:18	10.09	8.2	32.89	17.52	2.13	7
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:18	10	8.13	32.64	17.56	1.82	6
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.85	17:17	10.19	8.18	32.82	17.51	2.24	4
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.85	17:17	10	8.13	32.63	17.61	2.13	5
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	17:16	10.18	8.16	32.65	17.55	2.09	4
WSR02	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	8.7	17:16	10	8.18	32.83	17.5	1.88	5
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:03	10.11	8.27	33.24	17.07	3.16	6
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	17:03	9.95	8.2	33.21	17.09	3.16	6
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.7	17:02	10.01	8.23	33.24	17.18	2.44	5
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.7	17:02	10.08	8.21	33.25	17.09	2.77	3
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.4	17:01	10	8.27	33.3	17.09	2.18	5
WSR03	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.4	17:01	10.03	8.25	33.24	17.03	1.93	7
WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:51	9.15	8.46	32.51	17.25	3.52	5
WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:51	9.26	8.4	32.57	17.23	3.46	3
WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.9	16:50	9.31	8.47	32.62	17.25	2.87	6

WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.9	16:50	9.18	8.44	32.45	17.21	2.69	6
WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	16:49	9.22	8.39	32.62	17.32	2.54	6
WSR04	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	16:49	9.25	8.44	32.45	17.33	2.46	9
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	15:50	9.15	8.4	33.5	17.34	3.47	6
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	15:50	9.09	8.35	33.52	17.29	3.55	6
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Middle	8.4	15:49	9.26	8.4	33.35	17.41	3.14	5
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Middle	8.4	15:49	9.14	8.36	33.54	17.42	3.42	6
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	15.8	15:48	9.16	8.33	33.35	17.43	3.15	5
WSR16	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	15.8	15:48	9.11	8.38	33.59	17.44	3.32	4
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:37	9.11	8.19	33.17	17.67	2.96	6
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:37	9.3	8.23	33.03	17.71	2.95	8
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.8	16:36	9.29	8.2	33.11	17.7	2.01	5
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.8	16:36	9.26	8.16	33.25	17.79	2.16	4
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.6	16:35	9.31	8.23	33.07	17.72	2.15	6
WSR33	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	6.6	16:35	9.23	8.19	33.02	17.71	2.3	5
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:23	9.09	8.35	32.75	17.1	2.74	4
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:23	9.02	8.37	32.9	17.21	3.03	4
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.15	16:23	8.88	8.32	32.72	17.26	3.02	6
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Middle	3.15	16:23	9	8.33	32.92	17.14	2.88	7
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	5.3	16:22	8.87	8.35	32.78	17.11	2.38	6
WSR36	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	5.3	16:22	9.01	8.36	32.69	17.18	2.42	8
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:10	9.43	8.37	33.34	17.68	2.61	6
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Surface	1	16:10	9.5	8.3	33.22	17.8	2.58	7
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.25	16:09	9.38	8.31	33.16	17.64	2.79	5
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Middle	4.25	16:09	9.5	8.31	33.34	17.66	2.61	5
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	16:08	9.43	8.29	33.16	17.75	2.37	5
WSR37	20220224	Cloudy	Moderate	Mid-Ebb	Bottom	7.5	16:08	9.45	8.29	33.33	17.72	2.21	6
CE	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	10:26	9.77	8.3	31.37	16.58	3.51	8
CE	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	10:26	10	8.26	31.41	16.52	4.11	9
CE	20220226	Cloudy	Moderate	Mid-Flood	Middle	10.5	10:25	9.91	8.25	31.39	16.43	3.59	7
CE	20220226	Cloudy	Moderate	Mid-Flood	Middle	10.5	10:25	9.95	8.29	31.45	16.57	3.5	5
CE	20220226	Cloudy	Moderate	Mid-Flood	Bottom	20	10:24	9.97	8.24	31.39	16.58	3.66	6
CE	20220226	Cloudy	Moderate	Mid-Flood	Bottom	20	10:24	9.82	8.25	31.45	16.69	4.09	6

CF	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	9.5	8.26	31.36	16.48	4.55	8
CF	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:02	9.58	8.32	31.34	16.38	4.67	8
CF	20220226	Cloudy	Moderate	Mid-Flood	Middle	10.35	8:01	9.74	8.27	31.37	16.55	4.68	6
CF	20220226	Cloudy	Moderate	Mid-Flood	Middle	10.35	8:01	9.74	8.27	31.41	16.49	4.98	7
CF	20220226	Cloudy	Moderate	Mid-Flood	Bottom	19.7	8:00	9.72	8.28	31.38	16.57	4.74	5
CF	20220226	Cloudy	Moderate	Mid-Flood	Bottom	19.7	8:00	9.55	8.27	31.36	16.65	5	5
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:26	9.84	8.38	32.07	16.55	3.23	5
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:26	10.02	8.41	32.07	16.58	2.9	6
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.7	8:25	9.68	8.35	32.02	16.37	2.48	7
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.7	8:25	9.97	8.37	32.02	16.35	2.87	6
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Bottom	8.4	8:24	9.73	8.35	32.06	16.37	2.65	6
WSR01	20220226	Cloudy	Moderate	Mid-Flood	Bottom	8.4	8:24	9.83	8.35	32.06	16.42	2.48	5
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	9.5	8.45	31.58	16.41	2.37	3
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:43	9.26	8.5	31.57	16.43	2.49	4
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.75	8:42	9.48	8.46	31.54	16.31	2.3	5
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.75	8:42	9.51	8.49	31.54	16.39	2.6	7
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Bottom	8.5	8:41	9.37	8.46	31.5	16.45	2.24	6
WSR02	20220226	Cloudy	Moderate	Mid-Flood	Bottom	8.5	8:41	9.37	8.49	31.57	16.64	2.31	5
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:55	9.47	8.18	31.62	16.45	2.29	7
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	8:55	9.4	8.19	31.65	16.26	2.47	8
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.25	8:54	9.58	8.21	31.66	16.33	2.54	6
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.25	8:54	9.52	8.18	31.62	16.13	2.46	5
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Bottom	7.5	8:53	9.44	8.18	31.69	16.28	2.11	3
WSR03	20220226	Cloudy	Moderate	Mid-Flood	Bottom	7.5	8:53	9.4	8.22	31.62	16.13	2.3	5
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	9.85	8.33	31.54	16.49	3.28	5
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:06	10.06	8.38	31.5	16.43	2.98	9
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.35	9:05	10.02	8.38	31.51	16.44	2.81	6
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.35	9:05	10.03	8.38	31.53	16.65	2.97	6
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Bottom	5.7	9:04	9.79	8.34	31.52	16.4	2.36	5
WSR04	20220226	Cloudy	Moderate	Mid-Flood	Bottom	5.7	9:04	9.81	8.36	31.48	16.53	2.23	5
WSR16	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	10:04	9.61	8.31	32.39	16.51	3.09	5
WSR16	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	10:04	9.56	8.28	32.4	16.57	3.07	7
WSR16	20220226	Cloudy	Moderate	Mid-Flood	Middle	8.05	10:03	9.63	8.34	32.38	16.28	2.18	6

WSR16	20220226	Cloudy	Moderate	Mid-Flood	Middle	8.05	10:03	9.64	8.28	32.42	16.52	2.58	4
WSR16	20220226	Cloudy	Moderate	Mid-Flood	Bottom	15.1	10:02	9.63	8.3	32.43	16.32	2.45	2.5
WSR16	20220226	Cloudy	Moderate	Mid-Flood	Bottom	15.1	10:02	9.7	8.33	32.43	16.56	2.69	3
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:19	9.82	8.25	31.88	16.41	2.73	5
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:19	9.93	8.2	31.9	16.39	2.4	5
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.65	9:18	10.01	8.26	31.87	16.36	2.2	5
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.65	9:18	9.84	8.2	31.83	16.3	2.44	4
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Bottom	6.3	9:17	9.69	8.26	31.83	16.57	1.65	5
WSR33	20220226	Cloudy	Moderate	Mid-Flood	Bottom	6.3	9:17	9.93	8.21	31.89	16.42	1.72	7
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:30	9.89	8.16	32.04	16.19	3.69	7
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:30	9.93	8.18	32.03	16.19	3.79	7
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.25	9:30	10.23	8.19	32.01	16.24	3.51	4
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Middle	3.25	9:30	10.04	8.19	32.02	16.19	3.23	4
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Bottom	5.5	9:29	10.18	8.2	32.02	16.21	2.99	7
WSR36	20220226	Cloudy	Moderate	Mid-Flood	Bottom	5.5	9:29	10.23	8.21	32.03	16.33	3.4	6
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:44	9.72	8.45	31.93	16.22	2.2	4
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Surface	1	9:44	9.66	8.47	31.92	16.46	2.44	5
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.25	9:43	9.58	8.46	31.89	16.21	2.38	4
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Middle	4.25	9:43	9.49	8.42	31.86	16.42	2.05	4
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Bottom	7.5	9:42	9.59	8.47	31.85	16.4	2.14	4
WSR37	20220226	Cloudy	Moderate	Mid-Flood	Bottom	7.5	9:42	9.55	8.43	31.93	16.16	1.93	5
CE	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	17:34	8.77	8.38	31.93	16.66	5.49	4
CE	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	17:34	8.84	8.42	32.00	16.73	5.61	4
CE	20220226	Cloudy	Moderate	Mid-Ebb	Middle	10.95	17:33	8.79	8.37	32.08	16.55	5.81	5
CE	20220226	Cloudy	Moderate	Mid-Ebb	Middle	10.95	17:33	8.83	8.4	32.02	16.66	6.06	3
CE	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	20.9	17:32	8.78	8.41	32.04	16.65	6.14	5
CE	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	20.9	17:32	8.97	8.38	32.08	16.57	6.1	4
CF	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:51	9.07	8.31	31.60	16.56	4.94	4
CF	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:51	8.98	8.31	31.63	16.45	4.67	5
CF	20220226	Cloudy	Moderate	Mid-Ebb	Middle	10.7	19:50	9.15	8.27	31.64	16.42	4.82	4
CF	20220226	Cloudy	Moderate	Mid-Ebb	Middle	10.7	19:50	9.18	8.31	31.69	16.39	4.69	5
CF	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	19:49	8.98	8.29	31.69	16.37	4.88	4
CF	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	20.4	19:49	9.14	8.29	31.60	16.55	4.92	4

WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:30	9.76	8.34	31.44	16.48	3.48	6
WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:30	9.79	8.31	31.51	16.59	3.96	6
WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Middle	4.7	19:29	9.8	8.32	31.43	16.58	3.77	5
WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Middle	4.7	19:29	9.81	8.31	31.45	16.58	3.74	3
WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	19:28	9.72	8.31	31.55	16.57	2.88	3
WSR01	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	8.4	19:28	9.76	8.36	31.56	16.42	3.17	3
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:13	9.84	8.31	31.24	16.61	1.98	3
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	19:13	9.85	8.3	31.15	16.76	2.16	3
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Middle	4.95	19:12	9.76	8.34	31.25	16.55	2.24	4
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Middle	4.95	19:12	9.69	8.33	31.24	16.65	2.47	4
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	8.9	19:11	9.86	8.3	31.13	16.74	2.48	4
WSR02	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	8.9	19:11	9.83	8.31	31.19	16.57	2.3	3
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:59	9.07	8.39	32.06	16.40	3.79	5
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:59	9.13	8.38	32.00	16.41	3.65	5
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.7	18:58	9.09	8.41	31.99	16.53	3.43	6
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.7	18:58	9.01	8.42	32.12	16.54	3.54	5
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.4	18:57	8.92	8.41	32.06	16.47	3.58	5
WSR03	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.4	18:57	9.17	8.39	32.15	16.53	3.61	3
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:48	9.11	8.28	31.90	16.64	4.59	4
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:48	9.04	8.28	31.92	16.61	4.55	7
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.9	18:47	9.09	8.28	31.96	16.55	4.18	4
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.9	18:47	9.27	8.27	31.84	16.62	4.48	4
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	18:46	9.19	8.26	31.97	16.62	3.8	5
WSR04	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.8	18:46	9.12	8.24	31.91	16.49	4.02	3
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	17:54	8.93	8.35	31.96	16.65	2.89	4
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	17:54	9.09	8.34	31.94	16.60	3.08	3
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Middle	8.3	17:53	9.1	8.34	31.93	16.69	2.73	4
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Middle	8.3	17:53	9.08	8.36	32.03	16.59	2.69	4
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	15.6	17:52	9.05	8.31	32.01	16.72	3.15	4
WSR16	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	15.6	17:52	9.13	8.35	31.97	16.66	2.79	5
WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:37	9.25	8.21	32.00	16.64	3.88	5
WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:37	9.09	8.24	31.93	16.58	3.6	3
WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.65	18:36	9.13	8.22	31.92	16.56	2.99	6

WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.65	18:36	9.25	8.23	31.97	16.76	3.27	5
WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	18:35	9.16	8.19	31.96	16.58	3.15	7
WSR33	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.3	18:35	9.21	8.22	31.99	16.54	2.86	5
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:24	9.69	8.15	31.23	16.42	3.05	6
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:24	9.55	8.2	31.24	16.33	2.58	4
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.75	18:24	9.55	8.17	31.32	16.51	2.81	6
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.75	18:24	9.78	8.18	31.28	16.53	2.41	7
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	18:23	9.63	8.15	31.31	16.37	2.32	5
WSR36	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.5	18:23	9.63	8.19	31.32	16.41	2.3	5
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:13	8.82	8.42	31.40	16.47	2.68	5
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Surface	1	18:13	8.75	8.4	31.49	16.48	3.19	3
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.95	18:12	8.77	8.43	31.50	16.69	2.82	4
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Middle	3.95	18:12	8.85	8.41	31.47	16.52	2.95	4
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	18:11	8.98	8.43	31.43	16.55	2.68	5
WSR37	20220226	Cloudy	Moderate	Mid-Ebb	Bottom	6.9	18:11	9	8.39	31.41	16.58	3.05	4

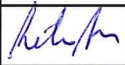


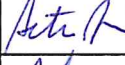
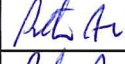
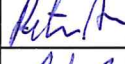
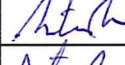
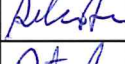
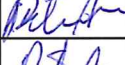



# Landfill Gas Monitoring - Field Measurement Recording Sheet

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	29/9/2021

Monitoring Location	Date (dd/mm/yyyy)	Time (hh:mm)	Weather Condition Sunny/ Fine/ Overcast/ Drizzle/ Rain/ Storm/ Hazy	Landfill Gas Parameters				Physical Parameters Temp (°C) / Pressure mBar	Trench Depth (m)	Measured by	
				Methane (%LEL)	Oxygen (%)	Carbon Dioxide (%)	Balance Gas (%) (e.g. H2S)			Name	Signature
Ch1+625 - Ch1+513	8/2/22	08:30	Fine	0	20.9	0.04	0	16.1 / 1018.2	2	Peter Au	
Ch1+625 - Ch1+513	--	13:30	Fine	0	20.9	0.04	0	20.8 / 1018.9	2	Peter Au	
Ch1+625 - Ch1+513	9/2/22	08:30	Fine	0	20.9	0.04	0	17.0 / 1018.9	2	Peter Au	
Ch1+625 - Ch1+513	--	13:30	Fine	0	20.9	0.04	0	21.2 / 1019.1	2	Peter Au	
Ch1+625 - Ch1+513	10/2/22	08:30	Fine	0	20.9	0.04	0	16.8 / 1016.9	2	Peter Au	
Ch1+625 - Ch1+513	--	13:30	Fine	0	20.9	0.04	0	21.3 / 1017.2	2	Peter Au	
Ch1+625 - Ch1+513	11/2/22	08:30	Sunny	0	20.9	0.04	0	16.4 / 1017.0	2	Peter Au	
Ch1+625 - Ch1+513	--	13:30	Sunny	0	20.9	0.04	0	20.6 / 1016.8	2	Peter Au	
Ch1+625 - Ch1+513	12/2/22	08:30	Overcast	0	20.9	0.04	0	16.2 / 1016.1	2	Peter Au	
Ch1+625 - Ch1+513	--	13:30	Overcast	0	20.9	0.04	0	20.1 / 1016.0	2	Peter Au	
Ch1+625 - Ch1+513		08:30						/		Peter Au	
Ch1+625 - Ch1+513		13:30						/		Peter Au	
Ch1+625 - Ch1+513		08:30						/		Peter Au	
Ch1+625 - Ch1+513		13:30						/		Peter Au	

Checked by:                     Nox                    

Date:                     12-2-2022

# 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	29/9/2021

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
Ch1+625 - Ch1+513	14/2/22	08:30	Drizzle	0	20.9	0.04	0	14.8 / 1017.2	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	14/2/22	13:30	Drizzle	0	20.9	0.04	0	18.2 / 1017.0	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	15/2/22	08:30	Fine	0	20.9	0.04	0	14.5 / 1017.3	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	15/2/22	13:30	Fine	0	20.9	0.04	0	19.1 / 1017.5	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	16/2/22	08:30	Fine	0	20.9	0.04	0	14.8 / 1015.9	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	16/2/22	13:30	Overcast	0	20.9	0.04	0	18.0 / 1016.1	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	17/2/22	08:30	Rain	0	20.9	0.04	0	15.1 / 1015.1	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513	17/2/22	13:30	Rain	0	20.9	0.04	0	16.8 / 1015.2	2	Peter Au	<i>Peter Au</i>
Ch1+625 - Ch1+513		08:30						/		Peter Au	
Ch1+625 - Ch1+513		13:30						/		Peter Au	
Ch1+625 - Ch1+513		08:30						/		Peter Au	
Ch1+625 - Ch1+513		13:30						/		Peter Au	
Ch1+625 - Ch1+513		08:30						/		Peter Au	
Ch1+625 - Ch1+513		13:30						/		Peter Au	

Checked by : Ng

Date 17-2-2022

# Appendix M

# HOKLAS Laboratory Certificate



Hong Kong Accreditation Service  
香港認可處

**Certificate of Accreditation**  
認可證書

*This is to certify that*  
特此證明

**ACUMEN LABORATORY AND TESTING LIMITED**  
浩科檢測中心有限公司

**Lot 12, Tam Kon Shan Road, North Tsing Yi, New Territories, Hong Kong**  
香港新界青衣北担杆山路12路

*has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a*  
在認可諮詢委員會的建議下獲香港認可處執行機關接受為

**HOKLAS Accredited Laboratory**  
「香港實驗所認可計劃」認可實驗所

*This laboratory meets the requirements of ISO/IEC 17025:2005 and it has been accredited for performing specific tests or calibrations as listed in the scope of accreditation within the test category of*

**Environmental Testing**

*此實驗所符合ISO/IEC 17025:2005所訂的要求  
並獲認可進行載於認可範圍內下述測試類別中的指定測試或校正工作*

**環境測試**

*This accreditation to ISO/IEC 17025:2005 demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).  
此項 ISO/IEC 17025:2005 的認可資格證明此實驗所具備指定範疇內所須的技術能力及  
實施一套實驗所質量管理體系(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。*

*The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive*  
現經香港認可處執行機關授權在此蓋上香港認可處的印章



WONG Wang-wah, Executive Administrator  
執行幹事 黃宏華  
Issue Date: 16 July 2014  
簽發日期: 二零一四年七月十六日

Registration Number: HOKLAS 241  
註冊號碼:



Date of First Registration: 16 July 2014  
首次註冊日期: 二零一四年七月十六日

*This certificate is issued subject to the terms and conditions laid down by HKAS*  
本證書按照香港認可處訂立的條款及條件發出

L 001195

## Appendix N

# Water Quality and Landfill Gas Equipment Calibration Certificate



專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/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-BB010050  
Date of Issue : 13 January 2022  
Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

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

### PART B - SAMPLE INFORMATION

Name of Equipment : HORIBA U-53  
Manufacturer : HORIBA  
Serial Number : S2A98W8H  
Date of Received : 10 January 2022  
Date of Calibration : 11 January 2022  
Date of Next Calibration : 10 April 2022

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

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

### PART D - CALIBRATION RESULT

#### (1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0	--	Satisfactory
10	10.4	4.0	Satisfactory
20	20.2	1.0	Satisfactory
100	105	5.0	Satisfactory
800	798	-0.3	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  (%)

#### (2) Dissolved oxygen


EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
8.87	8.84	-0.03	Satisfactory
6.05	6.43	0.38	Satisfactory
4.47	4.67	0.20	Satisfactory
2.03	2.37	0.34	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  (mg/L)

#### (3) pH value

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AUTHORIZED  
SIGNATORY:

  
LEE Chun-ning  
Assistant Manager (Chemical Testing)



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/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-BB010050

Date of Issue : 13 January 2022

Page No. : 2 of 2

TARGET ( PH UNIT )	DISPLAY READING ( PH UNIT )	TOLERANCE	RESULT
4.00	3.96	-0.04	Satisfactory
7.42	7.24	-0.18	Satisfactory
10.01	9.87	-0.14	Satisfactory

Tolerance of pH value should be less than  $\pm 0.2$  ( pH unit )

### (4) Salinity

EXPECTED READING ( G/L )	DISPLAY READING ( G/L )	TOLERANCE ( % )	RESULT
10	9.23	-7.70	Satisfactory
20	19.19	-4.05	Satisfactory
30	29.14	-2.87	Satisfactory

Tolerance of Salinity should be less than  $\pm 10.0$  ( % )

### (5) Temperature

READING OF REF. THERMOMETER ( °C )	DISPLAY READING ( °C )	TOLERANCE ( °C )	RESULT
19	19.25	0.25	Satisfactory
24	23.70	-0.30	Satisfactory
33	32.84	-0.16	Satisfactory

Tolerance of Temperature should be less than  $\pm 2.0$  ( °C )

### 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 ---



專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/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-BB020007  
Date of Issue : 10 February 2022  
Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

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

### PART B - SAMPLE INFORMATION

Name of Equipment : HORIBA U-53  
Manufacturer : HORIBA  
Serial Number : PORBNFNT  
Date of Received : 07 February 2022  
Date of Calibration : 07 February 2022  
Date of Next Calibration : 07 May 2022

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Test Parameter</u>	<u>Reference Method</u>
Turbidity	APHA 21e 2130B
Dissolved oxygen	APHA 21e 4500 O
pH value	APHA 21e 4500 H+
Salinity	APHA 21e 2520B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure

### PART D - CALIBRATION RESULT

#### (1) Turbidity

EXPECTED READING (NTU)	DISPLAY READING (NTU)	TOLERANCE (%)	RESULT
0	0	--	Satisfactory
10	9.78	-2.2	Satisfactory
20	20.7	3.5	Satisfactory
100	99.5	-0.5	Satisfactory
800	792	-1.0	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  (%)

#### (2) Dissolved oxygen


EXPECTED READING (MG/L)	DISPLAY READING (MG/L)	TOLERANCE (MG/L)	RESULT
9.26	9.29	0.03	Satisfactory
6.81	6.98	0.17	Satisfactory
4.52	5.01	0.49	Satisfactory
3.94	4.37	0.43	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  (mg/L)

#### (3) pH value

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AUTHORIZED  
SIGNATORY:

  
LEE Chun-ning  
Assistant Manager (Chemical Testing)





專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong  
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Tel: (852) 3956 8717; Fax: (852) 3956 3928

## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB020007  
Date of Issue : 10 February 2022  
Page No. : 2 of 2

TARGET ( PH UNIT )	DISPLAY READING ( PH UNIT )	TOLERANCE	RESULT
4.00	3.99	-0.01	Satisfactory
7.42	7.42	0.00	Satisfactory
10.01	10.12	0.11	Satisfactory

Tolerance of pH value should be less than  $\pm 0.2$  ( pH unit )

### (4) Salinity

EXPECTED READING ( G/L )	DISPLAY READING ( G/L )	TOLERANCE ( % )	RESULT
10	9.31	-6.90	Satisfactory
20	20.25	1.25	Satisfactory
30	31.68	5.60	Satisfactory

Tolerance of Salinity should be less than  $\pm 10.0$  ( % )

### (5) Temperature

READING OF REF. THERMOMETER ( °C )	DISPLAY READING ( °C )	TOLERANCE ( °C )	RESULT
18	17.80	-0.2	Satisfactory
26	25.82	-0.18	Satisfactory
32.5	32.14	-0.36	Satisfactory

Tolerance of Temperature should be less than  $\pm 2.0$  ( °C )

### Remark(s)

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

--- END OF REPORT ---

# Calibration Certificate

**Customer Name** PROMAT (HK) LTD  
**Customer Details** SAN PO KONG  
KOWLOON  
HONG KONG


**Order Number** 21000418  
**Acknowledgement Number** 165921

**Instrument** PS500  
**Serial number** 254928  
**Test Date** 29 September 2021

*This instrument has been manufactured in accordance with our ISO9001 approved procedures and conforms to the quality and manufacturing standards laid down in our process. This instrument has been calibrated using gases that are traceable to national standards.*

## CALIBRATION RESULTS

Gas Applied	Conc.	Range	After Cal
CO2	3.00 % CO2	%	3.00 %
Methane	50 % LEL	LEL	50 %
O2	Air	% VOL	20.9 %
H2S	50 PPM H2S	PPM	50 PPM
CO	500 PPM CO	PPM	499 PPM

Calibrated on behalf of GMI Ltd by:  \_\_\_\_\_



## PS500

Portable 5 Gas Monitor



**Designed by our customers, this robust and accurate gas detector provides unrivalled protection in confined space applications.**

### Auto Bump & Calibration Station

- Simple user interface
- Bump test or calibration
- Bump/calibration results storage
- Standalone, PC or Ethernet options
- Robust construction

### Features

- Over 15 "plug-and-play" smart sensors
- PID sensors for VOC detection
- Flexible configuration to suit your requirements
- Audible and visual alarms
- Datalogging for calibration certificates, data management, and event logging
- Robust construction
- Internal pump (optional)
- Easy maintenance
- Low cost of ownership



# PS500

## Portable 5 Gas Monitor

### Description

The PS500 can be configured to detect up to five gases with its electrochemical and catalytic sensors, photo ionisation detectors (PID), and infrared capabilities.

“Plug and Play” maximizes flexibility by allowing other gases to be detected, by simply inserting a new smart sensor assembly.

The PS500 is effective in noisy environments, featuring a loud (95dB) penetrating and distinctive audible alarm together with a high visibility visual alarm.

With a robust, rubberized casing guaranteeing hi-Impact resistance, the PS500 is ideal for the most demanding industrial environments. An optional internal pump allows both pumped or diffusion measurements. If the pump is fitted, it can be easily turned on/off, depending on application. E.g. pump on to perform pre-entry measurements correctly, pump off for confined space working.

### Technical Specification

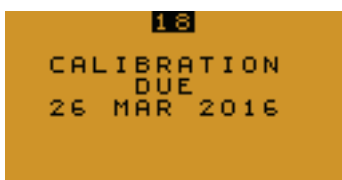
Size:	140 x 85 x 45 mm / 5.5" x 3.3" x 1.7"
Weight:	0.4 kg / 14 oz.
Humidity:	0-98% non condensing
Alarms:	Visual 360o full light bar, piercing 95db audible Low battery alarm User programmable alarms: Up to 4 alarms per toxic gas (incl. STEL / TWA) 3 alarms for O2 2 alarms for LEL
Display:	LCD backlight display
Datalogging:	Timed: 24 hours of timed logs at 1 log per minute Session: Minimum of 180 logs Calibration: 8 calibration logs
Sampling:	Maximum tubing length - 30 m / 98 ft. (Response times increase by approx. 1 second for every metre / 3 ft. of tubing used)
Battery:	NiMH rechargeable battery - 12 hr. minimum with pump Alkaline battery pack (3 AA) - 12 hr. minimum with pump
Enclosure:	High impact rubberised polycarbonate case
IP Rating:	IP65 (Dust tight and water resistant)
Approvals:	* UL 913 Class I, Div 1 Groups A,B,C,D MED (0038/YY) - Module B & E CE ATEX II 2 G EEx iad IIC T3 / T4
IECEX:	Ex iad IIC T4/T3
Warranty:	2 years

\* Excludes NDIR sensor option.

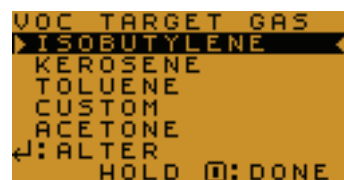
### Features



Display in alarm conditions



Configurable calibration options



VOC target gas selection

## Automatic Bump Testing and Calibration

To provide accurate performance and results, the PS500 has to be properly used and maintained. The Auto Bump & Calibration Station (ABC) provides bump testing, calibration and data management options and is compact, robust and intuitive to use. Two versions of the ABC are available allowing either a single gas cylinder or up to three cylinders to be connected. Additionally, a special three cylinder version is available for reactive gases. The ABC is fully configurable and can operate in three distinct modes of operation:



### Standalone

- No PC or network connection required
- Simple setup and configuration
- Results stored on ABC
- USB access for results extraction
- Settings App for easy printing of calibration certificates

### PC

- PC / laptop connected to ABC
- Setup and configuration using flexiCal Plus software
- Results stored in the PC / laptop
- Easy access to all results
- Powerful data management / calibration certificate generation

### Ethernet

- Multiple ABC's can be connected to a network
- Setup and configuration using IMS Settings software
- All results stored in the IMS database
- Easy access to all results
- Powerful data management / calibration certificate generation

### Auto Bump & Calibration Station Technical Station

Size:	200 x 140 x 135mm (7.9" x 5.5" x 5.3")
Weight:	Single Gas - 1.2kg (43oz) Multi Gas - 1.35kg (48oz)
Interfaces:	Standalone /USB /Ethernet
LED Indicators:	Power (Green) /Testing (Orange) / Pass (Green) / Fail (Red)
Testing Time:	Bump Test 150 secs Calibration Test 150 secs
Data Storage:	Up to 6000 Bump & Calibration results
Power Supply:	12V dc, 2A
Operating Temperature:	-10°C to 40°C (14°F to 104°F)
Gas Ports:	Single Gas - 3 (Air, Gas & Exhaust) Multi Gas - 5 (Air, Gas x 3 & Exhaust)

# PS500

## Ordering information

Sensor Specification				
Gas	Ranges	Resolution	Sensor Type	T90
LEL	0 - 100% LEL	1% LEL	Cat-bead	15 sec
	0 - 100% LEL	1% LEL	NDIR	35 sec
CO <sub>2</sub>	0 - 2.50%	0.01%	NDIR	25 sec
	2.50 - 5.00%	0.05%		
O <sub>2</sub>	0 - 25%	0.1%	Electrochemical	10 sec
CO	0 - 1000PPM	1PPM	Electrochemical	35 sec
H <sub>2</sub> S	0 - 100PPM	1PPM	Electrochemical	25 sec
DUAL TOX CO/H <sub>2</sub> S	0-1000PPM(CO)	1PPM	Electrochemical	35 sec & 25 sec
	0-100PPM(H <sub>2</sub> S)			
SO <sub>2</sub>	0 - 30PPM	1PPM	Electrochemical	10 sec
	0 - 100PPM	1PPM	Electrochemical	10 sec
CL <sub>2</sub>	0 - 10PPM	0.1PPM	Electrochemical	30 sec
NH <sub>3</sub>	0 - 100PPM	1PPM	Electrochemical	60 sec
NO	0 - 300PPM	1PPM	Electrochemical	20 sec
NO <sub>2</sub>	0 - 20PPM	0.1PPM	Electrochemical	185 sec
PH <sub>3</sub>	0 - 100PPM	1PPM	PID	5 sec
VOC	0 - 100PPM	0.1PPM	PID	5 sec
	0 - 1000PPM	1PPM	PID	5 sec
C <sub>6</sub> H <sub>6</sub>	0 - 20PPM	0.1PPM	PID	5 sec

Long duration battery pack and instrument with fast charge battery pack, charging in Fast Charger master / slave units.



Battery / Charger Accessories	
66701	Long duration rechargeable battery pack
66702	Alkaline battery pack (3 x AA batteries)
66703	Fast charge rechargeable battery pack
66140	Standard charger - c/w universal plug (for 66701)
66200	5-way charger - c/w universal plug (for 66701)
66207	10-way charger - c/w universal plug (for 66701)
66206	Car/vehicle charger 12/24V (for 66701)
66513	Fast charger - c/w universal plug
66516	10-way fast charger master unit - c/w universal plug
66514	10-way fast charger slave unit - c/w universal plug

Recommended Accessories / Spare Parts	
66485	Hydrophobic filter - external inline
66136	3m sample line (Tygon® tubing) with connector
66930	3m reactive gas tubing with connector
66028	Neck harness
66017	Probe assembly
61208	Datalogging package
61445	PS500 CAL - Calibration Package
66083	Sensor grill hydrophobic filter
66084	Sensor gas inlet filter
66108	Blank sensor plug
66190	Pump assembly kit - includes pump, tubing and fittings

Automatic Bump & Calibration	
61502	Auto Bump & Calibration Station - single gas connection (6mm fittings & incl. PSU & USB stick with Standalone software)
61504	Auto Bump & Calibration Station - multi gas connections (4mm / 6mm fittings & incl. PSU & USB stick with Standalone software)
61504R	Auto Bump & Calibration Station - multi gas connections (for reactive gases CL <sub>2</sub> / NH <sub>3</sub> )
99553	flexiCal Plus software for PC
99118	Demand flow regulator
64265	Tubing with 6mm push fit connection (for 61502)
61540	600mm reactive gas tubing (for 61504R)
64443	6mm Push fit Barbed Adaptor
61536	4mm Push fit Barbed Adaptor (for 61504)

Gas Kits for Automatic Bump & Calibration Station	
99146	Combi Test Gas Cylinder (2.5% CH <sub>4</sub> , 500ppm CO, 50ppm H <sub>2</sub> S, 18% O <sub>2</sub> , balance N <sub>2</sub> )
64060	Test Gas Kit (Combi test gas 99146, demand flow regulator 99118 c/w 6mm tubing)

As an ISO 9001 approved company, Gas Measurement Instruments quality assurance programmes demand the continuous assessment and improvement of all GMI products. Information in this leaflet could thus change without notification and does not constitute a product specification. Please contact GMI or their representative if you require more details.



PROMAT (HK) Limited 寶時 (香港) 有限公司

☎ : 2661 2392 ☎ : 5196 8860 ✉ : info@promat.hk 🌐 : http://www.promat.hk



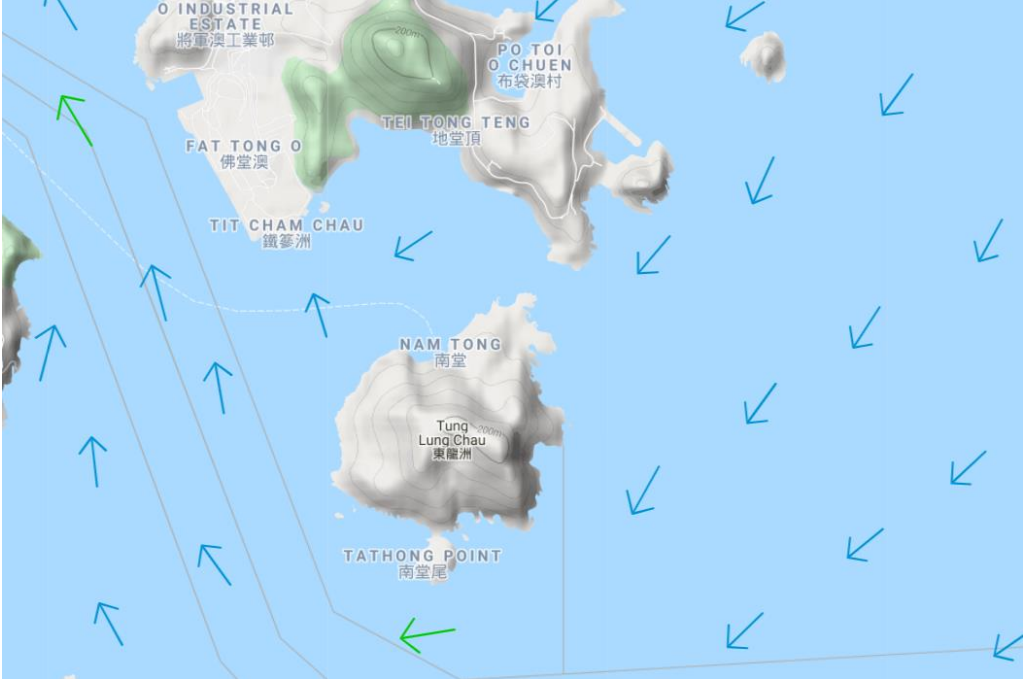
# Appendix 0

## Exceedance Report(s)

**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	04 February 2022 (Lab result received on 11 February 2022)		
Time	08:00-11:04 (Mid-Flood) and 13:15-16:45 (Mid-Ebb)		
<b>Mid-Flood</b>			
Monitoring Location	<p>WSR3</p>		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 6.2 mg/L		> 6.7 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	6.8 mg/L (WSR 3)	4.5 mg/L (CE) 5.2 mg/L (CF)	5.7 mg/L (WSR1) 3.8 mg/L (WSR 2) 5.7 mg/L (WSR 4) 4.2 mg/L (WSR 16) 4.8 mg/L (WSR 33) 4.3 mg/L (WSR 36) 5.2 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) N/A</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 04 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• N/A (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p> <p>Station WSR3 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR3 (6.8 mg/L). According to the construction work schedule provided by Main Contractor, no marine activities were conducted at both Intake and</p>		



	<p>Outfall shafts on 04 February 2022. All vessels were out of the Works area and no water pumping/ rock breaking work at Outfall on the day. Hence the SS exceedances at WSR3 maybe resulted from other natural factors.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 04 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 04 February 2022.</p>
<p>Remarks</p>	<p>Current direction during mid-flood sampling on 04 February 2022:</p>  <p>(Sourced from <a href="http://current.hydro.gov.hk/en/map.html">http://current.hydro.gov.hk/en/map.html</a>)</p>

Supporting Photo 1 (Sea Conditions at WSR3)



Supporting Photo 2 (Sea Conditions at CF)



Supporting Photo 3 (Sea Conditions at CE)



Supporting Photo 4 (Sea Conditions at Intake Shaft Area)



Supporting Photo 5 (Sea Conditions at Outfall Shaft Area)



Supporting Photo 6 (Supporting Document Provided by Main Contractor)

RE: [TKODP] Contract No. 13/WSD/17 Notification of Water Quality Monitoring Data Exceedance (04/02/2022)



甘忠校 <chungchau\_kam@cohl.com>

To clai@acuityhk.com; hchan@acuityhk.com

Cc 'Binnies-David Wong<SRE.Gen./Mea.>'; 'Binnies-Roger Wu<CRE>'; 'Binnies-POON Ying-kok<RE.Safety/Env.>'; 'Binnies-Image Yeung<ARE.Safety>'; 'Binnies-Vanessa Leung<ARE.Geo.>'; 'Nelson Tsui'; 'Kevin Li'; 'Jacky C H Leung'; +14 others



Reply

Reply All

Forward



Mon 14/2/2022 12:02 pm

Dear Charlene, Howard,

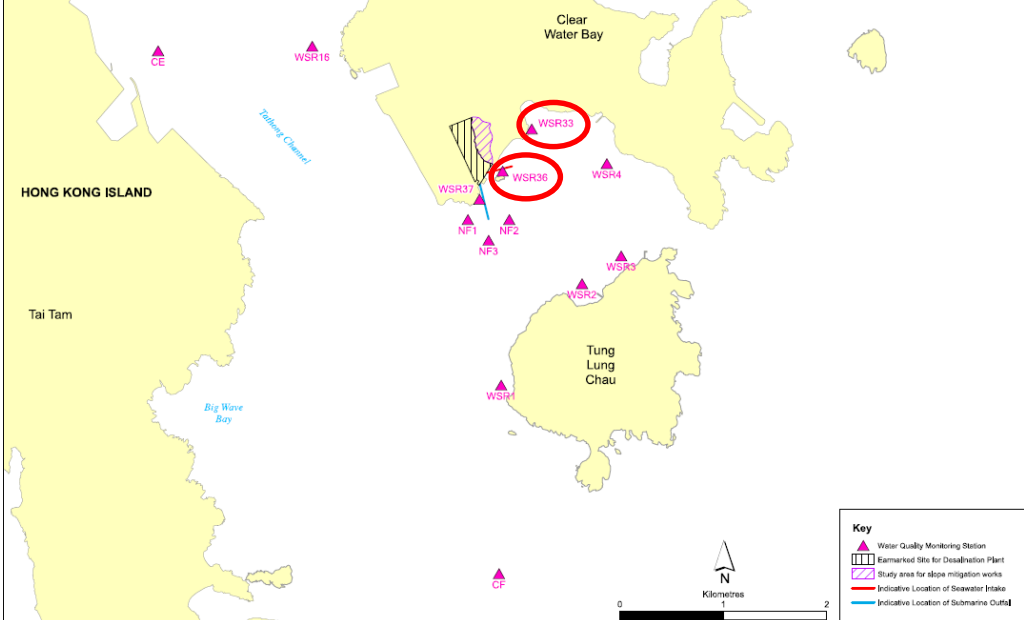
For your information that the marine subcontractor was yet to resume work from CNY, thus of no marine activities at both Intake and Outfall shafts on 4 February 2022 (年初四). All vessels were out of the Works area and no water pumping/ rock breaking work at Outfall on the day.

Regards,  
Brian

Prepared by Charlene Lai

Date 14 February 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

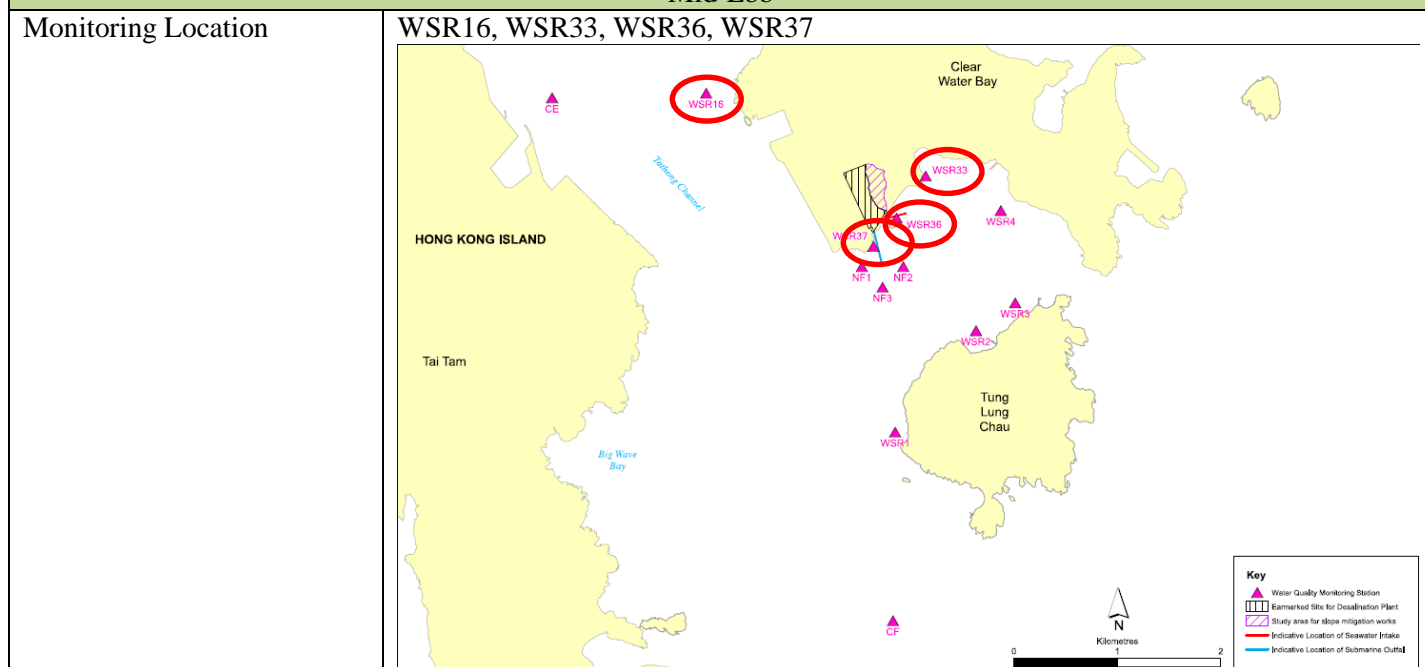
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	8 February 2022 (Lab result received on 14 February 2022)		
Time	09:42-13:12 (Mid-Flood) and 15:47-19:00 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR33, WSR36 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.0 mg/L		> 6.0 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.8 mg/L (WSR 33) 6.5 mg/L (WSR 36)	3.5 mg/L (CE) 3.3 mg/L (CF)	2.8 mg/L (WSR1) 3.1 mg/L (WSR 2) 3.2 mg/L (WSR 3) 3.3 mg/L (WSR 4) 3.3 mg/L (WSR 16) 4.5 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) plant mobilisation for later shotcreting work inside the caisson.</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 8 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1(Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p> <p>No marine construction activities were conducted at WSR36 on 8 February 2022. SS exceedance was however observed at WSR36 (6.5mg/L). Although dewatering of unpolluted ingress seawater in caisson were conducted at WSR37 (Outfall Shaft) on 8</p>		

February 2022, the SS level at WSR 37 (4.5mg/L) was lower than WSR36, where WSR36 was located upstream during mid-flood tide, which would be expected no cause by the dewatering of unpolluted ingress seawater in caisson at WSR37 (Outfall Shaft), WSR 33 was located upstream during mid-flood tide but the SS level at WSR33 (5.8 mg/L) was similar to that at WSR36 (6.5mg/L). The observed SS exceedance maybe caused by other natural factors.

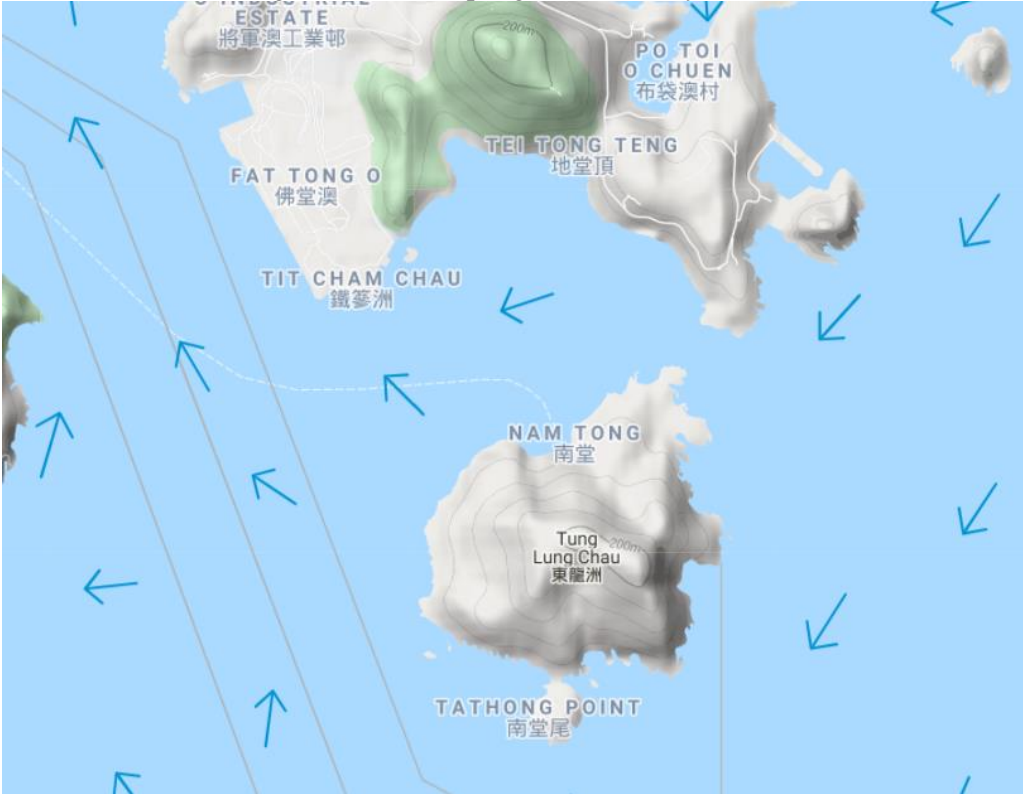
According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 8 February 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 8 February 2022.

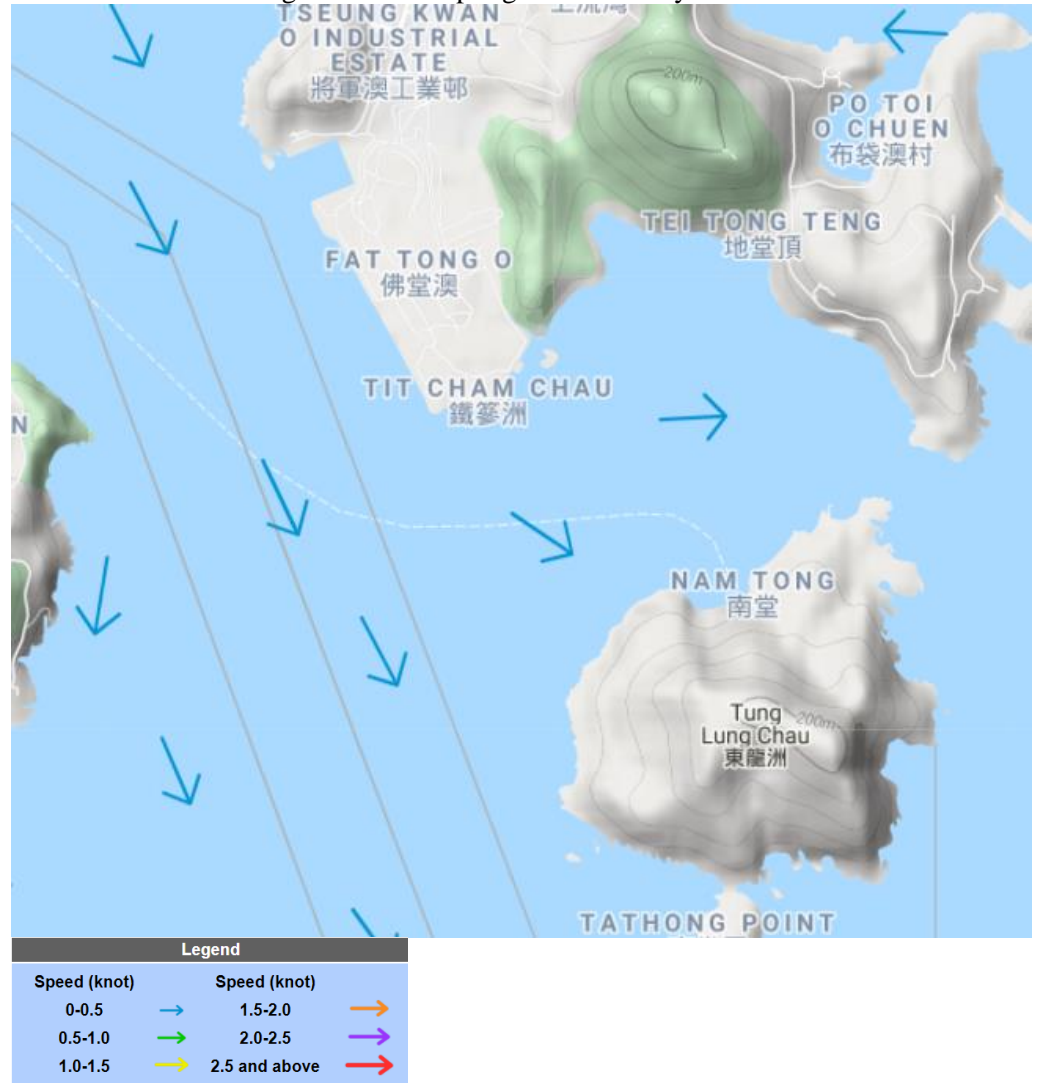
**Mid-Ebb**



<b>Parameter</b>	Suspended Solid (SS)		
<b>Action &amp; Limit Levels</b>	<b>Action Level</b>		<b>Limit Level</b>
	> 8.2 mg/L		> 8.9 mg/L
<b>Measurement Level</b>	<b>Impact Station(s) of Exceedance</b>	<b>Control Stations</b>	<b>Impact Station(s) without Exceedance</b>
	8.8 mg/L (WSR16) 14.2 mg/L (WSR 33) 8.7 mg/L (WSR 36) 9.3 mg/L (WSR 37)	6.8 mg/L (CE) 3.5 mg/L (CF)	2.6 mg/L (WSR1) 6.7 mg/L (WSR 2) 4.0 mg/L (WSR 3) 7.0 mg/L (WSR 4)
<b>Possible reason for Action or Limit Level Non-compliance</b>	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) plant mobilisation for later shotcreting work inside the caisson</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 8 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1(Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p>		

	<p>Station WSR16 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR16 (8.8 mg/L). According to the construction work schedule provided by Main Contractor, dewatering of unpolluted ingress seawater in caisson was conducted at WSR37 (Outfall Shaft), however as no marine construction work was conducted at Outfall Shaft, it would be expected that the dewatering of unpolluted ingress seawater in caisson would generate limited SS of this activity.</p> <p>No marine construction activity was schedule at WSR36 (Intake Shaft) on 8 February 2022 but the SS exceedance was observed (8.7mg/L), as the exceedance of SS level at WSR37 would be expected no cause by the dewatering of unpolluted ingress seawater in caisson, in view of that the exceedance of SS level at WSR36 is concluded not project related.</p> <p>WSR36 and WSR37 was located upstream during mid-ebb tide but the SS level at WSR33 (14.2mg/L) was higher than WSR36 (8.7mg/L) and WSR37 (9.3mg/L), where the dewatering of unpolluted ingress seawater in caisson were conducted. The observed SS exceedance maybe caused by other natural factors.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 8 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 8 February 2022.</p>
<p>Remarks</p>	<p>Current direction during mid-flood sampling on 8 February 2022:</p> 

Current direction during mid-ebb sampling on 8 February 2022:



(Sourced from <http://current.hydro.gov.hk/en/map.html>)



Supporting Photo 1 (Sea Conditions at WSR16)



Supporting Photo 2 (Sea Conditions at WSR33)



Supporting Photo 3 (Sea Conditions at WSR36)



Supporting Photo 4 (Sea Conditions at WSR37)



Supporting Photo 5 (Sea Conditions at CF)



Supporting Photo 6 (Sea Conditions at CE)



Supporting Photo 7 (Sea Conditions at Intake Shaft Area)



Supporting Photo 8 (Sea Conditions at Outfall Shaft Area)



Prepared by	Howard Chan
Date	25 February 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

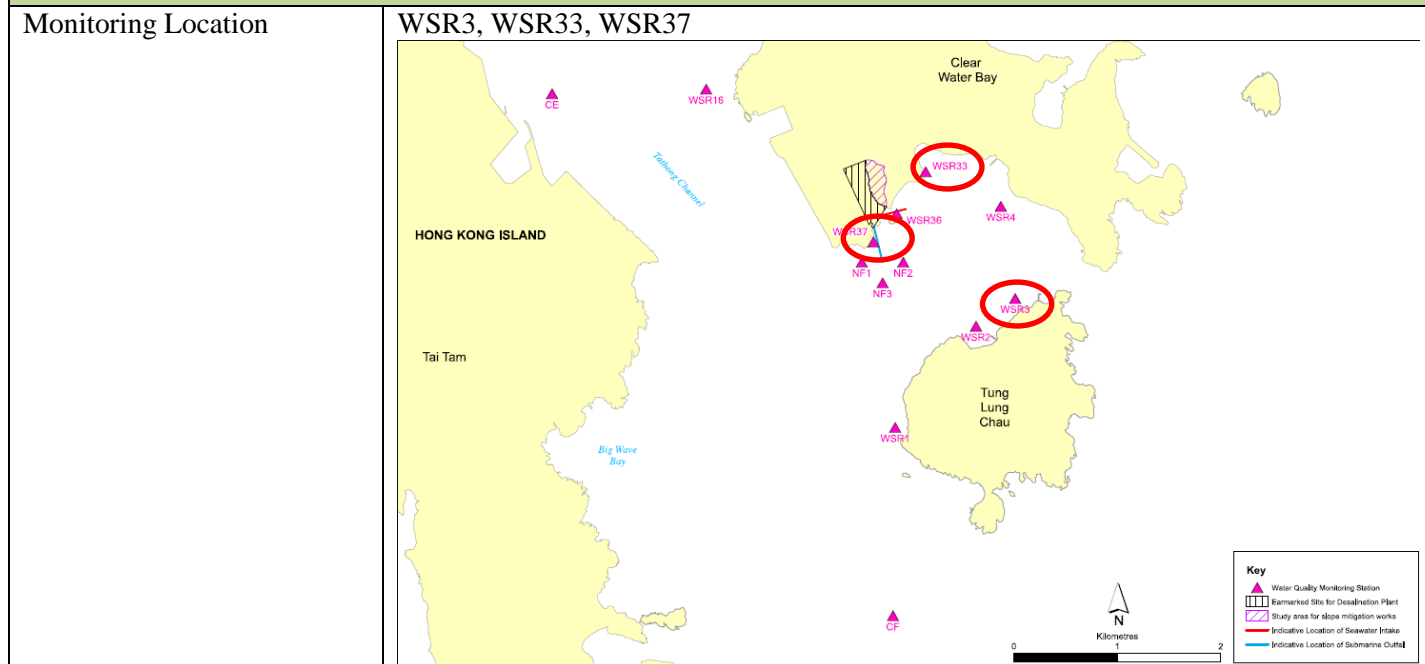
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	10 February 2022 (Lab result received on 17 February 2022)		
Time	08:12-11:42 (Mid-Flood) and 18:17-19:00 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR1, WSR2, WSR3, WSR33		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.2 mg/L		> 6.0 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	9.2 mg/L (WSR1) 6.5 mg/L (WSR 2) 6.8 mg/L (WSR 3) 5.6 mg/L (WSR 33)	3.7 mg/L (CE) 4.3 mg/L (CF)	4.3 mg/L (WSR 4) 3.4 mg/L (WSR 16) 2.6 mg/L (WSR 36) 2.8 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) plant/ equipment mobilisation for later shotcreting work inside the caisson</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 10 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1(Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p> <p>Station WSR1, WSR2 and WSR3 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR1 (9.2mg/L), WSR2 (6.5mg/L) and WSR3 (6.8mg/L).</p>		

According to the construction work schedule provided by Main Contractor, no marine activity was conducted at Intake and Outfall shafts, only dewatering of unpolluted ingress seawater in caisson with contact with water was conducted at Outfall shaft on 10 February 2022. The SS level at upstream station WSR33 (5.6mg/L) was higher than WSR36 (2.6mg/L) and WSR37 (2.8mg/L), where the dewatering of unpolluted ingress seawater in caisson at WSR37 (Outfall shaft) on 10 February 2022. No SS exceedance were observed at WSR36 and WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project related.

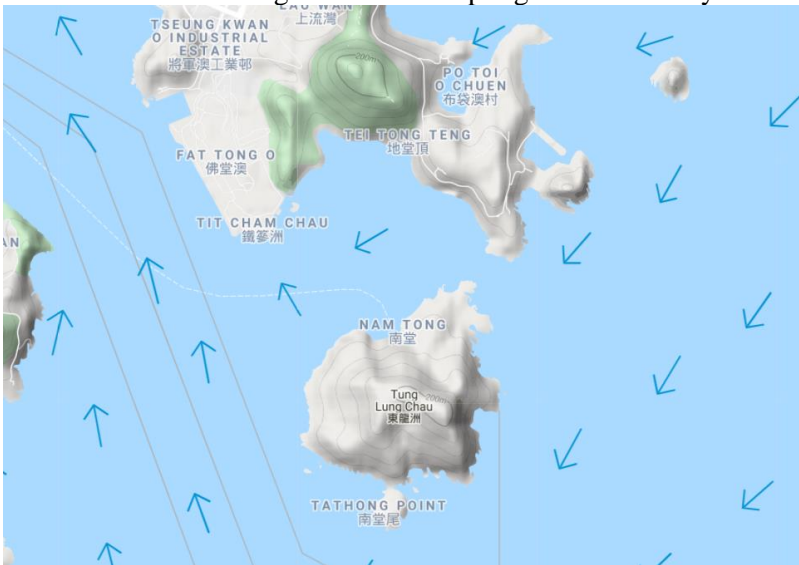
According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 10 February 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 10 February 2022.

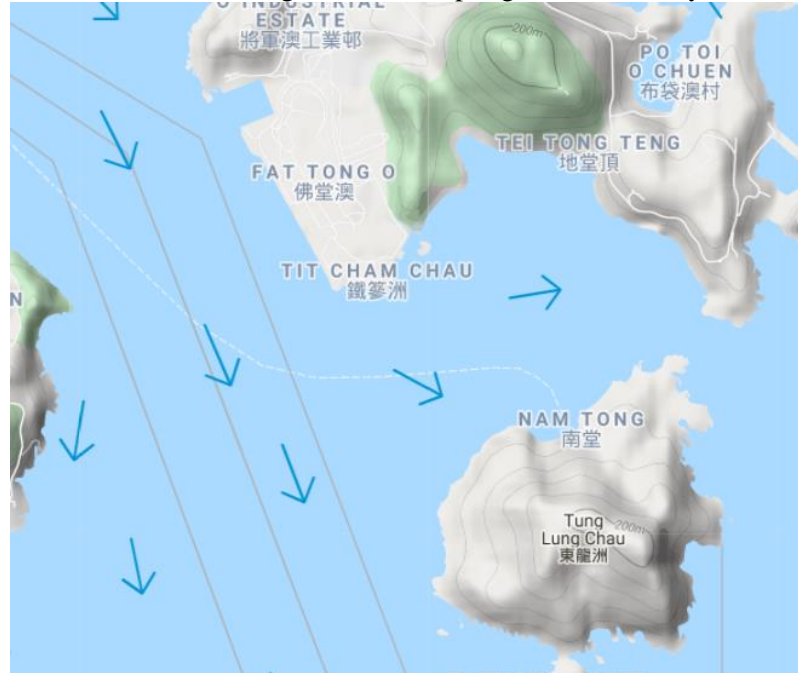
**Mid-Ebb**



<b>Parameter</b>	Suspended Solid (SS)		
<b>Action &amp; Limit Levels</b>	<b>Action Level</b>		<b>Limit Level</b>
	> 5.0 mg/L		> 6.0 mg/L
<b>Measurement Level</b>	<b>Impact Station(s) of Exceedance</b>	<b>Control Stations</b>	<b>Impact Station(s) without Exceedance</b>
	6.9 mg/L (WSR 3) 5.8 mg/L (WSR 33) 5.3 mg/L (WSR 37)	2.9 mg/L (CE) 3.1 mg/L (CF)	3.3 mg/L (WSR1) 2.6 mg/L (WSR 2) 3.1 mg/L (WSR 4) 4.1 mg/L (WSR16) 4.8 mg/L (WSR 36)
<b>Possible reason for Action or Limit Level Non-compliance</b>	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) plant/ equipment mobilisation for later shotcreting work inside the caisson.</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 10 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1(Outfall Shaft)</li> </ul>		

	<p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p> <p>Station WSR3 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR3 (6.9mg/L). According to the construction work schedule provided by Main Contractor, dewatering of unpolluted ingress seawater in caisson was conducted at WSR37 (Outfall Shaft), however no marine construction work was conducted at Outfall Shaft, it would be expected that the dewatering of unpolluted ingress seawater in caisson would generate limited SS of this activity.</p> <p>No marine construction activity was schedule at WSR36 (Intake Shaft) on 10 February 2022 but SS exceedance was observed at WSR33, the SS level at an upstream station WSR36 (4.8mg/L) was lower than WSR33 (5.8mg/L), where dewatering of unpolluted ingress seawater in caisson was conducted at WSR37. In view of the inverse relation between distance to marine works and SS level, the SS exceedance is concluded not project related.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 10 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 10 February 2022.</p>
<p>Remarks</p>	<p>Current direction during mid-flood sampling on 10 February 2022:</p> 

Current direction during mid-ebb sampling on 10 February 2022:



Legend			
Speed (knot)		Speed (knot)	
0-0.5	→	1.5-2.0	→
0.5-1.0	→	2.0-2.5	→
1.0-1.5	→	2.5 and above	→

(Sourced from <http://current.hydro.gov.hk/en/map.html>)



Supporting Photo 1 (Sea Conditions at WSR1)



Supporting Photo 2 (Sea Conditions at WSR2)



Supporting Photo 3 (Sea Conditions at WSR3)



Supporting Photo 4 (Sea Conditions at WSR33)



Supporting Photo 5 (Sea Conditions at WSR37)



Supporting Photo 6 (Sea Conditions at CF)




Supporting Photo 7 (Sea Conditions at CE)



Supporting Photo 8 (Sea Conditions at Intake Shaft Area)



	<p>Supporting Photo 5 (Sea Conditions at Outfall Shaft Area)</p>  <p>10/02/2022</p>
Prepared by	Howard Chan

Date	25 February 2022
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**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	12 February 2022 (Lab result received on 19 February 2022)		
Time	08:12-11:42 (Mid-Flood) and 18:17-19:00 (Mid-Ebb)		
<b>Mid-Ebb</b>			
Monitoring Location	<p>WSR2</p> <p>The map shows the Tseung Kwan O area with various monitoring stations (WSR1-37) and intake/outfall shafts (NF1-3, CE, CF). WSR2 is highlighted with a red circle. The map also shows geographical features like Clear Water Bay, Tai Tam, and Tung Lung Chau, along with the Tseung Kwan O Channel and Big Wave Bay. A key identifies symbols for Water Quality Monitoring Stations, Earmarked Sites for Desalination Plants, Study areas for slope mitigation works, Indicative Locations of Seawater Intake, and Indicative Locations of Submarine Outfall. A scale bar indicates 0 to 2 Kilometres.</p>		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 12.4 mg/L		> 13.4 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	17.0 mg/L (WSR 2)	10.3 mg/L (CE) 3.3 mg/L (CF)	6.3 mg/L (WSR1) 12.3 mg/L (WSR 3) 4.0 mg/L (WSR 4) 5.7 mg/L (WSR 16) 3.2 mg/L (WSR 33) 7.2 mg/L (WSR 36) 2.5 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson, 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place.</p> <p>Intake Shaft Area: marine construction activity, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson.</p> <p>Marine vessels on 12 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• N/A (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p>		

Station WSR2 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR2 (17.0mg/L).

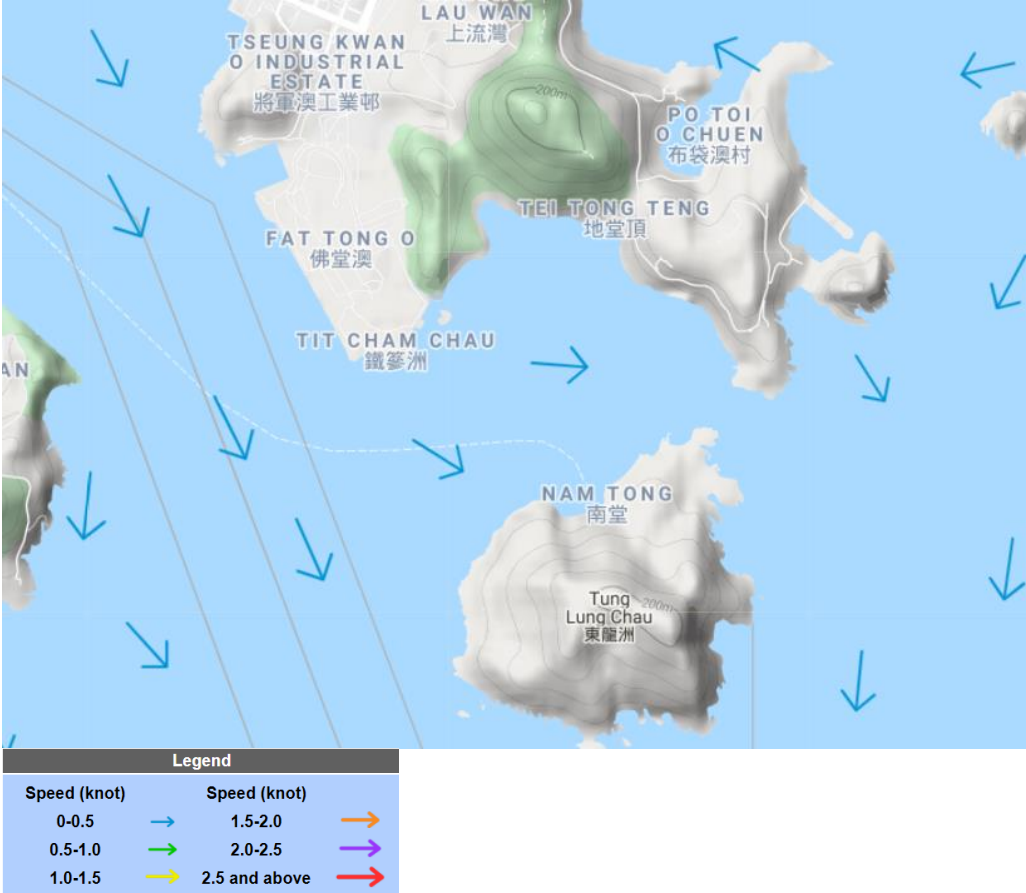
With reference to the work schedule provided by the Contractor, marine construction works were conducted at WSR37 (Outfall Shaft). No SS exceedances were however observed at WSR36 (7.2mg/L) and WSR37 (2.5mg/L). In view of the inverse relation between distance to marine construction works and SS level, the SS exceedance is concluded not project relevant.

According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 12 February 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 12 February 2022.

Remarks

Current direction during mid-flood sampling on 12 February 2022:



The map displays the Tseung Kwan O area, including islands such as Lau Wan, Fat Tong O, Tit Cham Chau, Nam Tong, and Tung Lung Chau. Blue arrows indicate the direction of currents during mid-flood sampling on 12 February 2022. The legend below the map defines the speed of these currents in knots, with colors corresponding to different speed ranges: 0-0.5 (light blue), 0.5-1.0 (green), 1.0-1.5 (yellow), 1.5-2.0 (orange), 2.0-2.5 (purple), and 2.5 and above (red).

Legend	
Speed (knot)	Speed (knot)
0-0.5	1.5-2.0
0.5-1.0	2.0-2.5
1.0-1.5	2.5 and above

(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at CF)



Supporting Photo 2 (Sea Conditions at CE)





Supporting Photo 3 (Sea Conditions at Intake Shaft Area)



Supporting Photo 4 (Sea Conditions at Outfall Shaft Area)



Prepared by Howard Chan

Date 25 February 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

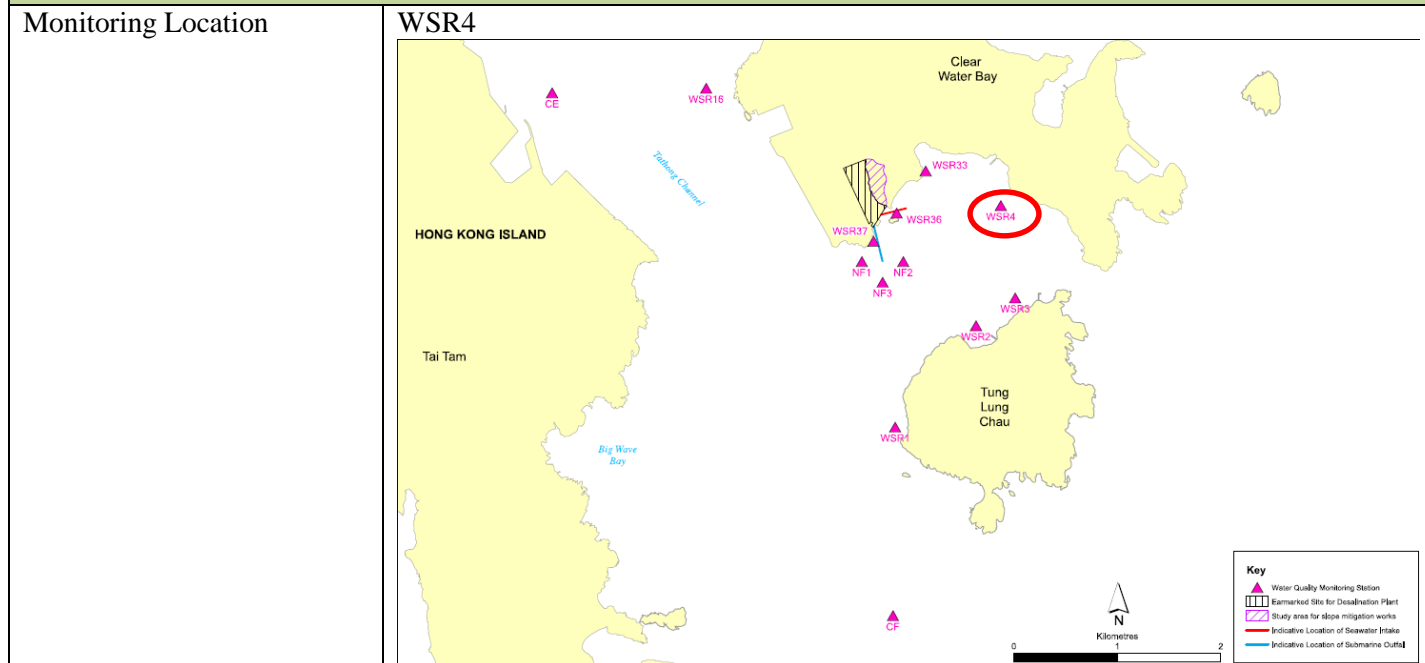
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	15 February 2022 (Lab result received on 22 February 2022)		
Time	14:03-17:33 (Mid-Flood) and 09:15-12:21 (Mid-Ebb)		
<b>Mid-Flood</b>			
Monitoring Location	WSR4, WSR33, WSR36		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.0 mg/L		> 6.0 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	6.3 mg/L (WSR 4) 7.3 mg/L (WSR 33) 8.3 mg/L (WSR 36)	3.1 mg/L (CE) 3.3 mg/L (CF)	3.2 mg/L (WSR1) 2.8 mg/L (WSR 2) 4.7 mg/L (WSR 3) 3.2 mg/L (WSR 16) 3.1 mg/L (WSR 37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place.</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson.</p> <p>Marine vessels on 15 February 2022:</p> <ul style="list-style-type: none"> <li>N/A (Intake Shaft)</li> <li>Derrick barge x 1; mini-backhoe x1; (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p>		

Station WSR4 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR4 (6.3 mg/L). No marine construction works was conducted at WSR36 (Intake Shaft). SS exceedances were observed at WSR33 (7.3mg/L) and WSR 36 (8.3mg/L). Although marine construction works with contact with water was noted at WSR37 (Outfall Shaft), however no SS exceedance was recorded at WSR37 (3.1mg/L). WSR 33 and WSR 36 were located upstream during mid-flood tide but SS exceedances were observed and higher than the downstream station WSR37, where marine construction works with contact with water were conducted. In view of the inverse relation between distance to marine construction works and SS level, the SS exceedance is concluded non-project related.

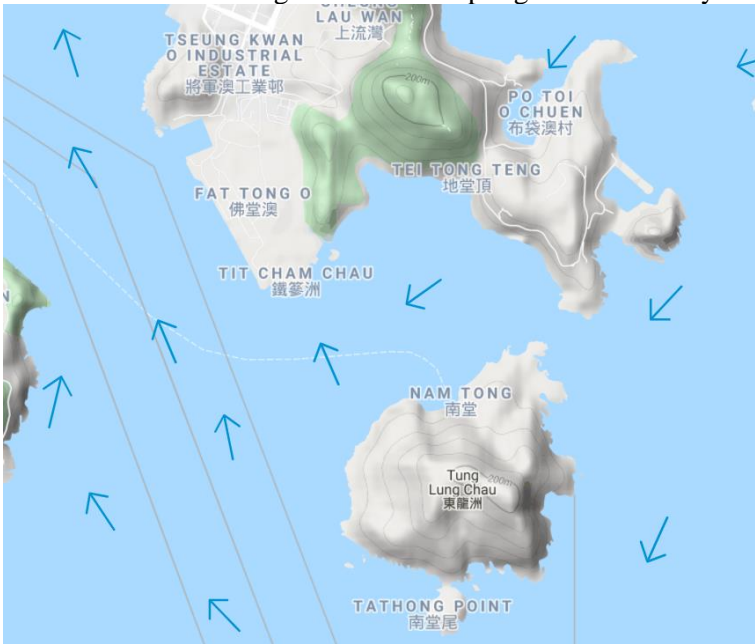
According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 15 February 2022.

Conditions of the protective silt curtain at the inland water outfall was satisfactory on 15 February 2022.

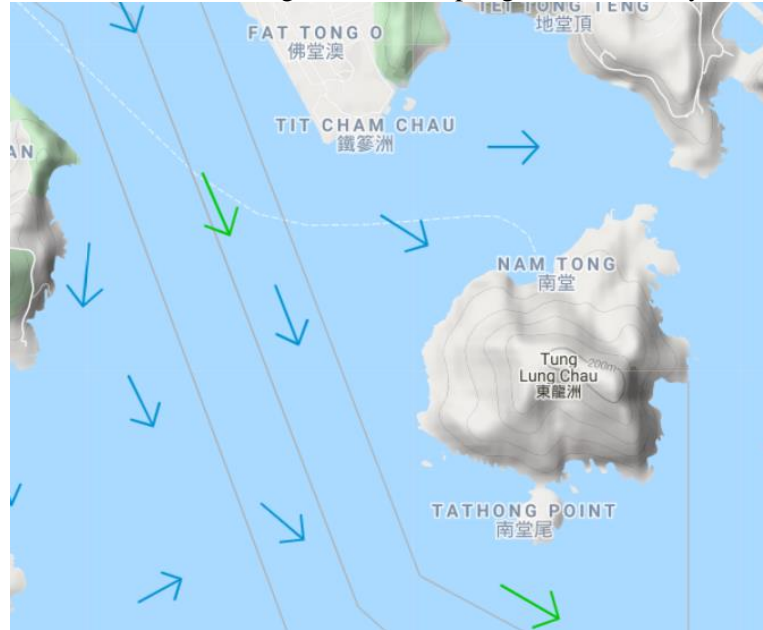
**Mid-Ebb**



<b>Parameter</b>	<b>Suspended Solid (SS)</b>		
<b>Action &amp; Limit Levels</b>	<b>Action Level</b>		<b>Limit Level</b>
	> 8.2 mg/L		> 8.9 mg/L
<b>Measurement Level</b>	<b>Impact Station(s) of Exceedance</b>	<b>Control Stations</b>	<b>Impact Station(s) without Exceedance</b>
	13.3 mg/L (WSR 4)	6.8 mg/L (CE) 15.2 mg/L (CF)	6.0 mg/L (WSR1) 4.3 mg/L (WSR 2) 4.8 mg/L (WSR 3) 4.0 mg/L (WSR16) 4.2 mg/L (WSR 33) 5.2 mg/L (WSR 36) 4.0 mg/L (WSR 37)
<b>Possible reason for Action or Limit Level Non-compliance</b>	<p><b>Outfall Shaft Area:</b> marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place.</p> <p><b>Intake Shaft Area:</b> marine construction activities, namely 1) N/A</p>		

	<p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson.</p> <p>Marine vessels on 15 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1; mini-backhoe x1; (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p> <p>Station WSR4 was located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR4 (13.3mg/L). No SS exceedance were noted at WSR36 (5.2mg/L) and WSR37 (4.0mg/L), where marine construction activities were conducted at WSR37 (Outfall Shaft). In view of the inverse relation between distance to marine construction works and SS level, the SS exceedance is concluded not project related.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 15 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 15 February 2022.</p>
<p>Remarks</p>	<p>Current direction during mid-flood sampling on 15 February 2022:</p> 

Current direction during mid-ebb sampling on 15 February 2022:



Legend	
Speed (knot)	Speed (knot)
0-0.5	→
0.5-1.0	→
1.0-1.5	→
1.5-2.0	→
2.0-2.5	→
2.5 and above	→

(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at WSR4)



Supporting Photo 2 (Sea Conditions at WSR33)



Supporting Photo 3 (Sea Conditions at WSR36)



Supporting Photo 4 (Sea Conditions at CF)



Supporting Photo 5 (Sea Conditions at CE)



Supporting Photo 6 (Sea Conditions at Intake Shaft Area)







Prepared by	Howard Chan
Date	25 February 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	17 February 2022 (Lab result received on 23 February 2022)		
Time	15:53-19:00 (Mid-Flood) and 10:16-13:46 (Mid-Ebb)		
Mid-Flood			
Monitoring Location	WSR1, WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.8 mg/L		> 6.3 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	7.3 mg/L (WSR1) 14.8 mg/L (WSR2) 13.7 mg/L (WSR3) 16.7 mg/L (WSR4) 15.8 mg/L (WSR16) 10.3 mg/L (WSR33) 6.0 mg/L (WSR36) 8.0 mg/L (WSR37)	7.8 mg/L (CE) 4.8 mg/L (CF)	
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place 3) tug boat assisted material transport from CEDD pier.</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson</p> <p>Marine vessels on 17 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1; mini-backhoe x 1 inside the caisson; tug boat x 1 (Outfall Shaft)</li> </ul>		

	<p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p> <p>Station WSR1, WSR2, WSR3 WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR1 (7.3mg/L), WSR2 (14.8mg/L), WSR3 (13.7mg/L), WSR4(16.7mg/L) and WSR16 (15.8mg/L).</p> <p>According to the construction work schedule provided by Main Contractor, marine construction works were conducted at WSR37 (Outfall Shaft). No marine construction work was conducted at WSR36 (Intake Shaft) as referring to construction works schedule provided by Contractor. SS exceedance was observed at WSR36 (6.0mg/L) WSR37 (8.0mg/L).</p> <p>According to Hong Kong Observatory Daily Rainfall record on 17 February 2022, rainfall was recorded at Tseung Kwon O, the rainfall may lead to release of SS content form the soil of the nearby lands (e.g. Country park, fill bank). The SS data during mid-flood tide suggested unstable weather conditions may be the dominating factors of elevated SS value of which all monitoring have exceeded the Action and Limit Level on 17 February 2022.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 17 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 17 February 2022.</p>
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Mid-Ebb			
Monitoring Location	WSR2, WSR3, WSR4, WSR16 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level	Limit Level	
	> 18.0 mg/L	> 19.5 mg/L	
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	19.8 mg/L (WSR2) 18.5 mg/L (WSR3) 19.3 mg/L (WSR4) 18.3 mg/L (WSR16)	15.0 mg/L (CE) 18.0 mg/L (CF)	17.0 mg/L (WSR1) 11.2 mg/L (WSR33) 13.3 mg/L (WSR36) 10.2 mg/L (WSR37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place 3) tug boat assisted material transport from CEDD pier.</p> <p>Intake Shaft Area: marine construction activities, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson</p> <p>Marine vessels on 17 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1; mini-backhoe x 1 inside the caisson; tug boat x 1 (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p> <p>Station WSR2, WS3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedance was however observed at WSR2 (19.8mg/L), WSR3 (18.5mg/L), WSR4 (19.3mg/L) and WSR16 (18.3mg/L).</p> <p>According to the construction work schedule provided by Main Contractor, marine construction works were conducted at WSR37 (Outfall Shaft). No marine construction</p>		

work was conducted at WSR36 (Intake Shaft). No SS exceedance was observed at WSR36 (13.3mg/L) WSR37 (10.2mg/L).

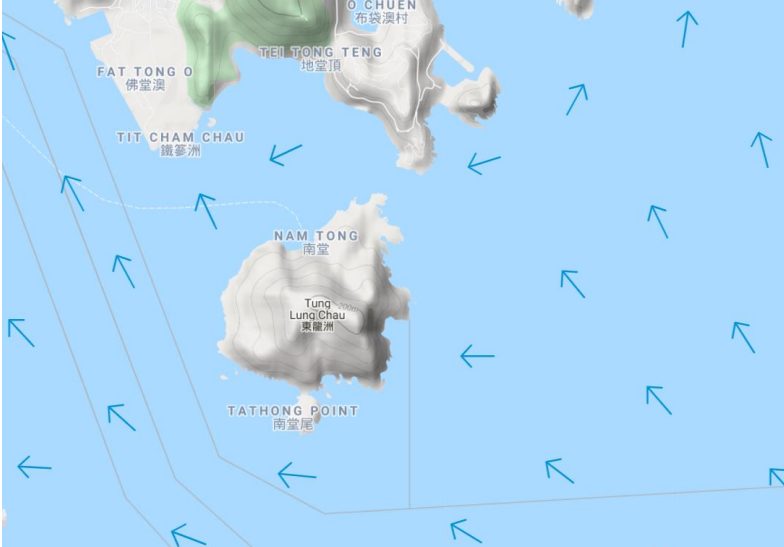
According to Hong Kong observatory Daily Rainfall record on 17 February 2022, rainfall was recorded at Tseung Kwon O, the rainfall may lead to release of SS content form the soil of the nearby lands (e.g. Country park, fill bank). The SS data during mid-ebb tide suggested unstable weather conditions may be the dominating factors of elevated SS value of which monitoring stations WSR2, WS3, WSR4 and WSR16 have exceeded the Action and Limit Level on 17 February 2022.

According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 17 February 2022.

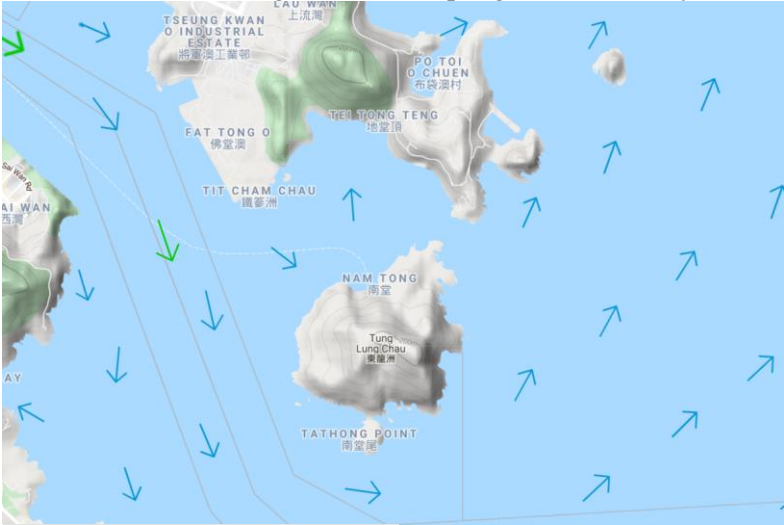
Conditions of the protective silt curtain at the inland water outfall was satisfactory on 17 February 2022.

Remarks

Current direction during mid-flood sampling on 17 February 2022:



Current direction during mid-ebb sampling on 17 February 2022:



Legend			
Speed (knot)	→	Speed (knot)	→
0-0.5	→	1.5-2.0	→
0.5-1.0	→	2.0-2.5	→
1.0-1.5	→	2.5 and above	→

(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at WSR1)



Supporting Photo 2 (Sea Conditions at WSR2)



Supporting Photo 3 (Sea Conditions at WSR3)



Supporting Photo 4 (Sea Conditions at WSR4)



Supporting Photo 5 (Sea Conditions at WSR16)



Supporting Photo 6 (Sea Conditions at WSR33)





Supporting Photo 7 (Sea Conditions at WSR36)



Supporting Photo 8 (Sea Conditions at WSR37)



Supporting Photo 9 (Sea Conditions at CF)



Supporting Photo 10 (Sea Conditions at CE)



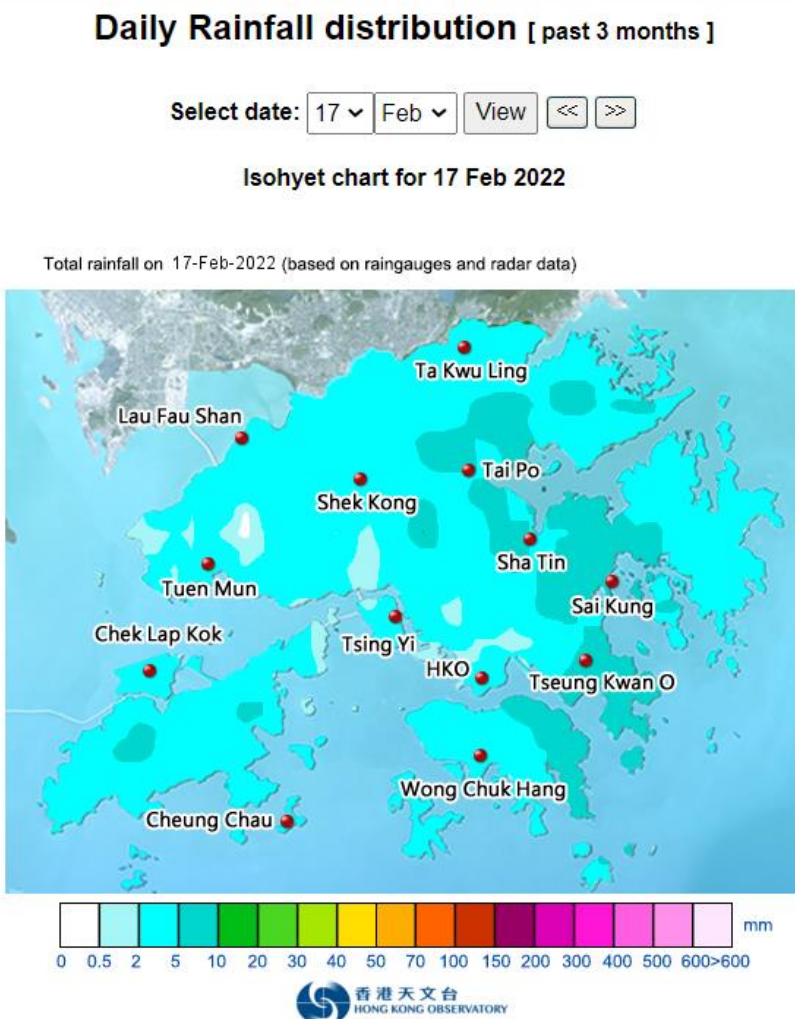
Supporting Photo 11 (Sea Conditions at Intake Shaft Area)



Supporting Photo 12 (Sea Conditions at Outfall Shaft Area)



Supporting Photo 13 (Hong Kong observatory Rainfall Record on 17 February 2022)



Prepared by Howard Chan

Date 25 February 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	19 February 2022 (Lab result received on 25 February 2022)		
Time	08:00-12:12 (Mid-Flood) and 17:32-19:00 (Mid-Ebb)		
<b>Mid-Flood</b>			
Monitoring Location	WSR2, WSR3, WSR4, WSR16, WSR33, WSR36, WSR37		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.4 mg/L		> 6.0 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	7.0 mg/L (WSR2) 5.8 mg/L (WSR3) 10.2 mg/L (WSR4) 6.8 mg/L (WSR16) 6.2 mg/L (WSR33) 9.2 mg/L (WSR36) 10.9 mg/L (WSR37)	4.2 mg/L (CE) 4.5 mg/L (CF)	4.2 mg/L (WSR1)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place</p> <p>Intake Shaft Area: marine construction activity, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson.</p> <p>Marine vessels on 19 February 2022:</p> <ul style="list-style-type: none"> <li>N/A (Intake Shaft)</li> <li>Derrick barge x 1; mini-backhoe x 1 inside the caisson; tug boat x 1 (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Southeast to Northwest at waters to the west side of Tit Cham Chau; and from Northeast to Southwest at waters to the east side of Tit Cham Chau.</p>		

	<p>Station WSR2, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR2 (7.0mg/L), WSR3 (5.8mg/L), WSR4(10.2mg/L) and WSR16 (6.8mg/L).</p> <p>According to the construction work schedule provided by Main Contractor, marine construction works were conducted at WSR37 (Outfall Shaft). No marine construction work was conducted at WSR36 (Intake Shaft) as referring to construction work schedule provided by Contractor. SS exceedance was observed at WSR36 (9.2mg/L) and WSR37 (10.9mg/L).</p> <p>According to Hong Kong Observatory Daily Rainfall record on 19 February 2022, rainfall was recorded at Tseung Kwon O, the rainfall may lead to release of SS content from the soil of the nearby lands (e.g. Country park, fill bank). The SS data during mid-flood tide suggested unstable weather conditions may be the dominating factors of elevated SS values of which monitoring stations WSR2, WSR3 WSR4, WSR16, WSR33, WSR36 and WSR37 have exceeded the Action and Limit Level on 19 February 2022.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 19 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 19 February 2022.</p>
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work was conducted at WSR36 (Intake Shaft). However, SS exceedance was observed at WSR36 (18.3mg/L). No SS exceedance was observed at WSR37 (10.2mg/L).

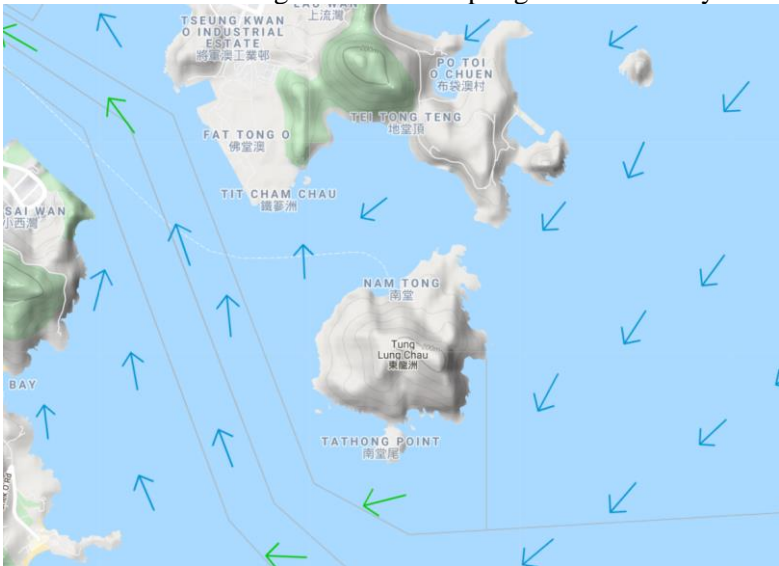
According to Hong Kong observatory Daily Rainfall record on 19 February 2022, rainfall was recorded at Tseung Kwan O, the rainfall may lead to release of SS content form the soil of the nearby lands (e.g. Country park, fill bank). The SS data during mid-ebb tide suggested unstable weather conditions may be the dominating factors of elevated SS value of which monitoring stations WSR2, WSR4, WSR16 and WSR36 have exceeded the Action and Limit Level on 19 February 2022.

According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 19 February 2022.

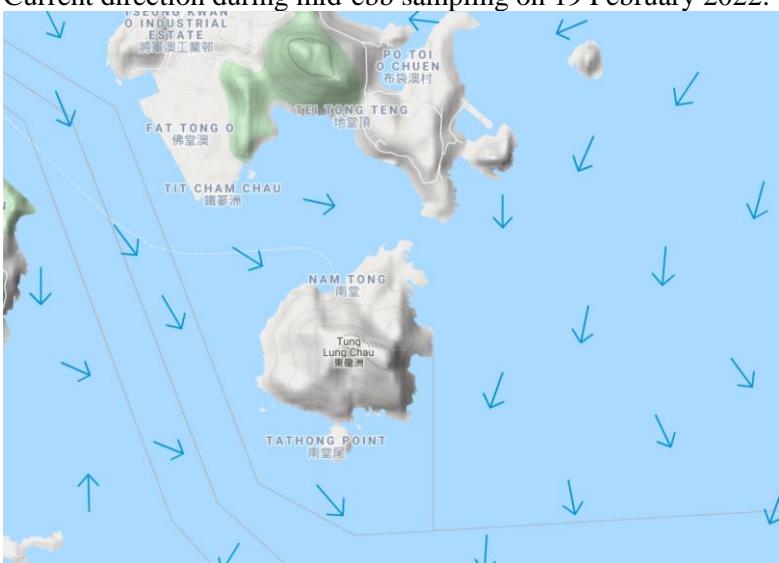
Conditions of the protective silt curtain at the inland water outfall was satisfactory on 19 February 2022.

Remarks

Current direction during mid-flood sampling on 19 February 2022:



Current direction during mid-ebb sampling on 19 February 2022:



Legend	
Speed (knot)	Speed (knot)
0-0.5	1.5-2.0
0.5-1.0	2.0-2.5
1.0-1.5	2.5 and above

(Sourced from <http://current.hydro.gov.hk/en/map.html>)



Supporting Photo 1 (Sea Conditions at WSR2)



Supporting Photo 2 (Sea Conditions at WSR3)



Supporting Photo 3 (Sea Conditions at WSR4)



Supporting Photo 4 (Sea Conditions at WSR16)



Supporting Photo 5 (Sea Conditions at WSR33)



Supporting Photo 6 (Sea Conditions at WSR36)



Supporting Photo 7 (Sea Conditions at WSR37)



Supporting Photo 8 (Sea Conditions at CF)



Supporting Photo 9 (Sea Conditions at CE)



Supporting Photo 10 (Sea Conditions at Intake Shaft Area)

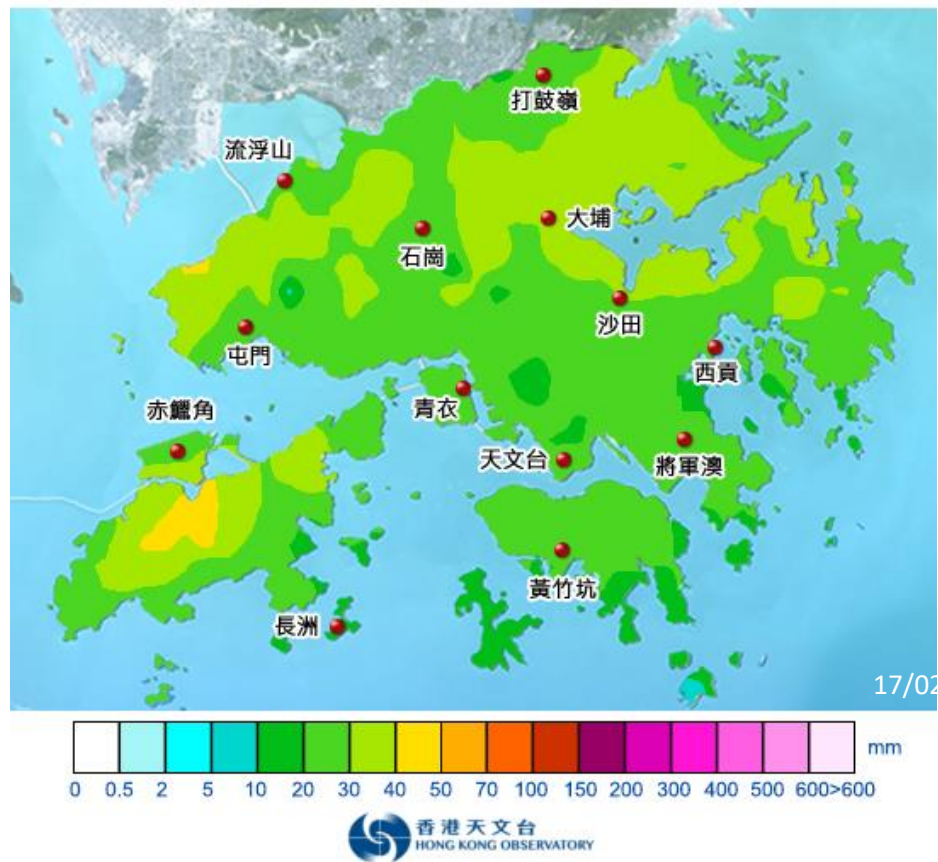


Supporting Photo 11 (Sea Conditions at Outfall Shaft Area)



Supporting Photo 12 (Hong Kong observatory Rainfall Record on 19 February 2022)

2022年2月19日的總雨量(基於雨量計及雷達數據)



Prepared by Howard Chan

Date 2 March 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

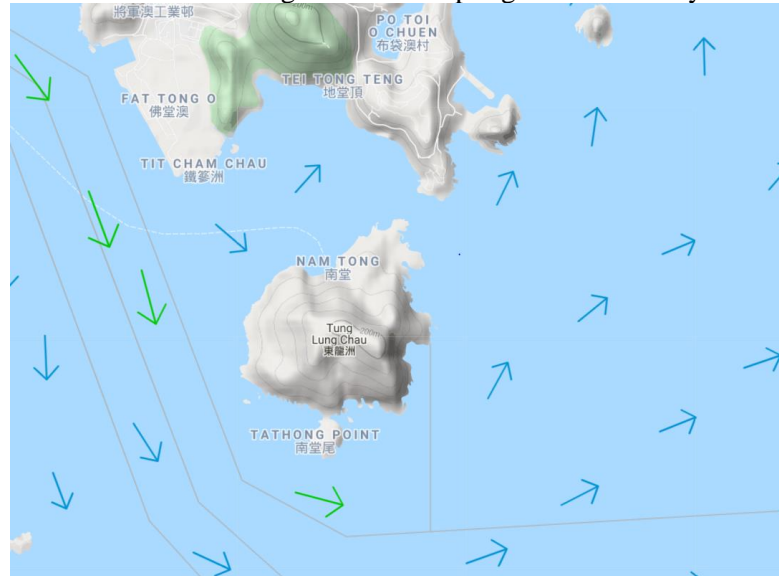
Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	22 February 2022 (Lab result received on 28 February 2022)		
Time	08:18-11:48 (Mid-Flood) and 14:32-18:02 (Mid-Ebb)		
Mid-ebb			
Monitoring Location	WSR2, WSR3, WSR4, WSR16, WSR36, WSR37		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 6.2 mg/L		> 6.7 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	9.2 mg/L (WSR2) 14.3 mg/L (WSR3) 8.8 mg/L (WSR4) 8.7 mg/L (WSR16) 7.7 mg/L (WSR36) 7.2 mg/L (WSR37)	5.2 mg/L (CE) 7.8 mg/L (CF)	5.3 mg/L (WSR1) 4.5 mg/L (WSR33)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge supporting dewatering of unpolluted ingress seawater in caisson 2) rock breaking work inside the caisson. Silt curtain completely enclosing the caisson in place</p> <p>Intake Shaft Area: marine construction activity, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) rock breaking work inside the caisson.</p> <p>Marine vessels on 22 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1; mini-backhoe x 1 inside the caisson; tug boat x 1 (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from Southwest to Northeast at waters to the east side of Tit Cham Chau.</p>		

	<p>Station WSR2, WSR3, WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities was considered limited. SS exceedances were however observed at WSR2 (9.2mg/L), WSR3 (14.3mg/L), WSR4(8.8mg/L) and WSR16 (8.7mg/L).</p> <p>According to the construction work schedule provided by Main Contractor, marine construction works were conducted at WSR37 (Outfall Shaft). No marine construction work was conducted at WSR36 (Intake Shaft) as referring to construction work schedule provided by Contractor. SS exceedances were observed at WSR36 (7.7mg/L) and WSR37 (7.2mg/L).</p> <p>According to Hong Kong Observatory Daily Rainfall record on 22 February 2022, rainfall was recorded at Tseung Kwon O, the rainfall may lead to release of SS content form the soil of the nearby lands (e.g. Country park, fill bank). The SS data during mid-ebb tide suggested unstable weather conditions may be the dominating factors of elevated SS values of which monitoring stations WSR2, WSR3 WSR4, WSR16, WSR36 and WSR37 have exceeded the Action and Limit Level on 22 February 2022.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 22 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 22 February 2022.</p>
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Remarks

Current direction during mid-ebb sampling on 22 February 2022:



(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at WSR2)



Supporting Photo 2 (Sea Conditions at WSR3)



Supporting Photo 3 (Sea Conditions at WSR4)



Supporting Photo 4 (Sea Conditions at WSR16)



Supporting Photo 5 (Sea Conditions at WSR36)



Supporting Photo 6 (Sea Conditions at WSR37)



Supporting Photo 7 (Sea Conditions at CF)



Supporting Photo 8 (Sea Conditions at CE)



Supporting Photo 9 (Sea Conditions at Intake Shaft Area)

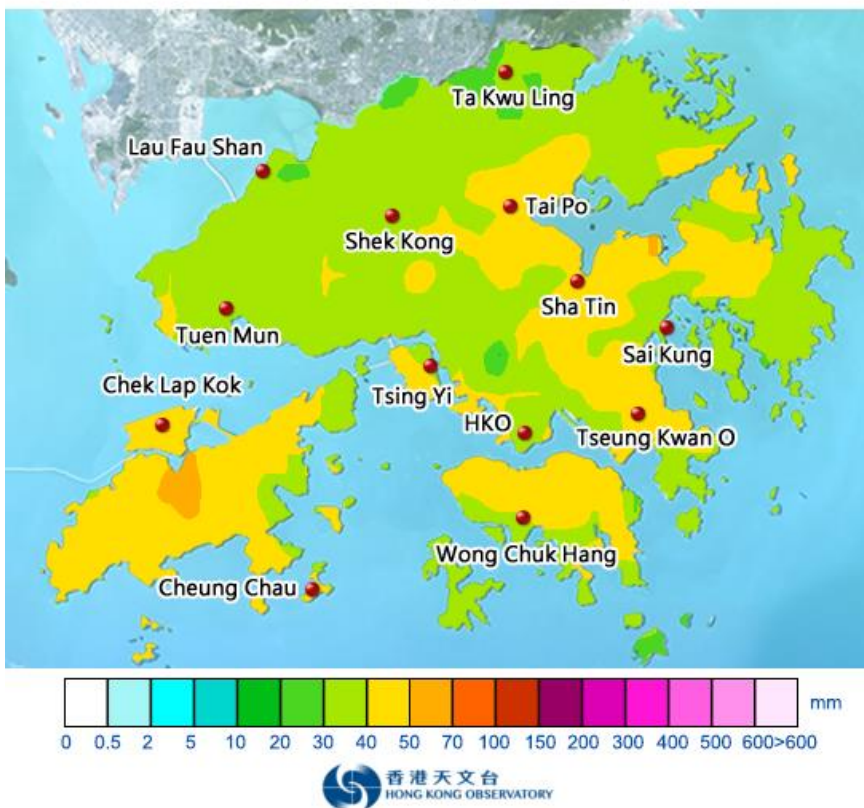


Supporting Photo 10 (Sea Conditions at Outfall Shaft Area)



Supporting Photo 11 (Hong Kong observatory Rainfall Record on 22 February 2022)

Total rainfall on 22-Feb-2022 (based on raingauges and radar data)



Prepared by Howard Chan

Date 3 March 2022

**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	24 February 2022 (Lab result received on 2 March 2022)		
Time	09:48-13:18 (Mid-Flood) and 15:27-18:57 (Mid-Ebb)		
Mid-ebb			
Monitoring Location	WSR4, WSR16, WSR33, WSR36		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.6 mg/L		> 6.1 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	6.8 mg/L (WSR4) 5.7 mg/L (WSR16) 5.8 mg/L (WSR33) 6.5 mg/L (WSR36)	4.2 mg/L (CE) 4.3 mg/L (CF)	4.7 mg/L (WSR1) 4.2 mg/L (WSR2) 4.8 mg/L (WSR3) 5.0 mg/L (WSR37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) derrick barge assisted material unloading, no dewatering because pump line failure, awaiting repair 2) tug boat for material transport</p> <p>Intake Shaft Area: marine construction activity, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) N/A</p> <p>Marine vessels on 24 February 2022:</p> <ul style="list-style-type: none"> <li>N/A (Intake Shaft)</li> <li>Derrick barge x 1; tug boat x 1 (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p> <p>Stations WSR4 and WSR16 were located distant from the construction site and the possibility of being affected by marine construction activities were considered limited. SS exceedances were however observed at WSR4 (6.8mg/L) and WSR16 (5.7mg/L).</p>		

	<p>According to the construction work schedule provided by Main Contractor, no marine construction work with contact with water were conducted at WSR36 (Intake Shaft) and WSR37 (Outfall Shaft). SS exceedances were observed at WSR36 (6.5mg/L). Hence, the observed SS exceedances at WSR36 (6.5mg/L) and WSR33 (5.8mg/L) maybe caused by other natural factors.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 24 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 24 February 2022.</p>
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Remarks

Current direction during mid-ebb sampling on 24 February 2022:



Legend			
Speed (knot)		Speed (knot)	
0-0.5	→	1.5-2.0	→
0.5-1.0	→	2.0-2.5	→
1.0-1.5	→	2.5 and above	→

(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at WSR4)



Supporting Photo 2 (Sea Conditions at WSR16)



Supporting Photo 3 (Sea Conditions at WSR33)



Supporting Photo 4 (Sea Conditions at WSR36)



Supporting Photo 5 (Sea Conditions at CF)




Supporting Photo 6 (Sea Conditions at CE)

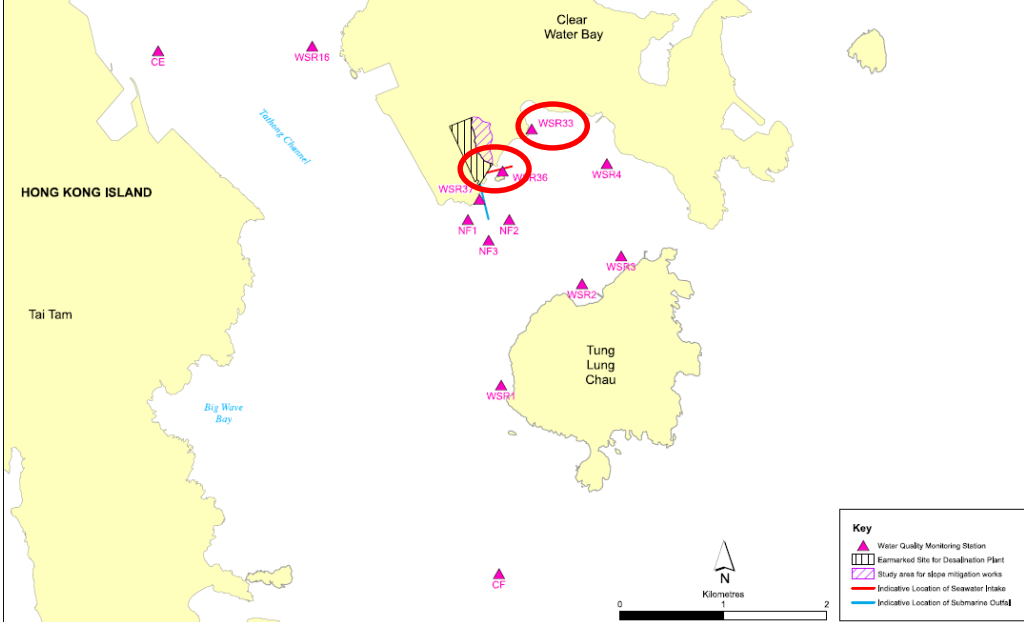


Supporting Photo 7 (Sea Conditions at Intake Shaft Area)



	<p>Supporting Photo 8 (Sea Conditions at Outfall Shaft Area)</p>  <p>24/02/2022</p>
Prepared by	Howard Chan
Date	4 March 2022

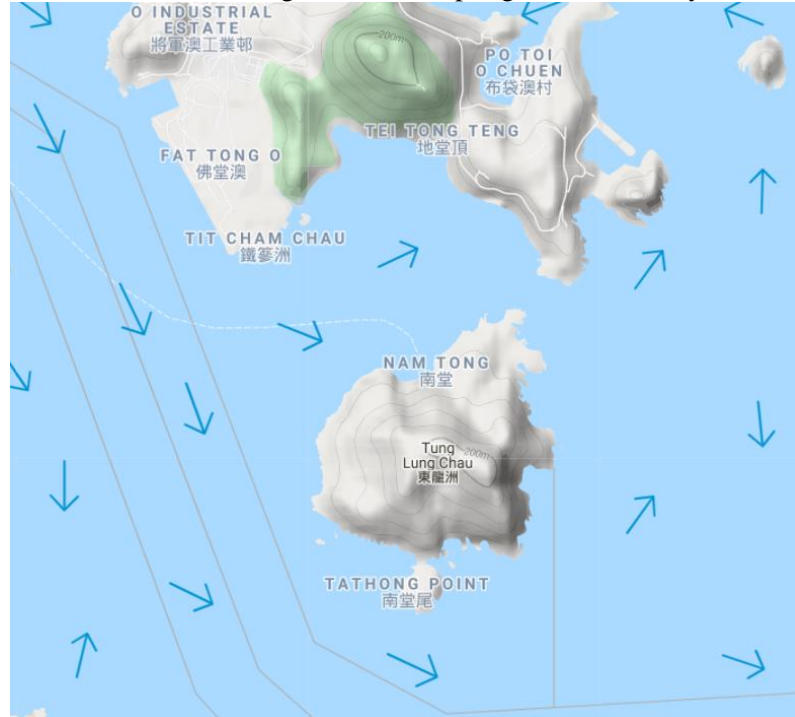
**Incident Report on Action Level or Limit Level Non-Compliance**

Project	Design, Build and Operate First Stage of Tseung Kwan O Desalination Plant		
Date	26 February 2022 (Lab result received on 4 March 2022)		
Time	08:00-10:39 (Mid-Flood) and 17:32-19:00 (Mid-Ebb)		
<b>Mid-ebb</b>			
Monitoring Location	WSR33, WSR36 		
Parameter	Suspended Solid (SS)		
Action & Limit Levels	Action Level		Limit Level
	> 5.0 mg/L		> 6.0 mg/L
Measurement Level	Impact Station(s) of Exceedance	Control Stations	Impact Station(s) without Exceedance
	5.2 mg/L (WSR33) 5.5 mg/L (WSR36)	4.2 mg/L (CE) 4.3 mg/L (CF)	4.3 mg/L (WSR1) 3.5 mg/L (WSR2) 4.8 mg/L (WSR3) 4.5 mg/L (WSR4) 4.0 mg/L (WSR16) 4.2 mg/L (WSR37)
Possible reason for Action or Limit Level Non-compliance	<p>Outfall Shaft Area: marine construction activities, namely 1) Derrick barge assisted to mobilize materials preparing for Blinding layer concreting 2) Derrick barge assisted to concrete the Blinding layer inside the caisson. Silt curtain completely enclosing the caisson in place</p> <p>Intake Shaft Area: marine construction activity, namely 1) N/A</p> <p>Marine construction activities with contact with water: 1) Derrick barge assisted to concrete the Blinding layer inside the caisson. Silt curtain completely enclosing the caisson in place</p> <p>Marine vessels on 26 February 2022:</p> <ul style="list-style-type: none"> <li>• N/A (Intake Shaft)</li> <li>• Derrick barge x 1 (Outfall Shaft)</li> </ul> <p>Dominating sea current direction was found to be from Northwest to Southeast at waters to the west side of Tit Cham Chau; and from West to East at waters to the east side of Tit Cham Chau.</p>		

	<p>According to the construction work schedule provided by Main Contractor, no marine construction work with contact with water was conducted at WSR36 (Intake Shaft) on 26 February 2022. SS exceedances were observed at WSR36 (5.5mg/L). Although concrete the Blinding layer inside the caisson was conducted at WSR37 (Outfall shaft) on 26 February 2022, the SS level at WSR37 (4.2mg/L) was lower than WSR36 (5.5mg/L), where WSR36 was located downstream during mid-ebb tide, which would be expected no cause of SS exceedance by the construction works at WSR37 (Outfall Shaft). WSR33 was also located downstream during mid-ebb tide, but the SS level at WSR33 (5.2mg/L) was similar to that at WSR36 (5.5mg/L). the observed SS exceedances maybe caused by other natural factors.</p> <p>According to the field observation by sampling team during sampling event, no silt plume was observed at the Contract site on 26 February 2022.</p> <p>Conditions of the protective silt curtain at the inland water outfall was satisfactory on 26 February 2022.</p>
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Remarks

Current direction during mid-ebb sampling on 26 February 2022:



(Sourced from <http://current.hydro.gov.hk/en/map.html>)

Supporting Photo 1 (Sea Conditions at WSR33)





Supporting Photo 2 (Sea Conditions at WSR36)



Supporting Photo 3 (Sea Conditions at CF)




Supporting Photo 4 (Sea Conditions at CE)



Supporting Photo 5 (Sea Conditions at Intake Shaft Area)



	<p>Supporting Photo 6 (Sea Conditions at Outfall Shaft Area)</p>  <p>26/02/2022</p>
Prepared by	Howard Chan
Date	7 March 2022