

**Capco** 青山發電有限公司  
Castle Peak Power Co. Ltd.

 **港燈**  
HK Electric

 **HKLTL**

## Hong Kong Offshore LNG Terminal Project

Monthly Environmental Monitoring and Audit (EM&A) Report for January 2021

9 February 2021

Project No.: 0505354

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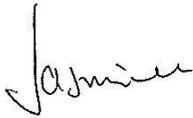
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## Signature Page

9 February 2021

# Hong Kong Offshore LNG Terminal Project

Monthly Environmental Monitoring and Audit (EM&A) Report for January 2021



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Dr Jasmine Ng  
Partner

ERM-Hong Kong, Limited  
2509, 25/F One Harbourfront  
18 Tak Fung Street  
Hunghom  
Kowloon  
Hong Kong

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Castle Peak Power Co. Ltd.



港燈  
HK Electric



**Hong Kong Offshore LNG Terminal  
Environmental Certification Sheet**  
**FEP-01/558/2018/A, FEP-02/558/2018/A and FEP-03/558/2018/A**

**Reference Document/Plan**

Document/ <del>Plan</del> to be Certified/ <del>Verified</del> :	Monthly Environmental Monitoring and Audit (EM&A) Report for January 2021
Date of Report:	9 February 2021
Date prepared by ET:	9 February 2021
Date received by IEC:	9 February 2021

**Reference EP Requirement**

EP Condition:	Condition No. 5.4 of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A
Content:	<i>Monthly EM&amp;A Report</i>
The Permit Holder shall submit 3 hard copies and 1 electronic copy of Monthly EM&A Reports to the Director, within 2 weeks after the end of the reporting month.	

**ET Certification**

I hereby certify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A.	
Mr Raymond Chow, Environmental Team Leader:	 Date: 10 February 2021

**IEC Verification**

I hereby verify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A.	
Mr Arthur Lo, Independent Environmental Checker:	 Date: 10 February 2021

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## EXECUTIVE SUMMARY

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS). To demarcate the works between different parties, the following Further Environmental Permits (FEPs) were issued for the Project:

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) – construction commenced on 27 November 2020;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018/A) – construction commenced on 23 September 2020; and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018/A) – construction commenced on 13 December 2020.

This is the Monthly EM&A Report presenting the EM&A works carried out during the period from 1 to 31 January 2021 for the Project in accordance with the Updated EM&A Manual. A summary of monitoring and audit activities conducted in the reporting period is listed below:

Activities	Number of Sessions
<b><i>For FEP-02/558/2018/A</i></b>	
Marine Water Quality Monitoring	2
Marine Mammal Exclusion Zone Monitoring	During dredging / jetting operations for construction of LPS Pipeline
Environmental Site Inspection	1
<b><i>For FEP-03/558/2018/A</i></b>	
Environmental Site Inspection	3

Environmental auditing works, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan and review of the acceptability of operating speeds and marine travel routes of working vessels were conducted in the reporting period. No non-compliance of environmental statutory requirements was identified.

### Breaches of Action and Limit Levels

There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine mammal in accordance with the Updated EM&A Manual, there were no breaches of Action and Limit Levels for marine mammal monitoring in the reporting period.

### Environmental Complaints, Notification of Summons and Successful Prosecution

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

### Reporting Changes

There were no reporting changes in the reporting period.

### Forecast of Impact Predictions

As informed by the Contractor, construction activities to be undertaken in the next reporting period of February 2021 include the following:

FEP	Land-based Works	Marine-based Works
FEP-01/558/2018/A	<ul style="list-style-type: none"><li>Nil</li></ul>	<ul style="list-style-type: none"><li>Nil</li></ul>
FEP-02/558/2018/A	<ul style="list-style-type: none"><li>Nil</li></ul>	<ul style="list-style-type: none"><li>Pre-trenching; and</li><li>Pipe-laying</li></ul>
FEP-03/558/2018/A	<ul style="list-style-type: none"><li>Excavation for Foundation;</li><li>Construction of reinforced concrete foundation; and</li><li>Underground drainage works</li></ul>	<ul style="list-style-type: none"><li>Nil</li></ul>

Potential environmental impacts arising from the above upcoming construction activities in the next reporting period of February 2021 are mainly associated with dust emission from construction activities and stockpiles, waste management, site surface runoff, wastewater discharge, and elevation in suspended solids and disturbance to marine mammals due to marine-based works.

## 1. INTRODUCTION

### 1.1 Background

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS).

The Environmental Impact Assessment (EIA) Report for the Project was submitted to the Environmental Protection Department (EPD) of the HKSAR Government in May 2018. The EIA Report (EIAO Register No. AEIAR-218/2018) was approved by EPD and the associated Environmental Permit (EP) (EP-558/2018) was issued in October 2018.

An application for Further Environmental Permits (FEP) were made on 24 December 2019 to demarcate the works between the different parties. The following FEPs were issued on 17 January 2020 and the EP under EP-558/2018 was surrendered on 5 March 2020.

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) <sup>(1)</sup> – construction commenced on 27 November 2020;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018/A) <sup>(2)</sup> – construction commenced on 23 September 2020; and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018/A) <sup>(3)</sup> – construction commenced on 13 December 2020.

The location of these components is shown in **Figures 1.1, 1.2** and **1.3**.

### 1.2 Scope of the EM&A Report

This is the Monthly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 31 January 2021 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A).

### 1.3 Organisation Structure

The organisation structure of the Project is shown in **Annex A**. The key personnel and contact details are summarised in **Table 1.1** below.

- 
- (1) Application for variation of an environmental permit for FEP-01/558/2018 was undertaken and the latest FEP (FEP-01/558/2018/A) was issued on 6 November 2020.
  - (2) Application for variation of an environmental permit for FEP-03/558/2018 was undertaken and the latest FEP (FEP-03/558/2018/A) was issued on 22 January 2021.
  - (3) Application for variation of an environmental permit for FEP-02/558/2018 was undertaken and the latest FEP (FEP-02/558/2018/A) was issued on 22 December 2020.

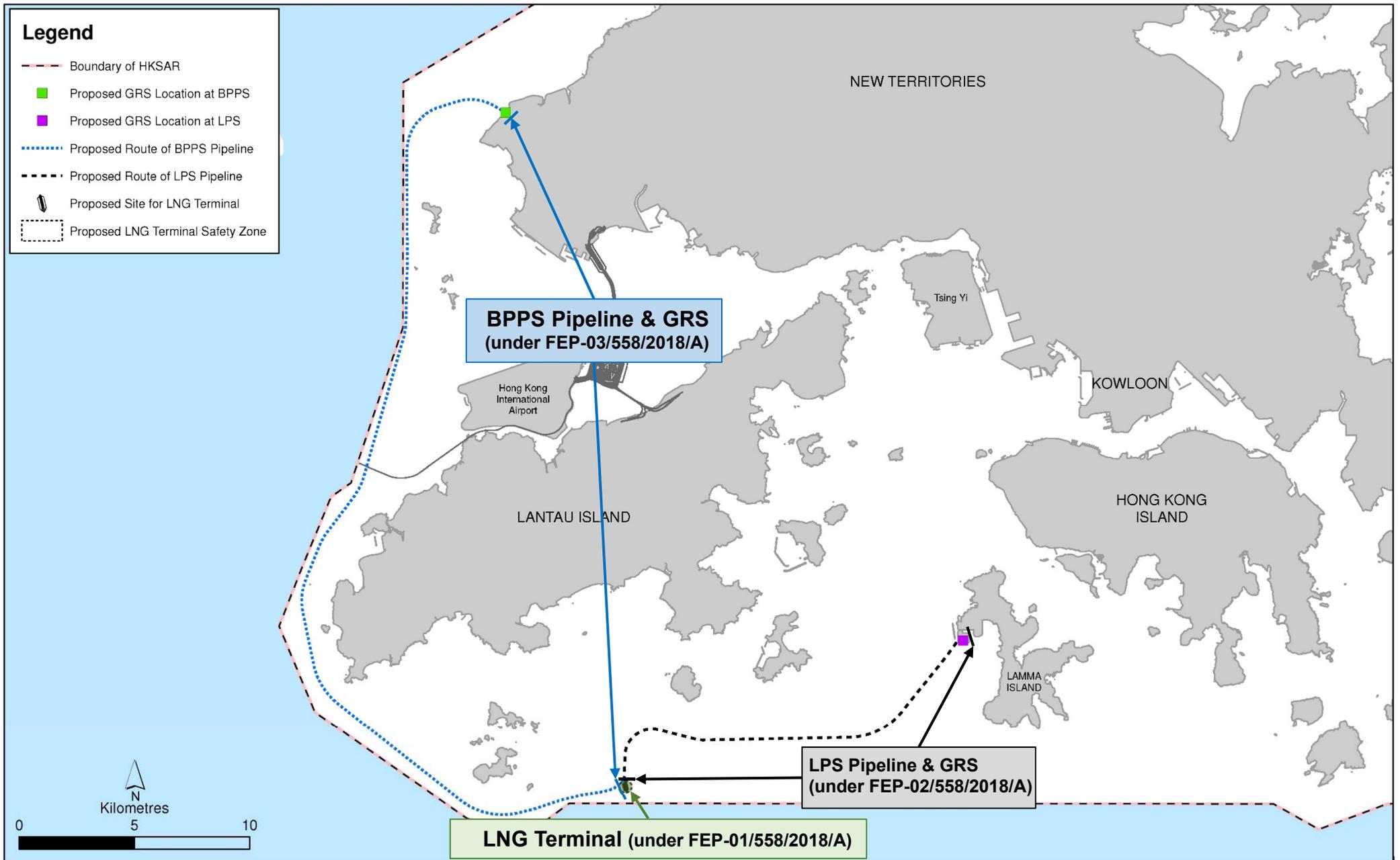
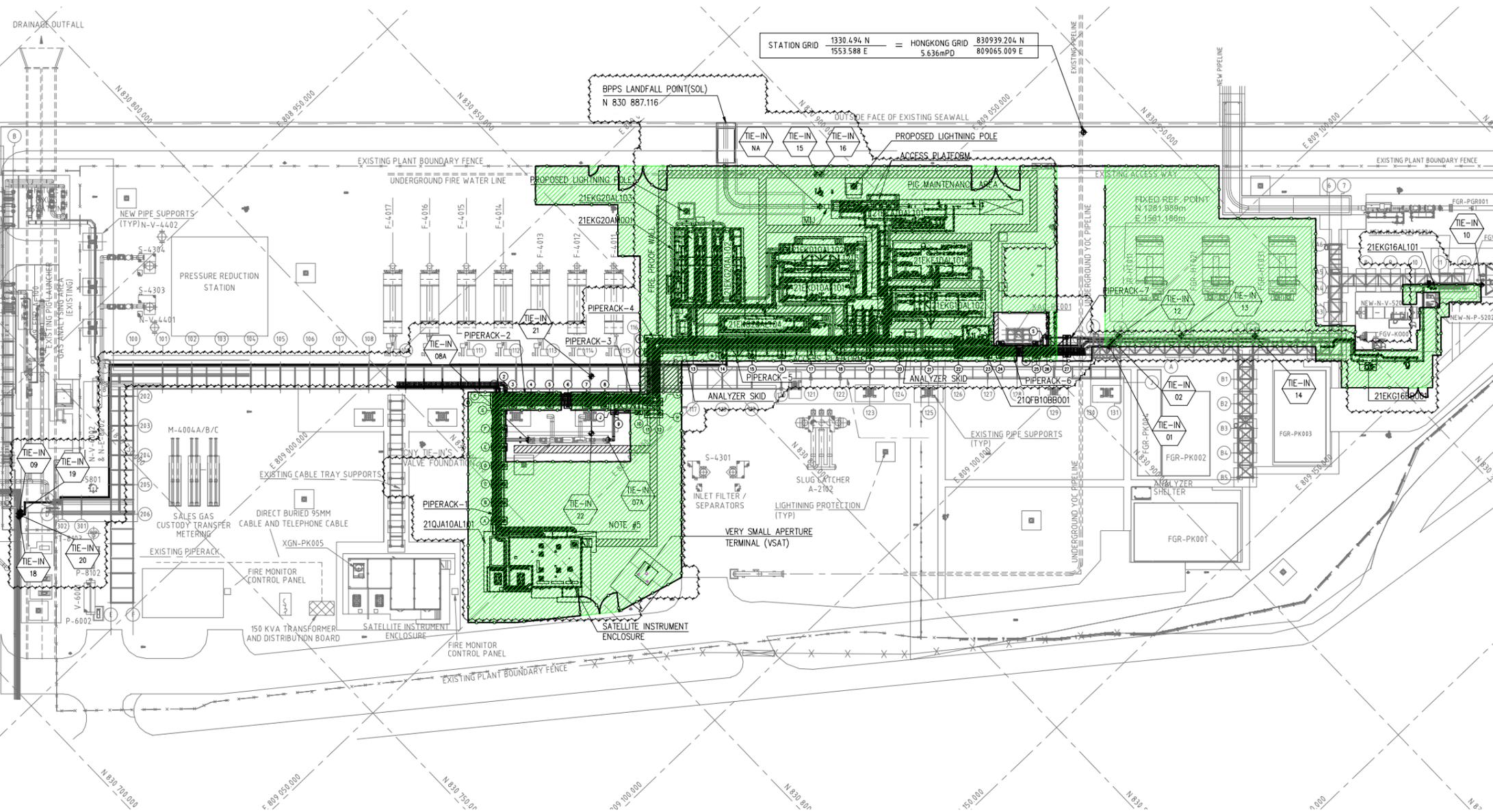
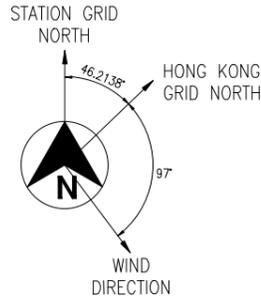


Figure 1.1

Indicative Location of Key Project Components

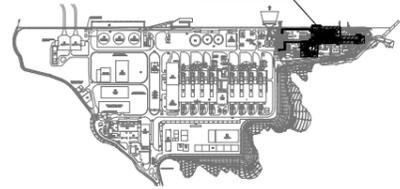


STATION GRID 1330.494 N = HONGKONG GRID 830939.204 N  
 1553.588 E = 5.636mPD 809065.009 E

BPPS LANDFALL POINT(SOL)  
 N 830 887.116

KEY PLAN

THIS DRAWING



GENERAL NOTES

1. ALL DIMENSIONS ARE IN mm, ELEVATIONS & COORDINATES ARE IN m.
2. NOMINAL GRADE (PIPING DATUM) 0.000m = NOMINAL GRADE (HONG KONG DATUM) 5.700m.
3. RELATIONSHIP OF HONG KONG GRID TO STATION GRID.  
 H.K. GRID 808 950.493 E = STATION GRID 0.000 E  
 828 896.966 N = STATION GRID 0.000 N
4. PIG RECEIVER DESIGNED FOR INTELLIGENT PIGGING.
5. EXISTING HOSE REEL CABINET AT NEW SIE BUILDING SHALL BE RELOCATED.

LEGEND

- ESCAPE /ACCESS CLEAR WIDTH OF NOT LESS THAN 1.525m AND CLEAR HEIGHT OF 2.3m.
- NEW BPPS GRS SCOPE OF WORK
- SITE BOUNDARY AT THE BPPS GRS

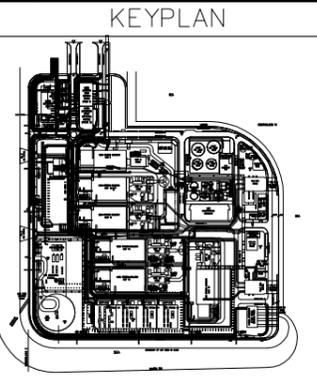
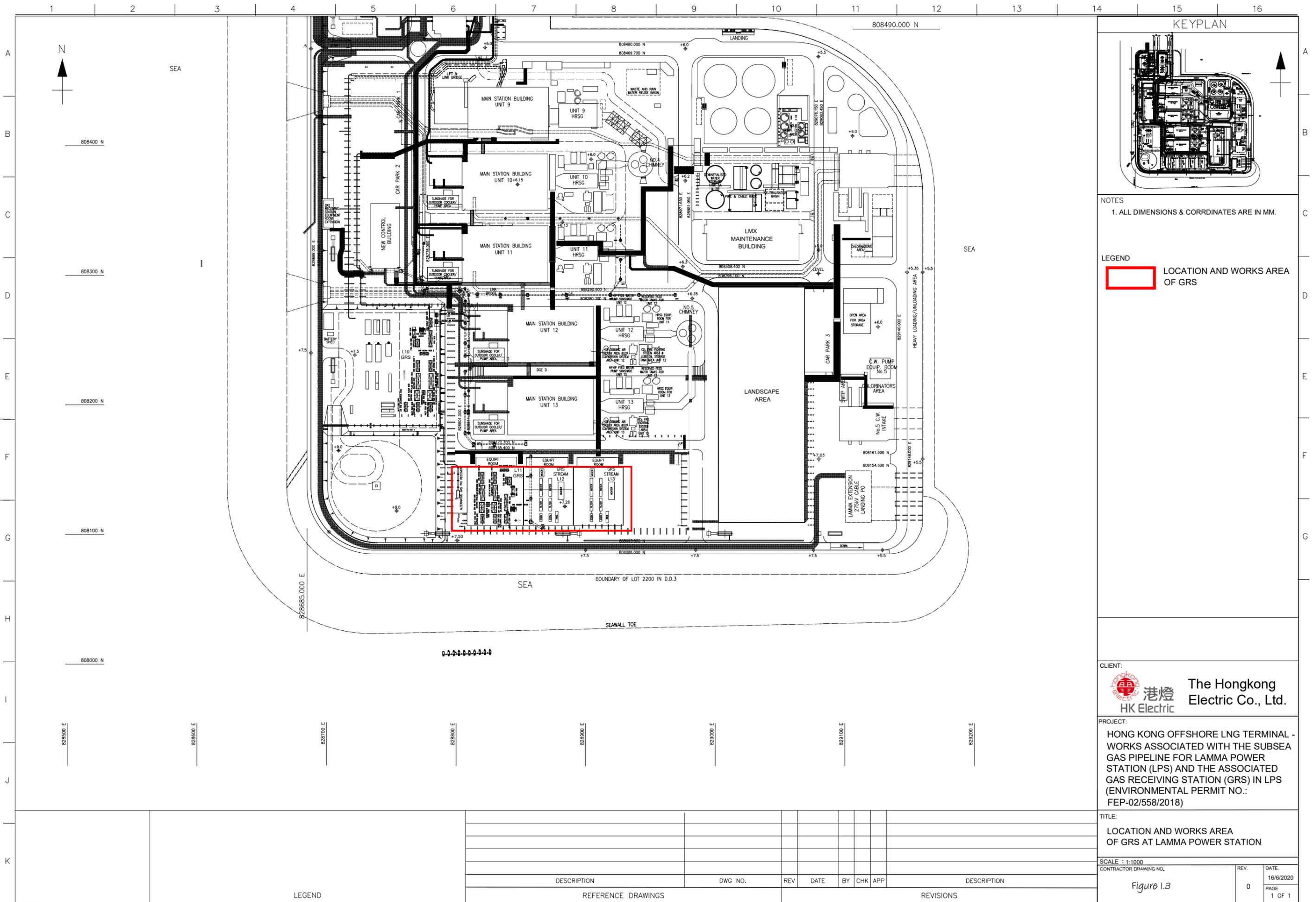


HKOLNG-COEEC-21EKG-MPD010-9101 HKOLNG GRS - EQUIPMENT LIST  
 DWG. NO. DRAWING TITLE

REFERENCE DOCUMENTS

REVISION	No.	DATE	DESCRIPTION	BY	CHK.	APP'D	CLP
C	03JUN2020	ISSUED FOR REVIEW	AKR	ASD	MF		
B	17APR2020	INTERNALLY APPROVED	AKR	ASD	MF		
A	21FEB2020	DISCIPLINE INTERNAL CHECK	AKR	ASD	MF		

CLIENT	Capco 香港中華煤氣有限公司 Cable Peak Power Co. Ltd.	Offshore Oil Engineering Co., Ltd.	JOB No. 20ZB-DD02
SIGNATURE	DATE	PROJECT: HONG KONG OFFSHORE LNG TERMINAL PROJECT PACKAGE B	CERTIF. No. A112002816
DRAWN	SGB	20AUG2020	SCALE (A3) 1 : 1000
DESIGNED	AKR	20AUG2020	Figure 1.2
CHECKED	ASD	20AUG2020	
REVIEWED	TWC	20AUG2020	
EXAMINED	TWC	20AUG2020	
APPROVED	MF	20AUG2020	DWG No. HKOLNG-COEEC-21EKG-MLDO20-9112 REV. C



NOTES  
1. ALL DIMENSIONS & CORRINATES ARE IN MM.

LEGEND  
 LOCATION AND WORKS AREA OF GRS

CLIENT:  
 The Hongkong Electric Co., Ltd.

PROJECT:  
 HONG KONG OFFSHORE LNG TERMINAL - WORKS ASSOCIATED WITH THE SUBSEA GAS PIPELINE FOR LAMMA POWER STATION (LPS) AND THE ASSOCIATED GAS RECEIVING STATION (GRS) IN LPS (ENVIRONMENTAL PERMIT NO.: FEP-02/558/2018)

TITLE:  
 LOCATION AND WORKS AREA OF GRS AT LAMMA POWER STATION

SCALE : 1:1000  
 CONTRACTOR DRAWING NO. **Figure 1.3**      REV. 0      DATE 16/6/2020  
 PAGE 1 OF 1

0-0-0-0-0-0-0-0

DESCRIPTION	DWG NO.	REV	DATE	BY	CHK	APP	DESCRIPTION
REFERENCE DRAWINGS							
REVISIONS							

LEGEND

**Table 1.1 Contact Information of Key Personnel**

Party	Position	Name	Telephone
CAPCO / HKLTL (For FEP-01/558/2018/A and FEP-03/558/2018/A)	Senior Environmental Manager	Dr Helen Chiu	2596 4116
HK Electric / HKLTL (For FEP-01/558/2018/A and FEP-02/558/2018/A)	Head of Mechanical Engineering, Projects Division	Norman Chan	3143 3819
Environmental Team (ET) (ERM-Hong Kong, Limited)	ET Leader	Raymond Chow	2271 3114
Independent Environmental Checker (IEC) (Mott MacDonald Hong Kong Limited)	IEC	Arthur Lo	2828 5757
Contractor (CNOOC Offshore Oil Engineering Co. Ltd.)	Environmental Manager	H Y Tang	6111 5789
	Environmental Officer	Kelvin Cheung	9060 1020

## 1.4 Summary of Construction Activities

The programme of the construction is shown in **Annex B**.

As informed by the Contractor, details of the major construction activities undertaken in the reporting period are listed in **Table 1.2** below:

**Table 1.2 Major Construction Activities Undertaken in the Reporting Period**

FEP	Land-based Works	Marine-based Works
FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>
FEP-02/558/2018/A	<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pre-trenching <sup>(1)</sup></li> </ul>
FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>▪ Excavation for Foundation - Pipe Rack; and</li> <li>▪ Excavation for Plate Load Test - Satellite Instrument Enclosure</li> </ul>	<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>

Remark: (1) Pre-trenching works for FEP-02/558/2018/A were scheduled to commence on 27 January 2021. However, due to adverse weather and malfunction of the dredging plant, pre-trenching works were not undertaken in January 2021. Pre-trenching works are expected to commence in February 2021.

The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

## 1.5 Summary of EM&A Programme Requirements

The status of EM&A Programme for all environmental aspects required under the Updated EM&A Manual are presented in **Table 1.3**. As no percussive piling works were undertaken in the reporting period, no marine mammal monitoring, including vessel-based line transect surveys and passive acoustic monitoring was required to be monitored in accordance with the Updated EM&A Manual. The requirements of relevant environmental monitoring, including monitoring parameters, Action and Limit Levels, Event and Action Plan(s), environmental mitigation measures, etc. are presented in **Section 2**.

**Table 1.3 Summary of Status for the EM&A Programme under the Updated EM&A Manual**

Aspects	Relevant FEP(s)	Status
<b>Water Quality</b>		
Baseline Monitoring	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>Completed</li> </ul>
Efficiency of Silt Curtain System	FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented upon early stage of construction works for dredging / jetting operations for FEP-02/558/2018/A and FEP-03/558/2018/A</li> </ul>
Construction Phase Monitoring	FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>On-going for dredging / jetting operations for FEP-02/558/2018/A</li> <li>To be implemented upon commencement of construction works for dredging / jetting operations for FEP-03/558/2018/A</li> </ul>
Post-Construction Monitoring	FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented upon completion of construction works for the Project</li> </ul>
Monitoring for Hydrotesting for the Subsea Gas Pipelines	FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented during hydrotesting for the subsea gas pipelines</li> </ul>
First-year of LNG Terminal Operation	FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented during LNG Terminal operation</li> </ul>
Maintenance Dredging	FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented during maintenance dredging</li> </ul>
<b>Waste Management</b>		
Audit of Waste Management Practice	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>On-going</li> </ul>
<b>Ecology</b>		
Baseline Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>Completed</li> </ul>
Construction Phase Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented when percussive piling works for construction of Jetty are undertaken</li> </ul>
Post-Construction Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	<ul style="list-style-type: none"> <li>To be implemented upon completion of construction works for the Project</li> </ul>
Marine Mammal Exclusion Zone Monitoring	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>On-going for marine dredging / jetting operations for FEP-02/558/2018/A (marine mammal exclusion zone with 250 m radius)</li> <li>To be implemented when percussive piling works for construction of Jetty (under FEP-01/558/2018/A) or marine dredging / jetting operations (under FEP-03/558/2018/A) are undertaken</li> </ul>
<b>Environmental Site Inspection</b>		

Aspects	Relevant FEP(s)	Status
Regular Site Inspection	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>■ On-going</li> </ul>
Records of Operating Speeds and Marine Travel Routes for Working Vessels	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>■ On-going for FEP-02/558/2018/A</li> <li>■ To be implemented when marine-based works are undertaken for FEP-01/558/2018/A and upon commencement of marine-based construction works for FEP-03/558/2018/A</li> </ul>
Environmental Log Book	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	<ul style="list-style-type: none"> <li>■ On-going</li> </ul>

## 1.6 Status of Other Statutory Environmental Requirements

The environmental licenses and permits, including further environmental permits, registration as chemical waste producer, construction noise permits, which were valid in the reporting period are presented in **Annex D**. No non-compliance with environmental statutory requirements was identified.

## 2. EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for marine water quality and marine mammals as well as environmental site inspections for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts. As presented in *Section 1.5*, environmental site inspections and/or audit on waste management practice were conducted for FEP-01/558/2018/A, FEP-02/558/2018/A and FEP-03/558/2018/A while marine water quality monitoring and marine mammal exclusion zone monitoring with 250 m radius were conducted for FEP-02/558/2018/A, and the findings are presented below.

### 2.1 Environmental Site Inspection

Regular environmental site inspections were carried out with the Contractor and Project Proponents to confirm the implementation of appropriate environmental protection and pollution control mitigation measures for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts under the Project. In the reporting period, four (4) environmental site inspections were carried out on 6, 13, 20 and 27 January 2021. The Independent Environmental Checker (IEC) attended the environmental site inspection as the IEC audit on 20 January 2021 during the reporting period. The key observations from site inspections and Contractor's follow-up actions are summarised in **Table 2.1**. The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

**Table 2.1 Key Observations from Site Inspections and Contractor's Follow-up Actions**

Item	Description	Contractor's Follow-up Action(s) Taken
<b>FEP-02/558/2018/A</b>		
	Nil observation.	N/A
<b>FEP-03/558/2018/A</b>		
1	Reminder: The Contractor was reminded to replace the broken garbage bag at the waste storage area outside the GRS for better housekeeping.	A proper refuse collection bin was provided to replace the broken garbage bag.

### 2.2 Waste Management Status

Waste management audits were performed with reference to the Waste Management Checklists for the corresponding Waste Management Plans detailed in **Annex E** during the regular environmental site inspections carried out in the reporting period. No non-compliance for Contractor's waste management practices was identified during the audits.

The quantities of different types of waste generated and dredged marine sediment for the three FEPs are summarised in **Tables 2.2, 2.3** and **2.4** with reference to the waste flow tables prepared by the Contractor. General refuse and inert C&D materials (public fill) were generated under FEP-02/558/2018/A and FEP-03/558/2018/A, respectively, in the reporting period. Detailed waste flow tables are presented in **Annex F**.

**Table 2.2 Quantities of Waste Generated for FEP-01/558/2018/A**

Inert C&D Materials Generated (in '000kg)						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Jan 2021	0	0	0	0	0	0

C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000kg)
				(in '000kg <sup>3</sup> )	(in '000L)	
Jan 2021	0	0	0	0	0	0

**Table 2.3 Quantities of Waste Generated and Dredged Marine Sediment for FEP-02/558/2018/A**

Inert C&D Materials Generated (in '000kg)						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Jan 2021	0	0	0	0	0	0

C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000kg)
				(in '000kg <sup>3</sup> )	(in '000L)	
Jan 2021	0	0	0	0	0	26.930

Marine Sediment Generated (in '000m <sup>3</sup> )				
Month/Year	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects
Jan 2021	0	0	0	0

**Table 2.4 Quantities of Waste Generated and Dredged Marine Sediment for FEP-03/558/2018/A**

Inert C&D Materials Generated (in '000kg)						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Jan 2021	244.400	0	0	0	244.400	0

C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000kg)
				(in '000kg <sup>3</sup> )	(in '000L)	
Jan 2021	0	0	0	0	0	0

Marine Sediment Generated (in '000m <sup>3</sup> )				
Month/Year	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects
Jan 2021	0	0	0	0

## 2.3 Marine Water Quality Monitoring

### 2.3.1 Monitoring Requirements

In accordance with the Updated EM&A Manual, marine water quality monitoring shall be undertaken at the monitoring stations as shown in **Figure 2.1** and **Table 2.5** three times a week at both mid-ebb and mid-flood tides during periods when there are dredging / jetting operations during construction phase of BPPS Pipeline or LPS Pipeline. The interval between two sets of monitoring would not be less than 36 hours. Two replicates of *in-situ* measurements and samples were collected at each monitored water depth of each monitoring stations. Levels of dissolved oxygen (DO), pH value, salinity, temperature and turbidity were measured *in-situ* whereas the level of suspended solids (SS) were determined by a HOKLAS accredited laboratory. The detailed methodology is presented in the Updated EM&A Manual.

**Table 2.5 Location of Marine Water Quality Monitoring Stations**

Station	Easting	Northing	Description
<b>Group 1 – During construction at the pipeline shore approach at LPS (KP17.4 - 18.2), West Lamma Channel (KP14.5 - 17.4)</b>			
IM1	829453	806896	Impact Station for Coastline of South Lamma
IM2	828235	810347	Impact Station for Coastline of North Lamma
E1	827317	811510	Control Station for Ebb Tide
F1	827892	804243	Control Station for Flood Tide
<b>Group 2 – During construction at the Double Berth Jetty to West Lamma Channel (KP0.0 - 14.5)</b>			
IM3	820683	805931	Impact Station for Coastline of South Cheung Chau
IM4	816997	805153	Impact Station for Coastline of South Shek Kwu Chau
IM5	814068	804100	Boundary of Proposed South Lantau Marine Park (MP)
IM6	814073	802029	Boundary of Proposed South Lantau MP

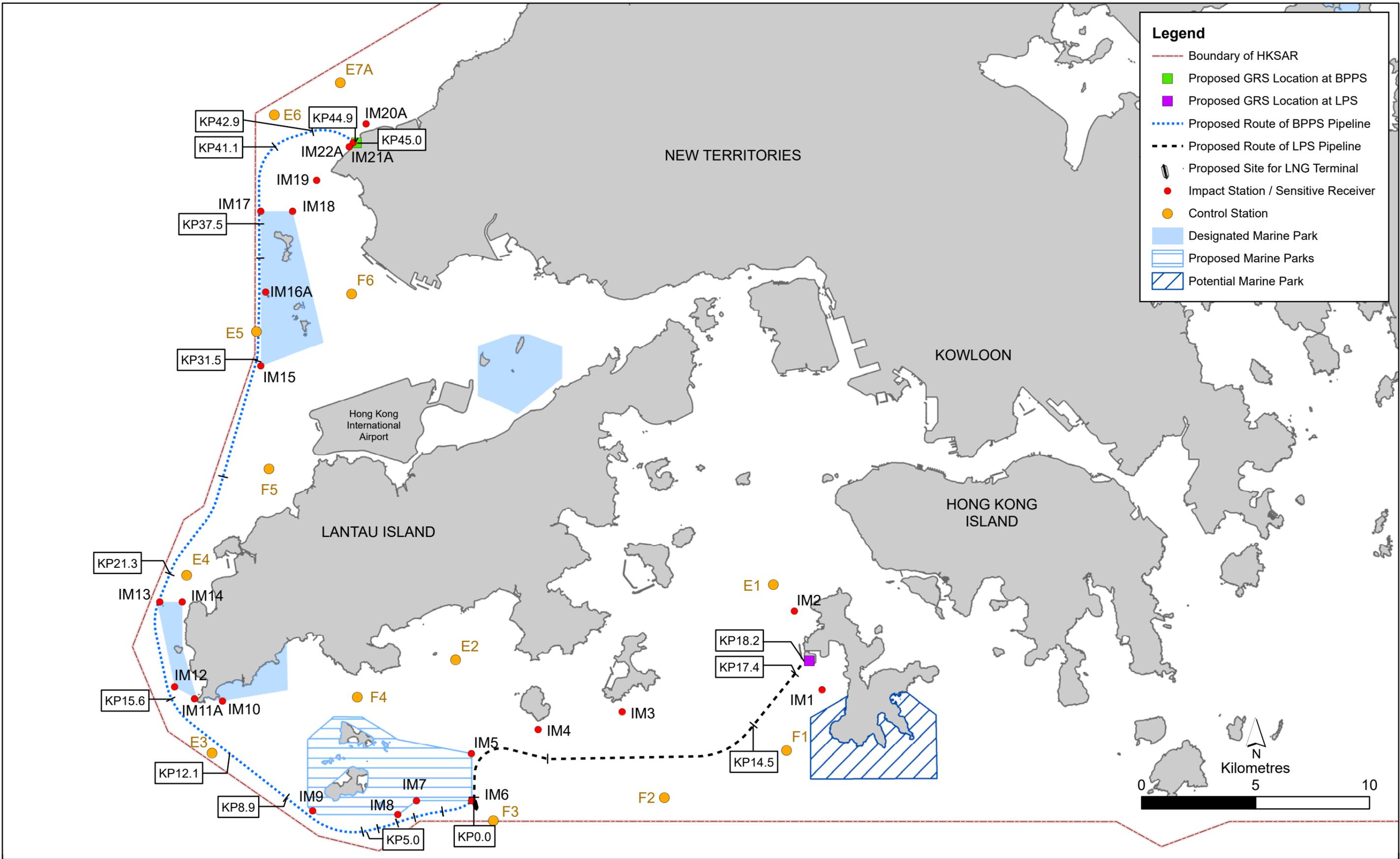


Figure 2.1

Marine Water Quality Monitoring Location

Station	Easting	Northing	Description
E2	813367	808213	Control Station for Ebb Tide
F2	822532	802161	Control Station for Flood Tide
F3	815032	801161	Control Station for Flood Tide
<b>Group 3 – During construction at the Jetty Approach (KP0.0 - 5.0), South of Soko Islands (KP5.0 - 8.9), Southwest of Soko Islands (KP8.9 - 12.1)</b>			
IM6	814073	802029	Boundary of Proposed South Lantau MP
IM7	811652	802029	Boundary of Proposed South Lantau MP
IM8	810833	801430	Boundary of Proposed South Lantau MP
IM9	807101	801595	Boundary of Proposed South Lantau MP
E3	802686	804123	Control Station for Ebb Tide
F3	815032	801161	Control Station for Flood Tide
<b>Group 4 – During construction at the Adamasta Channel (KP12.1 - 15.6), Southwest Lantau (KP15.6 - 21.3)</b>			
IM10	803145	806407	Boundary of Southwest Lantau MP
IM11A	801914	806510	Boundary of Southwest Lantau MP
IM12	801041	807024	Boundary of Southwest Lantau MP
IM13	800386	810750	Boundary of Southwest Lantau MP
IM14	801376	810750	Boundary of Southwest Lantau MP
E4	801571	811923	Control Station for Ebb Tide
F4	809058	806567	Control Station for Flood Tide
<b>Group 5 – During construction at the West of Tai O to West of HKIA (KP21.3 - 31.5)</b>			
IM15	804820	821110	Boundary of Sha Chau and Lung Kwu Chau MP
E5	804634	822606	Control Station for Ebb Tide
F5	805185	816591	Control Station for Flood Tide
<b>Group 6 – During construction at the West of HKIA to Lung Kwu Chau (KP31.5 - 37.5)</b>			
IM15	804820	821110	Boundary of Sha Chau and Lung Kwu Chau MP
IM17	804865	827855	Boundary of Sha Chau and Lung Kwu Chau MP
IM16A	805039	824343	Coral Colonies at Pak Chau
E6	805418	832113	Control Station for Ebb Tide
F5	805185	816591	Control Station for Flood Tide
<b>Group 7 – During construction at the Lung Kwu Chau to Urmston Anchorage (37.5 - 41.1), Urmston Road (KP41.1 - 42.9)</b>			
IM17	804865	827855	Boundary of Sha Chau and Lung Kwu Chau MP
IM18	806220	827890	Boundary of Sha Chau and Lung Kwu Chau MP
IM19	807274	829250	Impact Station for Coastline of Lung Kwu Tan
E6	805418	832113	Control Station for Ebb Tide
F6	808812	824266	Control Station for Flood Tide
E5	804634	822606	Control Station for Flood Tide
<b>Group 8 – During construction at the West of BPPS (KP42.9 - 44.9), Pipeline shore approach at BPPS (KP44.9 - 45.0)</b>			
IM19	807274	829250	Impact Station for Coastline of Lung Kwu Tan
IM20A	809445	831728	Impact Station for Coastline of Deep Bay
IM21A	808879	830900	Coral Colony at Artificial Seawall at BPPS
IM22A	808703	830717	Coral Colony at Artificial Seawall at BPPS
E7A	808313	833524	Control Station for Ebb Tide
F6	808812	824266	Control Station for Flood Tide

Note: Alternative monitoring stations (E7A, IM11A, IM16A, IM20A, IM21A & IM22A) were proposed by the ET in consultation with the IEC and approved by EPD in accordance with the provision in Section 5.1 and Section 5.2.5 of the Updated EM&A Manual.

### 2.3.2 Action and Limit Levels for Marine Water Quality Monitoring

The Action and Limit Levels for marine water quality monitoring have been established based on the baseline marine water quality monitoring data in accordance with the Updated EM&A Manual. Action

and Limit Levels of key assessment parameters for construction phase marine water quality monitoring including DO, turbidity and SS are summarised in **Table 2.6**.

**Table 2.6 Action and Limit Levels for Marine Water Quality Monitoring**

Parameter	Action Level	Limit Level
<b>Group 1 – During construction at the pipeline shore approach at LPS (KP17.4 - 18.2), West Lamma Channel (KP14.5 - 17.4)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.2 mg L <sup>-1</sup>	<u>Surface and Middle</u> 2.9 mg L <sup>-1</sup>
	<u>Bottom</u> 2.4 mg L <sup>-1</sup>	<u>Bottom</u> 1.6 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b) c)</sup>	14.4 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	19.9 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b) c)</sup>	20.8 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	29.6 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 2 – During construction at the Double Berth Jetty to West Lamma Channel (KP0.0 - 14.5)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 3.4 mg L <sup>-1</sup>	<u>Surface and Middle</u> 2.4 mg L <sup>-1</sup>
	<u>Bottom</u> 1.8 mg L <sup>-1</sup>	<u>Bottom</u> 1.4 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b) c)</sup>	17.1 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	26.8 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b) c)</sup>	25.7 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	37.1 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 3 – During construction at the Jetty Approach (KP0.0 - 5.0), South of Soko Islands (KP5.0 - 8.9), Southwest of Soko Islands (KP8.9 - 12.1)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.1 mg L <sup>-1</sup>	<u>Surface and Middle</u> 3.0 mg L <sup>-1</sup>
	<u>Bottom</u> 2.7 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b) c)</sup>	17.0 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	30.9 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b) c)</sup>	22.3 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	36.9 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 4 – During construction at the Adamasta Channel (KP12.1 - 15.6), Southwest Lantau (KP15.6 - 21.3)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 3.4 mg L <sup>-1</sup>	<u>Surface and Middle</u> 2.5 mg L <sup>-1</sup>
	<u>Bottom</u> 2.8 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b) c)</sup>	63.1 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	165.7 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b) c)</sup>	75.4 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	121.8 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 5 – During construction at the West of Tai O to West of HKIA (KP21.3 - 31.5)</b>		

Parameter	Action Level	Limit Level
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.6 mg L <sup>-1</sup>	<u>Surface and Middle</u> 4.0 mg L <sup>-1</sup>
	<u>Bottom</u> 4.0 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b</sup> <sup>c</sup>	31.9 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	46.6 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b</sup> <sup>c</sup>	64.9 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	72.5 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 6 – During construction at the West of HKIA to Lung Kwu Chau (KP31.5 - 37.5)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.4 mg L <sup>-1</sup>	<u>Surface and Middle</u> 3.9 mg L <sup>-1</sup>
	<u>Bottom</u> 3.9 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b</sup> <sup>c</sup>	30.7 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	47.0 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b</sup> <sup>c</sup>	49.2 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	74.0 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 7 – During construction at the Lung Kwu Chau to Urmston Anchorage (37.5 - 41.1), Urmston Road (KP41.1 - 42.9)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 3.8 mg L <sup>-1</sup>	<u>Surface and Middle</u> 3.4 mg L <sup>-1</sup>
	<u>Bottom</u> 3.1 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b</sup> <sup>c</sup>	34.5 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	79.2 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b</sup> <sup>c</sup>	37.8 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	98.2 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day
<b>Group 8 – During construction at the West of BPPS (KP42.9 - 44.9), Pipeline shore approach at BPPS (KP44.9 - 45.0)</b>		
DO in mg L <sup>-1</sup> <sup>a</sup>	<u>Surface and Middle</u> 4.3 mg L <sup>-1</sup>	<u>Surface and Middle</u> 3.4 mg L <sup>-1</sup>
	<u>Bottom</u> 3.6 mg L <sup>-1</sup>	<u>Bottom</u> 2.0 mg L <sup>-1</sup>
Turbidity in NTU (Depth-averaged) <sup>b</sup> <sup>c</sup>	34.3 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day	58.5 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day
SS in mg L <sup>-1</sup> (Depth-averaged) <sup>b</sup> <sup>c</sup>	42.4 mg L <sup>-1</sup> , and 120% of the relevant control station's SS at the same tide of the same day	78.2 mg L <sup>-1</sup> , and 130% of the relevant control station's SS at the same tide of the same day

Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
- For Turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

The Event and Action Plan for marine water quality monitoring is provided in **Annex I**.

### 2.3.3 Monitoring Schedule for the Reporting Period

The schedule for marine water quality monitoring for the reporting period is provided in **Annex K**.

### 2.3.4 Monitoring Results

A total of two monitoring events for construction phase marine water quality monitoring were conducted on 27 and 29 January 2021 at the monitoring stations under Group 2 as shown in **Table 2.5** for construction of LPS Pipeline within the works area(s) for the associated marine-based activities in the reporting period.

The equipment used in construction phase marine water quality monitoring is presented in **Table 2.7**. Copies of the calibration certificates for the monitoring equipment are provided in **Annex H**.

**Table 2.7 Marine Water Quality Monitoring Equipment**

Equipment	Model
Multi-parameter water quality system (measurement of DO, pH, turbidity, salinity & temperature)	YSI 6920-V2-M (S/N: 08C100240 / MPP30)

The monitoring results and graphical presentations are provided in **Annex G**.

There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

## 2.4 Marine Mammal Exclusion Zone Monitoring

### 2.4.1 Monitoring Requirements

According to Condition 3.7 of FEP-02/558/2018/A, Condition 3.8 of FEP-03/558/2018/A, Section 9.11.3 of the approved EIA Report and Section 7 of the Updated EM&A Manual, marine mammal exclusion zone monitoring with 250 m radius is required during the course of dredging / jetting operations for construction of BPPS Pipeline or LPS Pipeline. Marine mammal exclusion zone requirements for marine dredging or jetting operations for construction of BPPS Pipeline or LPS Pipeline are presented in **Table 2.8**.

**Table 2.8 Marine Mammal Exclusion Zone Requirements**

Activity	Exclusion Zone	Requirement
Marine dredging or jetting operations	250m	Before pipeline dredging or jetting commence, the exclusion zone must have been continuously clear of marine mammals for 30 minutes. During pipeline dredging/ jetting, if marine mammals are spotted within the exclusion zone, pipeline dredging/ jetting works will cease and will not resume until the observer confirms that the zone has been continuously clear of marine mammals for a period of 30 minutes.

### 2.4.2 Monitoring Results

Marine mammal exclusion zone monitoring with 250 m radius was scheduled to be conducted during the reporting period when dredging operation for construction of LPS Pipeline was scheduled to commence on 27 January 2021. No sightings of marine mammals were observed during marine mammal exclusion zone monitoring in the reporting period.

## 2.5 Records of Operating Speeds and Marine Travel Routes of Working Vessels

The operating speeds and marine travel routes of working vessels for construction of the Project within the reporting period were checked and reviewed. Two working vessels were used for the construction of LPS Pipeline under FEP-02/558/2018/A from 26 to 27 January 2021 during the reporting period. All these working vessels were operated at a speed lower than 10 knots and

followed the relevant marine travel requirements stipulated in the FEP. No non-compliance on the operating speeds and marine travel routes of working vessels was identified. Records of operating speeds and marine travel routes of working vessels for construction of the Project provided by the Contractor are presented in **Annex L**.

## 2.6 Implementation Status of Environmental Mitigation Measures

A summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in **Annex C**. The necessary mitigation measures were implemented properly for the Project.

## 2.7 Summary of Exceedances of the Environmental Quality Performance Limit

There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine mammal in accordance with the Updated EM&A Manual, there were no breaches of Action and Limit Levels for marine mammal monitoring in the reporting period.

Cumulative statistics on exceedance is provided in **Annex J**.

## 2.8 Summary of Environmental Complaints, Notification of Summons and Successful Prosecutions

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

Statistics on environmental complaints, notification of summons and successful prosecutions are summarised in **Annex J**.

### 3. FORECAST FOR THE NEXT REPORTING PERIOD

#### 3.1 Works Programme for the Next Reporting Period

Construction activities to be undertaken in the next reporting period of February 2021 are summarised in **Table 3.1** below, together with the key issues:

**Table 3.1 Major Construction Activities for the Next Reporting Period**

Activities	Key Issues
<i>Under FEP-01/558/2018/A</i>	
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
<i>Under FEP-02/558/2018/A</i>	
Land-based Works	
<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Pre-trenching</li> <li>▪ Pipe-laying</li> </ul>	<ul style="list-style-type: none"> <li>▪ Elevation of suspended solids</li> <li>▪ Disturbance to marine mammals</li> </ul>
<i>Under FEP-03/558/2018/A</i>	
Land-based Works	
<ul style="list-style-type: none"> <li>▪ Excavation for Foundation</li> <li>▪ Construction of reinforced concrete foundation</li> <li>▪ Underground drainage works</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dust emission from construction activities and stockpiles</li> <li>▪ Waste management</li> <li>▪ Site surface runoff and wastewater discharge</li> </ul>
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>

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

#### 3.2 Monitoring Schedule for the Next Reporting Period

The tentative schedule for marine water quality monitoring is provided in **Annex L**.

## 4. CONCLUSION AND RECOMMENDATIONS

This Monthly EM&A Report presents the key findings of the EM&A works during the reporting period from 1 to 31 January 2021 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A).

Environmental auditing works, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan and review of the acceptability of operating speeds and marine travel routes of working vessels were conducted in the reporting period. No non-compliance of environmental statutory requirements was identified.

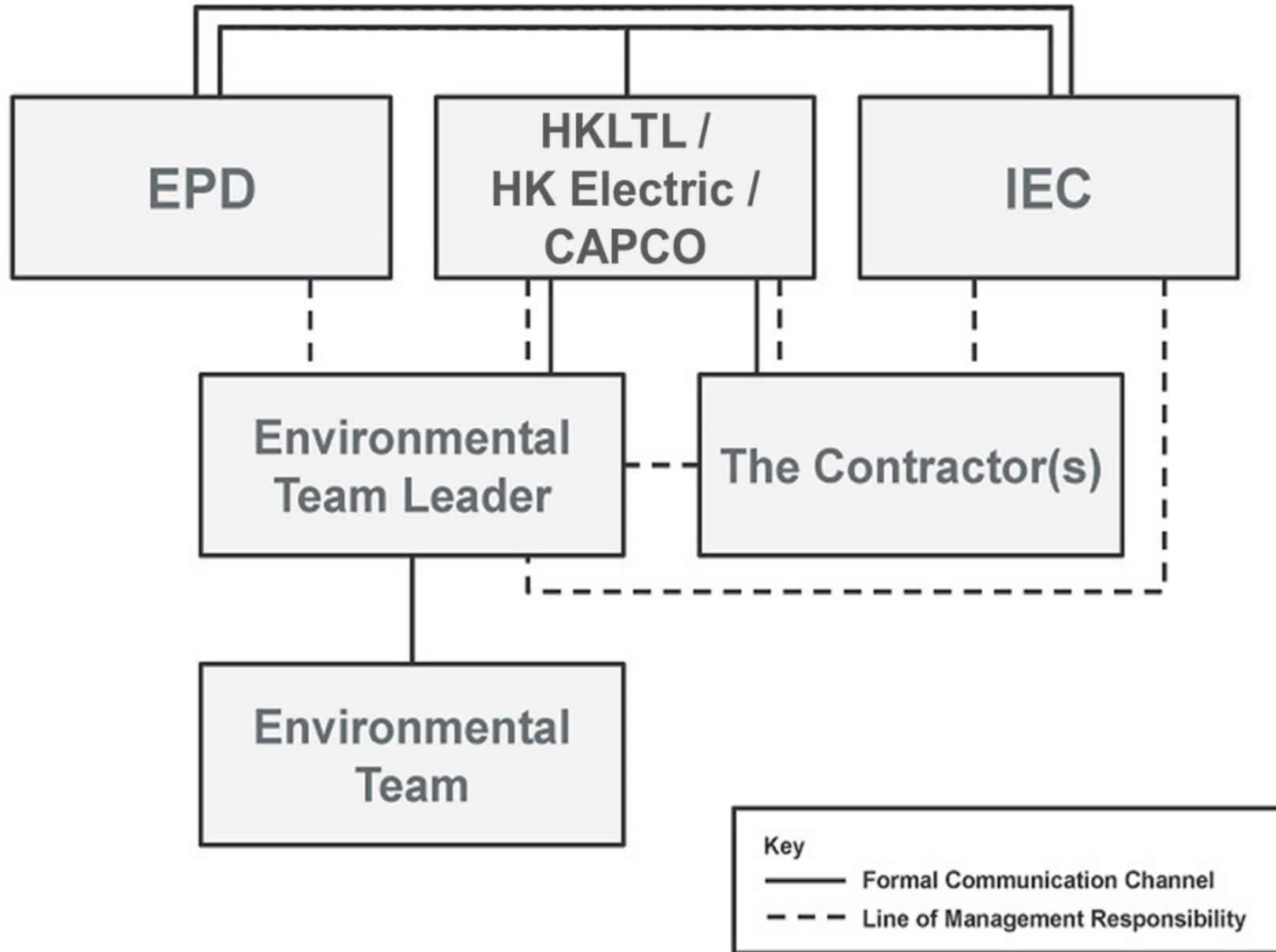
Marine water quality monitoring was conducted during the reporting period in accordance with the Updated EM&A Manual. No breaches of Action and Limit Levels were recorded.

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

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

## **ANNEX A**

### **PROJECT ORGANISATION**



## **ANNEX B**

### **CONSTRUCTION PROGRAMME**

**Schedule of Works associated with the double berth jetty at LNG Terminal**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022
<b>Preparation Phase</b>							
Pre-survey	■						
<b>Construction Phase</b>							
Jacket Installation		■			■		
Topsides Construction						■	

**Schedule of the works associated with the subsea gas pipeline for Lamma Power Station (LPS) and the associated Gas Receiving Station (GRS) in LPS**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021
<b>Preparation Phase</b>						
Pre-survey						
Removal of obstructions						
<b>Construction Phase</b>						
Pre-trenching including Deployment of Silt Curtain and Pilot Test						
De-burial of pre-installed pipeline by Mass Flow Excavator						
Pipeline Laying						
Intermediate Hydrotesting for Pipeline						
Post-trenching including Deployment of Silt Curtain and Pilot Test						
Rock Armour Placement						
Final Hydrotesting for Pipeline						
Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up						
Remarks: Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains.						

**Schedule of the works associated with the subsea gas pipeline for Black Point Power Station (BPPS) and the associated Gas Receiving Station (GRS) in BPPS**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022
<b>Preparation Phase</b>								
Pre-survey								
Removal of obstructions								
<b>Construction Phase</b>								
Pre-trenching including Deployment of Silt Curtain and Pilot Test								
Cofferdam and Sheet Pile Construction								
Pipeline Laying								
Post-trenching including Deployment of Silt Curtain and Pilot Test								
Rock Armour Placement								
Intermediate and Final Hydrotesting for Pipeline								
Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up								
Remarks: Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains.								

## **ANNEX C**

### **ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)**

**TABLE C.1 IMPLEMENTATION SCHEDULE OF RECOMMENDED MITIGATION MEASURES**

EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
<b>Air Quality</b>									
S4.10.1	S2.1	Impervious sheet will be provided for skip hoist for material transport.	Land sites for GRSS within BPPS and LPS / During construction, particularly dry season	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS
S4.10.1	S2.1	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 sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS
S4.10.1	S2.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS
S4.10.1	S2.1	Dropping heights for excavated materials should be controlled to a practical height to minimise the fugitive dust arising from unloading.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A

<sup>(1)</sup> D = Design Phase; C = Construction Phase; O = Operational Phase

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					D	C	O		
S4.10.1	S2.1	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 sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	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 sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	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 sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	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 sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
S4.10.1	S2.1	Stockpiles of more than 20 bags of cement and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	All exposed areas will be kept wet to minimise dust emission.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS
S4.10.1	S2.1	Ultra-low-sulphur diesel (ULSD), defined as diesel fuel containing not more than 0.005% sulphur by weight, will be used for all construction plant on-site.	Land sites for GRSS within BPPS and LPS / During construction/ During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	<i>Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites</i>	N/A
S4.10.1	S2.1	The engine of the construction equipment during idling will be switched off.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS
S4.10.1	S2.1	Regular maintenance of construction equipment deployed	Land sites for GRSS within BPPS and	Contractor(s)		✓		<i>Air Pollution Control</i>	✓ for GRS in BPPS

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					D	C	O		
		on-site will be conducted to prevent black smoke emission.	LPS / During construction					(Construction Dust) Regulation	N/A for GRS in LPS
S4.10.1	S2.1	All marine vessels fuelled in Hong Kong are required to operate using marine light diesel with sulphur content lower than 0.05%.	Marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction/ During operation	Contractor(s) / Project Proponents		✓	✓	Air Pollution Control (Marine Light Diesel) Regulation	N/A
S4.10.1	S2.1	Non-road mobile machinery (NRMMS), e.g. mobile generator and air compressor, shall comply with the prescribed emission standards and approved with a proper label by EPD.	Land sites for GRSs within BPPS and LPS and marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation	✓ for GRS in BPPS  N/A for GRS in LPS, LNG Terminal and BPPS and LPS Pipelines
S4.10.1	S2.1	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase of the GRSs and the BPPS and the LPS, environmental site audits on monthly basis is recommended throughout the construction period.	Land sites for GRSs within BPPS and LPS / During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS

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					D	C	O		
S4.10.2	S2.2	LNGCs shall comply with the fuel restriction requirement under the <i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i> .	Marine site for the LNG Terminal / During operation	HKLTL			✓	<i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i>	N/A
<b>Hazard to Life</b>									
S5.3.3	S3	All personnel within the BPPS shall comply with CLP safety policy and requirements.	Land site for the GRS within BPPS / During construction / During operation	Contractor(s) / CAPCO		✓	✓	-	✓
S5.3.3	S3	All personnel within the LPS shall comply with HK Electric safety policy and requirements.	Land site for the GRS within LPS / During construction / During operation	Contractor(s) / HK Electric		✓	✓	-	N/A
S5.3.3	S3	All operation work procedures shall be complied with the operating plant procedures or guidelines and regulatory requirements.	Land sites for GRSs within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS in LPS
S5.3.3	S3	All personnel shall be equipped with appropriate personal protective equipment (PPE) when working at the BPPS and LPS facilities.	Land sites for GRSs within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
S5.3.3	S3	Safety training and briefings shall be provided to all personnel.	Land sites for GRSS within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS in LPS
S5.3.3	S3	Regular site safety inspections/ audits shall be conducted.	Land sites for GRSS within BPPS and LPS / During construction/ During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS in LPS
S5.3.3	S3	Method statements and risk assessments shall be prepared and safety control measures shall be in place before commencement of work.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS
S5.3.3	S3	Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of work.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS
S5.3.3	S3	All construction workers shall be under close site supervision during the construction phase of the GRSSs.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS
S5.4.1	S3	An emergency response plan will be put in place which fully	Transit of the LNGC and FSRU Vessel	HKLTL			✓	-	N/A

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					D	C	O		
		documents the procedures to be followed in the event of an emergency.	under Emergency Situation / During operation						
S5.3.3	S3	Method statements and risk assessments shall be prepared and safety control measures should be in place before the commencement of construction works.	LNG Terminal / During construction	Contractor(s)		✓	-	N/A	
S5.3.3	S3	Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of construction works.	LNG Terminal / During construction	Contractor(s)		✓	-	N/A	
S5.3.3	S3	All construction workers shall be under close site supervision during the construction phase of the LNG Terminal.	LNG Terminal / During construction	Contractor(s)		✓	-	N/A	
S5.3.3	S3	All personnel within the LNG Terminal shall comply with relevant safety policy and requirements.	LNG Terminal / During operation	HKLTL			✓	-	
S5.3.3	S3	All operation work procedures shall be complied with relevant codes and standards (e.g.	LNG Terminal / During operation	HKLTL			✓	-	

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					D	C	O		
		SIGTTO) and regulatory requirements.							
S5.3.3	S3	Work permit system and emergency response procedure shall be in place.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Robust and extended process control system, safety control system, fire-fighting system and security system shall be provided.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Sufficient and trained / competent staff shall be provided to operate the LNG Terminal.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Regular safety inspections/audits shall be conducted.	LNG Terminal / During operation	HKLTL			✓	-	N/A
<b>Noise</b>									
S6.7	S4	N/A							N/A
<b>Water Quality</b>									
S7.9.1	S5	A detailed hydrotesting procedure for subsea pipelines will be developed that will detail how the process will be carried out, how it will be carefully controlled and monitored, and how the intake and subsequent discharge of the	LNG Terminal / During construction	Contractor(s)			✓	TM Standard under the WPCO, WPCO license requirements, WQO	N/A

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					D	C	O		
		seawater will be managed. Water quality monitoring for commissioning hydrotest for the subsea pipelines is presented in Section 5.3.5 of the Updated EM&A Manual.							
S7.9.1	S5	Adoption of appropriate dredging and jetting rates, plant numbers and silt curtains at the plant and WSRs, where applicable ( <b>Table 7.18</b> of the EIA Report, reprovided as <b>Table A.2</b> below).	Marine Dredging & Jetting for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A for BPPS Pipeline and LPS Pipeline *
S7.9.1	S5	Grab dredging can be conducted concurrently with one TSHD.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A for BPPS Pipeline and LPS Pipeline *
S7.9.1	S5	One jetting machine will be working on each pipeline.	Marine Jetting for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Cofferdam construction and removal at landfalls of BPPS and LPS (where required) should not be conducted concurrently with the nearby pipeline dredging sections (BPPS KP44.9 - 45.0 and	Pipeline landfalls for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A

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					D	C	O		
		LPS KP17.4-18.2). Silt curtain surrounding the works areas for cofferdam construction and removal at pipeline landfalls of the BPPS and the LPS should also be implemented.							
S7.9.1/ S7.9.2	S5	<p>The following measures shall be followed for provision of silt curtain:</p> <ul style="list-style-type: none"> <li>The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column and held with anchor blocks.</li> <li>Schematic diagrams on silt curtain deployment are provided in <b>Figures 7.4</b> and <b>7.5</b> of the EIA Report.</li> <li>The contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic.</li> <li>Regular inspection on the integrity of the silt curtain should be carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly.</li> </ul>	<p>Marine Dredging &amp; Jetting for the BPPS Pipeline and the LPS Pipeline / During construction</p> <p>Marine Maintenance Dredging (LNG Terminal) / During operation</p>	Contractor(s)		✓	✓	-	<p>✓ for 1<sup>st</sup> bullet point for LPS Pipeline</p> <p>N/A for 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> bullet points for LPS Pipeline</p> <p>N/A for BPPS Pipeline</p>

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					D	C	O		
		<ul style="list-style-type: none"> <li>Relevant marine works shall only be undertaken when the repair is fixed to the satisfaction of the engineer.</li> </ul>							
S7.9.1 / S7.9.2	S5	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	<p>Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction</p> <p>Marine Maintenance Dredging (LNG Terminal) / During operation</p>	Contractor(s)		✓	✓	-	N/A for BPPS Pipeline and LPS Pipeline *
S7.9.1	S5	All vessels must have a clean ballast system.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A for BPPS Pipeline and LPS Pipeline *
S7.9.1 / S7.9.2	S5	No overflow is permitted from the trailing suction hopper dredger and the Lean Mixture Overboard (LMOB) system will only be in operation at the beginning and end of the dredging cycle when the drag head is being lowered and raised.	<p>Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction</p> <p>Marine Maintenance Dredging (LNG</p>	Contractor(s)		✓	✓	-	N/A for BPPS Pipeline and LPS Pipeline *

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					D	C	O		
			Terminal) / During operation						
S7.9.1 / S7.9.2	S5	Dredged marine mud will be disposed of in a gazetted marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s)		✓	✓	-	✓ for LPS Pipeline *  N/A for BPPS Pipeline
S7.9.1 / S7.9.2	S5	Dredgers will maintain 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.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s)		✓	✓	-	N/A for BPPS Pipeline and LPS Pipeline *
S7.9.1 / S7.9.2	S5	Marine works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. Wastewater from	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During	Contractor(s)		✓	✓	-	✓ for LPS Pipeline

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					D	C	O		
		potentially contaminated area on working vessels should be minimised and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	construction / During operation						N/A for BPPS Pipeline
S7.9.1 / S7.9.2	S5	No solid waste is allowed to be disposed overboard.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction / During operation	Contractor(s)		✓	✓	-	✓ for LPS Pipeline N/A for BPPS Pipeline
S7.9.1	S5	Appropriate infiltration control, such as cofferdam wall, should be adopted to limit groundwater inflow to the excavation works areas in the Project site. Groundwater pumped out from excavation area should be discharged into the storm system via silt removal facilities.	Land sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	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	Land sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>ProPECC PN 1/94</i> , TM Standard under the <i>WPCO</i>	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
		ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.							
S7.9.1	S5	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Appropriate surface drainage will be designed and provided where necessary.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S 7.9.1	S5	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 sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>ProPECC PN 1/94</i>	N/A

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					D	C	O		
S7.9.1	S5	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 sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	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 sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS
S7.9.1	S5	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 sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	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. No onsite discharge from these chemical toilets would be allowed.	Land sites & drainages for GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
S 7.9.2	S5	Mitigation measures for maintenance dredging at the LNG Terminal in form of controlled dredging rate (maximum of 5,500m <sup>3</sup> day <sup>-1</sup> ) as well as silt curtain should be implemented for the control of sediment dispersion and the protection of the nearby WSRs.	Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s) / HKLTL			✓	-	N/A
S 7.9.2 / S9.11.3	S5 / S7	A project-specific contingency plan (including protocols for avoidance, containment, remediation and reporting accidental fuel spill event) will be prepared and implemented to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, surrounding waters and marine parks.	Fuel spillage for the LNG Terminal / During operation	Contractor(s) / HKLTL			✓		N/A
S7.12.1	S5.2-S5.5	Marine water quality monitoring at selected WSRs is recommended for marine dredging and jetting works for the pipeline construction.	Designated monitoring stations as defined in EM&A Manual / During marine construction period	Environmental Team (ET)		✓		-	✓
S7.12.1	S5.2-S5.5	To ensure proper implementation of the recommended mitigation measures and good construction site practices during marine-based	Marine sites for the LNG Terminal, the BPPS Pipeline and	Contractor(s)/ Environmental Team (ET) & Independent		✓		-	✓ for LPS Pipeline

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					D	C	O		
		construction works, environmental site audits on a regular basis is recommended throughout the construction period.	the LPS Pipeline / During construction	Environmental Checker (IEC)					N/A for BPPS Pipelines and LNG Terminal
S7.12.2	S5.2-S5.5	Water quality monitoring at the selected nearby WSRs is recommended for first year of operation of the LNG Terminal.	During operation for the LNG Terminal	Environmental Team (ET)/ HKLTL			✓	TM Standard under the WPCO, WPCO license requirements, WQO	N/A
S7.12.2	S5.2-S5.5	During maintenance dredging at the LNG Terminal, water quality monitoring at the selected nearby WSRs would be required.	Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s) / HKLTL			✓	TM Standard under the WPCO, WPCO license requirements, WQO	N/A
<b>Waste Management</b>									
S8.5	S6.2	The contractor(s) will nominate approved personnel to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓
S8.5	S6.2	Good waste management practices should be implemented: <ul style="list-style-type: none"> <li>• Training of site personnel in proper waste management</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓ for 1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> & 7 <sup>th</sup> bullet points for GRS in BPPS

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					D	C	O		
		and chemical handling procedures; <ul style="list-style-type: none"> <li>Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre;</li> <li>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;</li> <li>Any unused chemicals, and those with remaining functional capacity, be recycled as far as possible;</li> <li>Prior to disposal of C&amp;D materials, 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 in a landfill;</li> <li>Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and</li> </ul>						N/A for 2 <sup>nd</sup> & 4 <sup>th</sup> bullet points for GRS in BPPS  ✓ for 1 <sup>st</sup> , 2 <sup>nd</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> & 7 <sup>th</sup> bullet points for LPS Pipeline  N/A for 3 <sup>rd</sup> & 4 <sup>th</sup> bullet points for LPS Pipeline	

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					D	C	O		
		<ul style="list-style-type: none"> <li>Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.</li> </ul>							
S8.5	Table 6.1	The contractor(s) must provide sufficient waste disposal points. Wastes will be collected and removed from site in a timely manner.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S8.5	Table 6.1	The contractor(s) will have appropriate measures to reduce windblown/ floating litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S8.5	Table 6.1	The contractor(s) will take and keep records of quantities of wastes generated, recycled and disposed of and the disposal sites.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S8.5	Table 6.1	The contractor(s) must segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse and recycling of material and proper disposal of waste.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓

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S8.5	S6.2	The contractor(s) will use reusable non-timber formwork to reduce the amount of C&D materials.	All areas / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for LPS Pipeline
S8.5	Table 6.1	The contractor(s) must ensure that all the necessary waste disposal and marine dumping permits or licences are obtained prior to the commencement of the construction works.	During construction	Contractor(s)		✓		-	✓
S8.5	S6.2	The contractor will open a billing account with EPD in accordance with the <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> for the payment of disposal charges.	During construction	Contractor(s)		✓		<i>Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i>	✓
S8.5	S6.2	A trip-ticket system will be established in accordance with <i>DEVB TC(W) No. 6/2010</i> 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.	During construction	Contractor(s)		✓		<i>DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction &amp; Demolition Materials</i>	✓
S8.5	S6.2	A WMP as stated in the <i>PNAP ADV-19</i> for the amount of waste generated, recycled and disposed	All areas / During construction	Contractor(s)		✓		<i>PNAP ADV-19</i>	✓

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					D	C	O		
		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.							
S8.5	Table 6.1	The management of dredged marine sediment requirement from <i>PNAP ADV-21</i> will be incorporated in the Contract for the construction and maintenance dredging during the operation of the Project.	Marine works / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>PNAP ADV-21</i> and <i>Dumping at Sea Ordinance (DASO)</i>	✓
S8.5/ S7.9	S6.2 / S5	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	✓
S8.5/ S7.9	S6.2 / S5	Barges will be filled to a level, which ensures that of marine sediment and marine sediment laden water does not spill over during loading or transport to the disposal site and that adequate freeboard is maintained to ensure	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	N/A

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					D	C	O		
		that the decks are not washed by wave action.							
S8.5/ S7.9	S6.2 / S5	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	✓ *
S8.5/ S7.9	S6.2 / S5	When the dredged material has been unloaded at the disposal areas, any material that has accumulated on the deck or other exposed parts of the vessel will be removed and placed in the hold or a hopper. Under no circumstances will decks be washed clean in a way that permits material to be released overboard.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓			N/A
S8.5	S6.2	Dredgers will maintain 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.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓			✓ *
S8.5	Table 6.1	C&D materials will be segregated on-site into public fill and non-inert	During construction	Contractor(s)		✓		-	✓

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					D	C	O		
		C&D materials and stored in different containers or skips to facilitate reuse of the public fill and proper disposal of the construction waste. Specific areas of the land and marine-based construction sites will be designated for such segregation and storage if immediate use is not practicable. Prefabrication will be adopted as far as practicable to reduce the construction waste arisings.							
S8.5	Table 6.1	The contractor(s) will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> .	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	✓
S8.5	Table 6.1	Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	✓

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					D	C	O		
		<ul style="list-style-type: none"> <li>Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> <li>Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.</li> </ul>							
S8.5	Table 6.1	<p>The storage area for chemical wastes will:</p> <ul style="list-style-type: none"> <li>Be clearly labelled and used solely for the storage of chemical waste;</li> <li>Be enclosed on at least 3 sides;</li> <li>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;</li> <li>Have adequate ventilation;</li> <li>Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	✓

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					D	C	O		
		chemical waste, if necessary); and <ul style="list-style-type: none"> <li>Be arranged so that incompatible materials are appropriately separated.</li> </ul>							
S8.5	Table 6.1	Chemical waste will be disposed of: <ul style="list-style-type: none"> <li>Via a licensed waste collector; and</li> <li>To a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers.</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	N/A
S8.5	Table 6.1	General refuse (including the floating refuse collected) will be stored in enclosed bins separately from C&D materials and chemical wastes. Floating refuse will be collected on an 'as needed' basis for disposal as general refuse. Workers will be prohibited from throwing rubbish into the sea and adequate bins will be provided on both land and marine-based sites and marine vessels. General	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓

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					D	C	O		
		refuse will be delivered separately from C&D materials and chemical wastes for offsite disposal on a regular basis to reduce odour, pest and litter impacts. General refuse from the marine vessels will be collected and disposed on shore.							
S8.5	Table 6.1	Recycling bins will be provided at strategic locations within the land and marine-based construction site and marine vessels to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Project Site. Materials recovered will be sold for recycling.	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓ for provision of recycling bins  N/A for material recovered being sold for recycling
S8.5	S6.2	To avoid any odour and litter impact, appropriate number of portable toilets will be provided for workers on-site.	All areas / During construction / During operation	Contractor(s)		✓	✓	-	✓
S8.5	S6.2	At the commencement of the construction works and operations, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓

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					D	C	O		
		and recycling. In particular, the training will emphasize no dumping of waste into the sea is allowed, particularly at marine-based work sites and on marine vessels.							
S8.5	S6.2	Industrial waste arising from maintenance activities will be segregated. Scrap metals and recyclables will be sent for recycling to reduce the overall quantity of waste disposed from these activities.	All areas / During operation	Project Proponents			✓	-	N/A
S8.7	S6.1	It is recommended that monthly audits of the waste management practices be carried out during the construction phase land-based work sites (at the GRSs at the BPPS and the LPS), and at marine-based work sites (on marine vessels and Jetty) to determine if wastes are being managed in accordance with the recommended good site practices and WMP. The audits will include all aspects of waste management including waste generation, storage, handling, recycling, transportation and disposal, to prevent any dumping of waste into	All areas / During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-	✓

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					D	C	O		
		the sea or malpractice of waste disposal.							
<b>Ecology</b>									
S9.11.2	S7	The vessel operators will be required to control and manage all effluent from vessels. These kinds of wastewater shall be brought back to port where possible and discharged at appropriate collection and treatment system to prevent avoidable water quality impact.	Marine works / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓
S9.11.2	S7	A policy of no dumping of rubbish, food, oil, or chemicals will be strictly enforced. This will also be covered in the contractor briefings.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S9.11.2	S7	Only well-maintained and inspected vessels would be used to limit any potential discharges to the marine environment.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S9.11.2	S7	Standard site practices outlined in <i>ProPECC PN 1/94 "Construction Site Drainage"</i> will be followed as far as practicable in order to reduce surface runoff, minimise erosion, and also to retain and reduce any SS prior to discharge.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	<i>ProPECC PN 1/94</i>	✓

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					D	C	O		
S9.11.3	S7	Pipeline dredging/ jetting works between North of Tai O and Fan Lau (BPPS KP21.3 to 15.6) will avoid the peak months of Chinese White Dolphin (CWD) calving (May and June).	Marine works (Dredging/ jetting works between North of Tai O and Fan Lau along the BPPS Pipeline) / During construction	Contractor(s)		✓		-	N/A
S9.11.3	S7	Pipeline dredging/ jetting works between South of Soko Islands and the LNG Terminal (BPPS KP8.9 to 0.0) will be restricted to a daily maximum of 12 hours with daylight (0700 – 1900) operations.	Marine works (Dredging/ jetting works between South of Soko Islands and the LNG Terminal along the BPPS Pipeline) / During construction	Contractor(s)		✓		-	N/A
S9.11.3	S7	Pipeline dredging/ jetting from LNG Terminal to South of Shek Kwu Chau (LPS KP0.0 to 5.0) will be restricted to a daily maximum of 12 hours with daytime (0700 – 1900) operations.	Marine works (Dredging/ jetting works between from LNG Terminal to South of Shek Kwu Chau along the LPS Pipeline) / During construction	Contractor(s)		✓		-	✓ *
S9.11.3	S7	Use of vibratory/ hydraulic pushing method to vibrate / push the open-ended steel tubular pile for the upper layer of the seabed and only use hydraulic hammer (if needed)	Marine works (Piling at the LNG Terminal) / During construction	Contractor(s)		✓		-	N/A

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					D	C	O		
		<p>to install the remainder of the pile length through the lower layer of the seabed. During underwater percussive piling works:</p> <ul style="list-style-type: none"> <li>Quieter hydraulic hammers should be used instead of the noisier diesel hammers;</li> <li>Use of Noise Reduction System for hydraulic hammering;</li> <li>Acoustic decoupling of noisy equipment on work barges should be undertaken;</li> <li>Using ramp-up piling procedures. This comprises of low energy driving for a period of time prior to commencement of full piling. This will promote avoidance of the area by marine mammals when sounds levels are not injurious. Blow frequency during this ramping up period should replicate the intensity that would be undertaken during full piling (e.g. one blow every two seconds) to provide cues for marine mammals to localize the sound source. Pile blow energy should be ramped up gradually over the 'soft start'</li> </ul>							

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		<p>period. Activities will be continuous without short-breaks and avoiding sudden random loud sound emissions;</p> <ul style="list-style-type: none"> <li>Underwater percussive piling should be conducted inside a bubble curtain so as to ameliorate underwater sound level transmission;</li> <li>The percussive pile driving will be conducted during the daytime (0700 – 1900) for a maximum of 12 hours, avoiding generation of underwater sounds at night time; and</li> <li>Underwater percussive piling works for the Jetty construction will avoid the peak season of FP (December to May).</li> </ul>							
S9.11.3	S7	The vessel operators of this Project will be required to use predefined and regular routes (that do not encroach into existing and proposed marine parks), make use of designated fairways to access the works areas, and would avoid traversing sensitive habitats such as existing and proposed marine parks (with the	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓

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					D	C	O		
		exception of the FSRU Vessel which will need to transit through the proposed SLMP during manoeuvring to the Jetty and after typhoon event due to its safe operational requirement).							
S9.11.3	S7	Any anchoring/ anchor spread requirements during Project construction will avoid encroachment into the existing and proposed marine parks.	Marine works (on existing, planned and potential marine parks) / During construction	Contractor(s)/ Project Proponents		✓		-	✓
S9.11.3	S7	Silt curtain deployment during Project construction and maintenance dredging will avoid encroachment into the existing and proposed marine parks.	Marine works (on existing, planned and potential marine parks) / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓
S9.11.3	S7	No stopping over or anchoring activity of vessels related to the Project should be conducted within existing and proposed marine parks, even before, during and after typhoon.	Marine works (on existing, planned and potential marine parks) / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓
S9.11.3	S7	Use of appropriate dredging and jetting rates with the use of silt curtain where needed as recommended in the Water Quality section ( <b>Section 7</b> of the	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A

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					D	C	O		
		EIA Report) to reduce potential water quality impacts from elevated suspended solids (SS) due to the proposed marine works.							
S9.11.3	S7	Silt curtain will be checked and maintained to ensure its effectiveness in mitigating water quality impacts on existing, planned and potential marine parks.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S9.11.3	S7	All vessel operators working on the Project will be given a briefing, alerting them to the locations of the existing, proposed and potential marine parks and the regulations for marine parks, the possible presence of dolphins and porpoises in the marine works areas, and the guidelines for safe vessel operation in the presence of cetaceans. The vessels will avoid using high speed as far as possible. By observing the guidelines, vessels will be operated in an appropriate manner so that marine mammals will not be subject to undue disturbance or harassment.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓

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					D	C	O		
S9.11.3	S7	All vessels used in this Project will be required to slow down to 10 knots around the Project's marine works areas and areas with high dolphin and porpoise usage, including existing and proposed marine parks. With implementation of this measure, the chance of vessel strike resulting in physical injury or mortality of marine mammals will be extremely unlikely.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S9.11.3	S7	During underwater percussive piling works, a marine mammal exclusion zone within a radius of 500m radius will be implemented during underwater percussive piling works. Qualified observer(s) will scan an exclusion zone of 500m radius around the work area for at least 30 minutes prior to the start of piling. If a marine mammal is observed in the exclusion zone, piling will be delayed until they have left the area. This measure will ensure the area in the vicinity of the underwater percussive piling work is clear of marine mammals prior to the commencement of works and will serve to reduce any disturbance to marine mammals. When a marine	Marine works / During construction	Contractor(s) / Project Proponents		✓		-	N/A

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					D	C	O		
		mammal is spotted by qualified personnel within the exclusion zone, piling works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the piling is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals.							
S9.11.3	S7	During marine dredging or jetting operations, a marine mammal exclusion zone within a radius of 250m from dredger or jetting machine will be implemented. Qualified observer(s) will scan an exclusion zone of 250m radius around the work area for at least 30 minutes prior to the start of dredging or jetting. If cetaceans or other megafauna are observed in the exclusion zone, dredging or jetting will be delayed until they have left the area. This measure will ensure the area in the vicinity of the dredging or jetting work is clear of marine mammals prior to the commencement of works and will serve to reduce any	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		disturbance to marine mammals. When a marine mammal is spotted by qualified personnel within the exclusion zone, dredging or jetting works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the works is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals. If necessary, for night-time works, exclusion zone monitoring for FP by underwater acoustic means would be explored to supplement the exclusion zone monitoring by trained observers. A site trial will be conducted to demonstrate its practicability/ effectiveness before actual implementation during the night-time works.							
S9.11.3	S7	Implementation of a contingency plan to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, surrounding waters and marine parks.	Marine site for the LNG Terminal / During operation	Contractor(s) / HKLTL			✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
S9.15.1	S7	Baseline, impact and post-construction monitoring of marine mammal using vessel-based line transect surveys and passive acoustic monitoring (PAM) will be undertaken to keep track of potential changes in the usage of waters in the vicinity of the Project's works areas by FP. Prior to the commencement of monitoring, methods will be agreed with the AFCD.	Marine site / During construction	Contractor(s) / ET/ Project Proponents		✓		-	N/A
<b>Fisheries</b>									
S10.8	S8	The mitigation measures designed to mitigate impacts to water quality to acceptable levels (compliance with assessment criteria) and marine ecological impacts are expected to mitigate impacts to fisheries resources.	During construction and operation	Contractor(s) / Project Proponents / Environmental Team (ET) & Independent Environmental Checker (IEC)		✓	✓	-	✓
S10.8	S8	Impingement and entrainment of fisheries resources will be reduced through appropriate design of the intake screens on the cooling water intake.	During operation for the LNG Terminal	Contractor(s) / HKLTL			✓	-	N/A
<b>Visual</b>									
S11.8	S9	Sensitive architectural design of the new facilities. This should take into account material texture,	All areas / Detailed design / During	Design Contractor / Project Proponents	✓	✓	✓	-	✓

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		colour, finished to structure and the context of the site to ensure the GRSs at the BPPS and LPS blend into the existing context, cause least disturbance to the existing land. LNG Terminal will be designed for marine safety and operations, in accordance with relevant standards and regulations and sensitive architectural design will be considered where practicable.	construction / During operation						
S11.8	S9	Pre-construction and construction period for the GRSs and LNG Terminal should be reduced as far as practical to lower visual impact.	All areas / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS and LNG Terminal  N/A for GRS in LPS
S11.8	S9	Following construction, land areas temporarily affected by the construction works, will be reinstated to their former state.	Land sites for the GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS
S11.8	S9	Light intensity and beam directional angle should be controlled at the GRSs and the LNG Terminal at the design stage to reduce light pollution and glare	All areas / Detailed design / During operation	Design Contractor / Project Proponents	✓		✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		(e.g. hooded lights, specific directional focus, etc.).							
S11.8	S9	Any plants to be affected by the GRSs at the BPPS and the LPS should be preserved and care taken to ensure the existing health status of the vegetation is maintained or enhanced after construction.	All areas / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS
<b>Cultural Heritage</b>									
S12.7	S10	N/A							N/A

Remarks:

\* Pre-trenching works for FEP-02/558/2018/A were scheduled to commence on 27 January 2021. However, due to adverse weather and malfunction of the dredging plant, pre-trenching works were not undertaken in January 2021. Pre-trenching works are expected to commence in February 2021.

**TABLE C.2 SUMMARY OF MITIGATION MEASURES FOR PIPELINE CONSTRUCTION WORKS**

Work Location	Plants Involved	Allowed Maximum Work Rate	Silt Curtain at Plants	Silt Curtain at Water Sensitive Receivers	Other Measures	Implementation Status
<b>LPS Pipeline (under FEP-02/558/2018/A)</b>						
Pipeline shore approach at LPS (KP17.4-18.2)	1 Grab Dredger	1,600m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
West Lamma Channel (KP14.5-17.4)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
South of Shek Kwu Chau to West Lamma Channel (KP5.0-14.5)	1 Jetting Machine	7,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Double Berth Jetty to South of Shek Kwu Chau (KP0.1-5.0)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Eastern Boundary of the Proposed South Lantau Marine Park (KP0.1-5.0)	Daily maximum of 12 hours with daylight (0700 – 1900)	N/A
<b>Pipeline Riser Sections at Double Berth Jetty (under FEP-02/558/2018/A and FEP-03/558/2018/A)</b>						
Pipeline Riser (KP0.0-0.1 for both pipelines)	1 Grab Dredger	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required	Daily maximum of 12 hours with daylight (0700 – 1900)	✓ for FEP-02/558/2018/A (Note 2) N/A for FEP-03/558/2018/A
<b>BPPS Pipeline (under FEP-03/558/2018/A)</b>						
Jetty Approach (KP0.1-5.0), excluding Subsea Cable Sterile Corridors	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required for grab dredging; Two layers at Southern Boundary of the Proposed South Lantau Marine Park (KP0.1-8.9) for jetting	Daily maximum of 12 hours with daylight (0700 – 1900)	N/A
Subsea Cable Sterile Corridors (KP1.49-2.75 and KP3.55-4.43)	2 Grab Dredgers, followed by 1 Jetting Machine	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day for each dredger 720m day <sup>-1</sup> for 24 hours each day jetting machine	Yes			N/A

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Work Location	Plants Involved	Allowed Maximum Work Rate	Silt Curtain at Plants	Silt Curtain at Water Sensitive Receivers	Other Measures	Implementation Status
South of Soko Islands (KP5.0-8.9)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes			N/A
Southwest of Soko Islands (KP8.9-12.1)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Adamasta Channel (KP12.1-15.6)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Southwest Lantau (KP15.6-21.3)	1 Jetting Machine	1,500 m day <sup>-1</sup> for 24 hours each day	Yes	Not required	Avoid the peak months of Chinese White Dolphin (CWD) calving (May and June)	N/A
West of Tai O to West of HKIA (KP21.3-31.5)	1 Jetting Machine	1,500m day <sup>-1</sup> for 24 hours each day from KP KP26.2 to 21.3 720m day <sup>-1</sup> for 24 hours each day from KP31.5 to 26.2	Yes	Not required		N/A
Sha Chau to Lung Kwu Chau (KP31.5-36.0)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP31.5-36.0)		N/A
Sha Chau to Lung Kwu Chau (KP36.0-37.5)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP36.0-37.5)		N/A
Lung Kwu Chau to Urmston Anchorage (KP37.5-41.1)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Northwestern corner of Sha Chau and Lung Kwu Chau Marine Park (KP37.5-41.1)		N/A

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<b>Work Location</b>	<b>Plants Involved</b>	<b>Allowed Maximum Work Rate</b>	<b>Silt Curtain at Plants</b>	<b>Silt Curtain at Water Sensitive Receivers</b>	<b>Other Measures</b>	<b>Implementation Status</b>
Urmston Road (KP41.1-42.9)	1 Grab Dredger	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
West of BPPS (KP42.9-44.9)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at CR1, CR2 (Note 1)		N/A
Pipeline shore approach at BPPS (KP44.9-45.0)	1 Grab Dredger	1,500m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Two layers at CR1, CR2 (Note 1)		N/A

## Notes:

(1) CR1 and CR2 denote the coral colonies identified at the artificial seawall at BPPS.

(2) Pre-trenching works for FEP-02/558/2018/A were scheduled to commence on 27 January 2021. However, due to adverse weather and malfunction of the dredging plant, pre-trenching works were not undertaken in January 2021. Pre-trenching works are expected to commence in February 2021.

## **ANNEX D**

### **STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS**

**TABLE D.1 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR WHOLE PROJECT (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A)**

Item	Description	Ref. No.	Date of Expiry	Status
1	Notification Pursuant to Section 3(1) of <i>Air Pollution Control (Construction Dust) Regulation</i>	454879	N/A	Valid
2	Billing Account under <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i>	7037035	N/A	Valid
3	Registration as Chemical Waste Producer under <i>Waste Disposal (Chemical Waste) (General) Regulation</i>	WPN 5213-912-C4445-01 (Note 1)	N/A	Registration completed on 12 May 2020
4	Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i>	GW- RS0911-20 (Note 2)	3 Jun 2021	Validity from 4 Dec 2020 to 3 Jun 2021
5	Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i>	GW-RS0955-20	13 Jun 2021	Validity from 17 Dec 2020 to 13 Jun 2021

Notes:

(1) The location/premises where the waste is produced (i.e. Working Vessel – Lan Jiang, Lan Jing, Hai Yang Shi You 202) as per the registration.

(2) Construction Noise Permit GW-RS0911-20 has been withdrawn and replaced by GW-RS0955-20.

**TABLE D.2 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR FEP-01/558/2018/A**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-01/558/2018	N/A	Issued on 17 Jan 2020
2	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-01/558/2018/A	N/A	Issued on 6 Nov 2020

**TABLE D.3 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR  
 FEP-02/558/2018/A**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-02/558/2018	N/A	Issued on 17 Jan 2020
2	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-02/558/2018/A	N/A	Issued on 22 Dec 2020
3	Marine Dumping Permit under <i>Dumping at Sea Ordinance</i>	EP/MD/21-055	12 Jul 2021	Issued on 13 Jan 2021

**TABLE D.4 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR  
 FEP-03/558/2018/A**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-03/558/2018	N/A	Issued on 17 Jan 2020
2	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-03/558/2018/A	N/A	Issued on 22 Jan 2021
3	Registration as Chemical Waste Producer under <i>Waste Disposal (Chemical Waste) (General) Regulation</i>	WPN 5293-431-P2781-26 (Note 1)	N/A	Registration completed on 1 Dec 2020
4	Construction Noise Permit (for offshore construction site near Urmston Road, Tuen Mun) under <i>Noise Control Ordinance</i>	GW-RW0389-20	14 Feb 2021	Validity from 28 Aug 2020 to 14 Feb 2021
5	Construction Noise Permit (for construction site near Eastern Road, BPPS, Yung Long Road, Tuen Mun) under <i>Noise Control Ordinance</i>	GW-RW0407-20	6 Mar 2021	Validity from 11 Sept 2020 to 6 Mar 2021

Notes:

(1) The location/premises where the waste is produced (i.e. Black Point Power Station) as per the registration.

## **ANNEX E**

### **WASTE MANAGEMENT CHECKLIST**

**TABLE E.1 WASTE MANAGEMENT CHECKLIST**

Activities	Timing	Checking Frequency	Works Area(s)	Compliance (✓) / Non-compliance (x)
Necessary waste disposal permits or licences have been obtained.	Before the commencement of works	Once	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	✓ ✓ ✓
Dredged sediments are managed and disposed in accordance with <i>PNAP ADV-21: Management Framework for Disposal of Dredged/ Excavated Sediment and Dumping at Sea Ordinance (DASO)</i> .	Throughout the dredging works	Each Month	FEP-02/558/2018/A FEP-03/558/2018/A	✓ <sup>(1)</sup> To be checked upon commencement of dredging operations
Waste are collected by licensed waste hauliers and disposed of at licensed sites.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	✓ ✓ ✓
Records of quantities of wastes generated, recycled and disposed of and the disposal sites are properly kept.	Throughout the works	Each Month	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	✓ ✓ ✓
Sufficient waste disposal points are provided. Wastes are collected and removed from site in a timely manner. General refuse is collected on a regular basis.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	✓ ✓ ✓
Waste storage areas are properly cleaned and do not cause windblown litter and dust nuisance. Appropriate measures to reduce windblown litter and dust nuisance of waste will be adopted, e.g. by either covering trucks or by transporting wastes in enclosed containers.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018	✓ ✓ ✓
Different types of waste are segregated in different containers or skip to enhance reuse and recycling of material and proper disposal of waste.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A	✓ ✓ ✓

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<b>Activities</b>	<b>Timing</b>	<b>Checking Frequency</b>	<b>Works Area(s)</b>	<b>Compliance (✓) / Non-compliance (x)</b>
Chemical wastes are stored, handled and disposed of in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> , published by the EPD. Chemical wastes are separated for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	Throughout the works	Each Week	FEP-01/558/2018/A	No chemical waste was produced in the reporting period.
			FEP-02/558/2018/A	No chemical waste was produced in the reporting period.
			FEP-03/558/2018/A	No chemical waste was produced in the reporting period.

Remark: (1) Pre-trenching works for FEP-02/558/2018/A were scheduled to commence on 27 January 2021. However, due to adverse weather and malfunction of the dredging plant, pre-trenching works were not undertaken in January 2021. Pre-trenching works are expected to commence in February 2021.

## **ANNEX F**

### **WASTE FLOW TABLE**

**Project Name: Hong Kong Offshore LNG Terminal Project (FEP-01/558/2018/A)**

**Monthly Summary Waste Flow Table for 2021 (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 ^1	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics ^2	Chemical Waste		Others (e.g. general refuse)
	(in '000kg)						(in '000kg3)			(in '000kg3)	(in '000L)	(in '000kg)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-TOTAL</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Jul	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

- Notes :
- (1) Broken concrete for recycling into aggregates; and
  - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging materials

Project Name: Hong Kong Offshore LNG Terminal Project (FEP-02/558/2018/A)

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Monthly Quantities of Marine Sediment Generated				Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete ^1	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Total Quantity of Type L Generated	Reused in the Contract	Reused in other Projects	Open Sea Disposed	Metals	Paper / Cardboard Packaging	Plastics ^2	Chemical Waste		Others (e.g. general refuse)
	(in '000kg)						(in '000m3)				(in '000kg3)			(in '000kg3)	(in '000L)	(in '000kg)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.930
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-TOTAL</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>26.930</b>
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>26.930</b>

Notes :  
 (1) Broken concrete for recycling into aggregates; and  
 (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging materials

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Monthly Quantities of Marine Sediment Generated					Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete ^1	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects	Open Sea Disposed	Metals	Paper / Cardboard Packaging	Plastics ^2	Chemical Waste		Others (e.g. general refuse)
	(in '000kg)						(in '000m <sup>3</sup> )					(in '000kg3)			(in '000kg3)	(in '000L)	(in '000kg)
Jan	244.400	0.000	0.000	0.000	244.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-TOTAL</b>	<b>244.400</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>244.400</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>244.400</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>244.400</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

- Notes :
- (1) Broken concrete for recycling into aggregates; and
  - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging materials

## **ANNEX G**

### **CONSTRUCTION PHASE MARINE WATER QUALITY MONITORING RESULTS**

Water Quality Monitoring Data Log Sheet

Date: 2021/01/27

Tide: Mid-Ebb

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)							
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*					
E2	Cloudy	Calm	12:25	8.2	S	2.27	210	17.45	17.46	31.72	31.72	8.26	8.26	111.9	112.2	8.85	8.88	8.83	2.1	2.2	2.6	2.3	2.4	2.3					
						2.27	210	17.46		31.71		8.26		112.5		8.90			2.3										
						0.20	336	17.33		31.72		8.26		110.5		8.76			2.0										
					M	0.18	286	17.30	31.71	8.26	110.9	8.80	2.7																
						0.58	275	17.21	31.75	31.74	8.26	8.26	107.9	107.4	8.57	8.54	8.54	2.7	3.1	2.2									
						1.21	109	17.20	31.73		8.25		106.9		8.50			3.5		2.4									
0.25	330	16.96	31.66	31.68	8.21	8.21	118.3	118.4	9.45		9.46		9.39		0.6			0.7		3.0									
IM3	Cloudy	Calm	10:47		15.0		S		0.25	330		16.97		31.70	31.66	8.20	8.20		116.4	116.7	9.30	9.33	9.01	0.9	1.0	0.8	2.1	2.3	2.3
									0.76	236		16.94		31.65		8.20			117.0		9.35			1.0			2.4		
				0.51		73		16.94	31.66	8.20	117.0	9.35	1.0	2.4															
				M		0.33	242	16.95	31.70	31.71	8.16	8.17	113.2	112.8	9.04	9.01	9.01	0.9	0.9	1.8									
						0.35	93	16.95	31.72		8.17		112.3		8.97			0.9		1.5									
						1.24	255	17.16	31.61		31.61		8.25		8.25			118.7		119.0	9.45	9.47	9.38	1.4	1.5	2.3			
IM4	Cloudy	Calm	11:13	16.0	S	1.24	255	17.16	31.61	31.61		8.25	8.25	119.2		119.0	9.49	9.47	9.38		1.5			1.5		1.2	2.1	2.2	2.9
						1.24	255	17.15	31.61			8.25		119.2			9.49				1.5						2.1		
						1.89	109	17.08	31.69		31.67	8.24		8.25	116.3		116.7			9.27	9.30	9.05	0.7		0.8		3.1		
					0.08	104	17.11	31.65	8.25	117.0		9.32	0.8		3.1														
					0.64	64	17.06	31.74	31.74	8.23		8.23	113.6		113.5	9.05		9.05	9.05	1.3			1.4	3.6					
					0.72	29	17.06	31.73		8.23	113.4		9.04	1.4		3.4													
0.86	255	17.16	31.76	31.77	8.26	8.26	116.1	116.7		9.23	9.28		9.16	0.6		0.7	3.8												
IM5	Cloudy	Calm	11:57		15.2		S		0.86	255		17.18		31.77	31.85		8.26	8.25	117.2	113.2	9.32	9.04	9.16	0.7	1.1	1.3	3.6	3.2	3.2
									0.48	217		16.95		31.86			8.25		112.9		9.01			1.0			3.2		
				1.35		304		16.96	31.83	8.25	113.5	9.06	1.2	3.2															
				M		0.25	184	16.76	31.98	31.99	8.24	8.24	111.3	111.1	8.91	8.90	8.90	2.1	2.3	2.5									
						0.76	264	16.76	32.00		8.24		110.9		8.88			2.4		2.6									
						0.97	308	16.99	31.92		31.93		8.26		8.26			116.3		116.3	9.27	9.27	9.13	0.5	0.6	2.8			
IM6	Cloudy	Calm	11:40	16.0	S	1.78	249	16.98	31.93	32.04		8.26	8.24	116.3		112.4	9.27	8.98	8.84		0.6			1.1		0.9	2.6	2.7	2.3
						0.99	312	16.81	32.04			8.24		112.1			8.96				1.0						2.3		
						0.32	300	16.81	32.03		8.24	112.6		9.00	1.2		2.3												
					M	0.40	267	16.75	32.07	32.07	8.23	8.23	110.6	110.5	8.85	8.84	8.84	1.0	1.1	1.8									
						0.40	267	16.74	32.07		8.23		110.3		8.83			1.1		1.9									
						0.40	267	16.74	32.07		8.23		110.3		8.83			1.1		1.9									

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; S: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2021/01/27

Tide: Mid-Flood

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
F2	Cloudy	Calm	15:38	19.0	S	0.92	326	17.30	17.29	31.98	31.98	8.22	8.22	117.0	117.2	9.27	9.29	9.16	0.1	0.1	1.0	<1.0	0.5	1.7
						1.12	283	17.28		31.98		8.22		117.3		9.30			0.1			<1.0		
						0.52	241	17.16		32.05		8.21		113.5		9.01			0.1			1.3		
					M	0.68	288	17.16	32.04	8.21	114.2	9.07	0.1	1.2										
						0.42	301	17.11	32.23	8.20	109.0	8.65	2.6	3.5										
						0.59	248	17.12	32.23	8.19	107.4	8.52	8.59	3.0	3.3									
F3	Cloudy	Calm	16:14	17.8	S	0.57	294	17.15	17.16	32.00	32.00	8.25	8.25	117.2	117.5	9.31	9.33	9.21	0.3	0.3	0.7	1.5	1.4	1.7
						1.26	322	17.16		32.00		8.25		117.7		9.35			0.3			1.3		
						0.30	17	17.10		32.05		8.24		114.3		9.09			0.6			1.7		
					M	0.41	189	17.10	32.04	8.24	114.4	9.09	0.7	1.7										
						0.61	317	17.03	32.05	8.23	112.1	8.92	1.2	2.0										
						0.63	173	17.03	32.05	8.23	111.8	8.90	1.3	2.1										
IM3	Cloudy	Calm	17:24	15.3	S	0.73	238	17.32	17.32	31.77	31.77	8.30	8.31	124.4	124.6	9.86	9.88	9.81	0.6	0.6	2.1	2.3	2.4	4.3
						0.63	292	17.32		31.77		8.31		124.7		9.89			0.5			2.5		
						0.58	206	17.32		31.76		8.30		122.1		9.68			0.7			3.2		
					M	0.18	18	17.33	31.76	8.30	123.6	9.80	0.6	3.4										
						0.52	278	17.05	31.78	8.27	115.4	9.20	4.6	6.9										
						0.22	163	17.04	31.78	8.26	114.3	9.11	5.8	7.2										
IM4	Cloudy	Calm	17:02	17.2	S	0.51	261	17.28	17.28	31.57	31.57	8.28	8.29	121.2	121.4	9.63	9.64	9.60	0.3	0.3	1.1	2.6	2.5	3.2
						0.51	261	17.27		31.57		8.29		121.5		9.65			0.3			2.4		
						0.63	222	17.28		31.56		8.28		119.9		9.53			0.4			3.1		
					M	0.23	321	17.28	31.57	8.28	120.6	9.58	0.4	2.7										
						0.28	230	16.98	31.68	8.26	114.7	9.16	2.4	4.2										
						0.71	5	17.02	31.65	8.26	113.4	9.05	2.8	4.4										
IM5	Cloudy	Calm	16:41	15.2	S	0.69	330	17.24	17.24	31.56	31.55	8.27	8.27	119.3	119.4	9.49	9.50	9.39	0.3	0.3	1.3	1.3	1.3	2.2
						0.69	330	17.23		31.53		8.27		119.4		9.50			0.3			1.2		
						1.07	263	17.17		31.58		8.27		116.4		9.27			0.6			2.2		
					M	1.07	263	17.18	31.54	8.27	116.9	9.31	0.5	2.4										
						0.81	154	16.81	31.78	8.24	110.6	8.86	3.0	3.2										
						0.70	280	16.79	31.80	8.24	110.3	8.83	3.3	3.1										
IM6	Cloudy	Calm	16:26	16.1	S	0.54	190	17.09	17.09	31.83	31.83	8.26	8.26	117.8	118.1	9.38	9.40	9.35	0.6	0.6	1.0	4.7	4.6	3.0
						0.08	344	17.08		31.83		8.26		118.3		9.42			0.6			4.4		
						1.17	146	17.08		31.84		8.26		116.9		9.31			0.8			3.1		
					M	0.72	249	17.03	31.85	8.26	116.3	9.27	0.7	2.8										
						0.77	274	16.93	31.84	8.25	113.5	9.06	1.4	1.7										
						0.16	336	16.90	31.86	8.24	113.3	9.05	1.6	1.5										

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2021/01/29

Tide: Mid-Ebb

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
E2	Fine	Calm	13:29	8.2	S	0.69	6	17.45	17.45	31.42	31.42	8.21	8.21	112.2	112.3	8.89	8.90	8.84	2.2	2.1	3.1	2.2	2.2	3.5
						0.69	6	17.45	31.41	8.21		112.3	8.90	8.90	1.9	2.1	2.2							
					M	0.31	132	17.40	17.41	31.44	31.45	8.20	8.20	110.4	110.8	8.76	8.79	3.1	2.9	0.8	2.3	2.6		
						0.13	31	17.41	17.21	31.46	31.57	8.20	8.19	111.2	108.7	8.82	8.64	2.7	4.4		2.8			
					B	0.20	52	17.21	17.21	31.57	31.57	8.19	8.19	108.7	108.5	8.65	8.64	4.4	4.5	0.8	5.8	5.6		
						0.17	2	17.21	17.28	31.56	31.08	8.19	8.19	108.3	109.8	8.62	8.64	4.5	4.5		5.4			
IM3	Fine	Calm	12:00	15.1	S	0.75	118	17.28	17.28	31.06	31.08	8.18	8.19	119.2	119.8	9.50	9.55	9.26	0.4	0.5	0.8	1.6	1.5	
						0.75	118	17.27	17.17	31.09		8.19	120.3	9.59	9.55	0.5	1.4							
					M	0.35	144	17.17	17.17	31.42	31.43	8.15	8.15	112.1	112.6	8.93	8.97	0.8	0.9	0.8	1.9	2.0		
						0.35	144	17.17	17.20	31.43	31.57	8.15	8.13	113.1	110.8	9.01	8.82	0.9	1.2		2.1			
					B	0.13	305	17.20	17.20	31.56	31.57	8.12	8.13	111.2	110.8	8.85	8.82	1.1	1.2	0.8	1.7	2.0		
						0.46	259	17.20	17.33	31.58	31.36	8.13	8.21	110.4	116.5	8.78	9.00	1.2	2.0		2.3			
IM4	Fine	Calm	12:23	16.0	S	1.51	291	17.32	17.33	31.35	31.36	8.21	8.21	116.4	116.5	9.25	9.26	9.19	1.6	1.8	1.6	1.6	1.8	
						1.51	291	17.33	17.25	31.36		8.21	8.20	116.5	9.26	1.6	1.8							
					M	0.45	194	17.24	17.25	31.40	31.36	8.20	8.20	114.4	114.7	9.10	9.13	1.0	1.0	1.6	2.4	2.4		
						0.53	4	17.25	17.22	31.32	31.42	8.20	8.20	115.0	113.0	9.16	9.00	0.9	2.1		2.3			
					B	0.55	29	17.22	17.22	31.41	31.42	8.20	8.20	113.0	113.0	9.00	9.00	1.9	2.1	1.6	3.9	3.5		
						0.52	343	17.21	17.29	31.42	31.33	8.20	8.24	112.9	121.2	8.99	8.98	2.2	2.1		3.1			
IM5	Fine	Calm	13:05	15.1	S	0.59	305	17.29	17.29	31.29	31.33	8.24	8.24	120.9	121.2	9.62	9.64	9.49	0.8	0.8	1.2	1.9	1.9	
						0.47	201	17.29	17.23	31.36		8.24	121.4	9.65	0.7	1.8								
					M	0.99	239	17.22	17.23	31.45	31.44	8.23	8.23	116.3	117.3	9.26	9.34	0.7	0.7	1.2	1.9	2.0		
						0.52	86	17.24	17.11	31.42	31.69	8.23	8.21	118.3	112.8	9.41	8.98	0.7	2.3		2.0			
					B	0.10	187	17.11	17.11	31.70	31.69	8.21	8.21	113.4	112.8	9.03	8.98	2.1	2.3	1.2	2.2	2.1		
						0.85	293	17.11	17.32	31.67	31.58	8.21	8.23	112.1	118.3	8.93	8.98	2.4	2.1		2.0			
IM6	Fine	Calm	12:49	16.1	S	1.66	276	17.32	17.32	31.56	31.58	8.23	8.23	117.8	118.3	9.35	9.39	9.20	2.4	2.7	1.5	< 1.0	0.5	
						1.66	276	17.32	17.29	31.60		8.23	8.21	118.7	9.42	2.9	1.4		< 1.0					
					M	0.17	87	17.29	17.29	31.75	31.77	8.21	8.21	113.0	113.5	8.97	9.01	0.4	0.4	1.5	1.0	1.1		
						0.67	142	17.29	17.33	31.78	31.92	8.21	8.20	114.0	111.6	9.04	8.84	0.4	1.4		1.2			
					B	0.99	117	17.33	17.33	31.96	31.92	8.20	8.20	111.9	111.6	8.86	8.84	1.5	1.4	1.5	1.8	1.7		
						0.51	77	17.33	17.33	31.87	31.92	8.20	8.20	111.3	111.6	8.82	8.84	1.2	1.4		1.5			

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

Water Quality Monitoring Data Log Sheet

Date: 2021/01/29

Tide: Mid-Flood

Monitoring Station	Weather Condition	Sea Condition**	Sampling Time	Water Depth	Depth Level ***	Current Velocity (m/s)	Current Direction	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
								Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
F2	Fine	Calm	17:11	19.2	S	1.11	342	17.58	17.58	32.07	32.07	8.19	8.19	112.7	112.7	8.88	8.88	8.83	0.1	0.1	2.4	< 1.0	0.5	1.6
						0.48	169	17.58	17.58	32.07	32.07	8.19	8.19	112.7	112.7	8.88	8.88	8.83	0.1	0.1		< 1.0	0.5	
						0.35	163	17.58	17.58	32.07	32.07	8.17	8.18	111.1	111.5	8.75	8.78	8.83	2.8	2.9		1.4	1.3	
					0.36	179	17.58	17.58	32.06	32.06	8.18	8.18	111.8	111.8	8.80	8.80	8.83	3.0	2.9	1.2		1.3		
					0.39	319	17.59	17.60	32.08	32.08	8.16	8.16	109.6	109.0	8.63	8.58	8.58	3.9	4.1	2.8		2.9		
					1.30	281	17.60	17.60	32.08	32.08	8.16	8.16	108.3	109.0	8.52	8.58	8.58	4.3	4.1	3.0		2.9		
F3	Fine	Calm	17:48	18.0	S	0.37	274	17.37	17.37	31.85	31.85	8.26	8.26	117.0	117.1	9.26	9.27	9.21	0.4	0.5	2.4	< 1.0	0.8	3.0
						0.68	247	17.37	17.40	31.85	31.85	8.26	8.26	117.1	115.8	9.27	9.16	9.21	0.5	0.7		1.0	1.4	
						1.65	254	17.40	17.40	31.94	31.94	8.26	8.26	115.9	115.6	9.17	9.14	9.16	0.6	0.7		1.5	1.4	
					0.77	221	17.40	17.43	31.93	32.06	8.23	8.23	115.6	111.0	9.14	8.81	8.77	0.7	6.1	1.3		6.9		
					0.47	85	17.43	17.43	32.07	32.05	8.23	8.23	111.5	110.5	8.81	8.73	8.77	6.3	6.1	6.5		6.9		
					0.53	115	17.43	17.34	32.05	31.56	8.23	8.29	110.5	120.0	8.73	9.52	9.52	5.9	1.0	1.0		7.3	1.4	
IM3	Fine	Calm	19:09	15.0	S	0.64	234	17.34	17.34	31.56	31.56	8.29	8.29	120.0	120.0	9.52	9.52	9.49	1.0	1.0	3.9	1.3	1.4	2.7
						0.78	133	17.34	17.37	31.55	31.62	8.29	8.28	120.0	119.4	9.52	9.47	9.49	0.9	2.3		1.5	1.5	
						0.65	304	17.36	17.37	31.61	31.62	8.28	8.28	119.4	119.3	9.47	9.46	9.47	2.5	2.3		1.4	1.5	
					0.32	288	17.37	17.38	31.62	31.64	8.28	8.28	119.3	118.5	9.46	9.39	9.39	2.1	8.3	5.1		5.2		
					0.97	137	17.38	17.38	31.64	31.64	8.28	8.28	118.5	118.4	9.39	9.38	9.39	7.4	8.3	5.1		5.2		
					0.88	107	17.37	17.21	31.64	31.44	8.28	8.27	118.3	117.4	9.38	9.35	9.35	9.2	1.6	3.0		3.2		
IM4	Fine	Calm	18:42	17.2	S	1.28	277	17.20	17.21	31.43	31.44	8.27	8.27	117.4	117.5	9.35	9.35	9.31	1.5	1.6	5.1	3.0	3.2	6.6
						1.00	258	17.21	17.23	31.45	31.46	8.27	8.27	117.5	116.4	9.35	9.26	9.27	1.6	2.5		3.3	3.8	
						0.96	239	17.23	17.23	31.46	31.46	8.27	8.27	116.4	116.6	9.26	9.28	9.27	2.5	2.5		3.6	3.8	
					0.54	202	17.23	17.24	31.46	31.46	8.27	8.26	116.6	114.7	9.28	9.13	9.13	2.5	11.1	4.0		12.8		
					0.38	185	17.24	17.24	31.46	31.46	8.26	8.26	114.7	114.6	9.13	9.13	9.13	11.6	11.1	12.9		12.8		
					0.46	285	17.24	17.23	31.46	31.48	8.26	8.27	114.6	116.2	9.12	9.26	9.26	10.6	1.9	12.6		12.8		
IM5	Fine	Calm	18:17	15.0	S	0.99	257	17.23	17.23	31.48	31.48	8.27	8.27	116.2	116.3	9.25	9.26	9.19	1.7	1.9	4.9	1.4	1.4	4.2
						0.99	257	17.23	17.23	31.48	31.48	8.27	8.27	116.2	116.3	9.25	9.26	9.19	2.0	1.9		1.3	1.4	
						0.91	128	17.23	17.23	31.50	31.50	8.26	8.27	114.0	114.7	9.07	9.13	9.13	4.5	4.3		4.4	4.6	
					1.93	265	17.23	17.16	31.49	31.68	8.27	8.25	115.4	110.8	9.18	8.82	8.81	4.0	8.5	4.8		6.6		
					0.49	69	17.15	17.16	31.71	31.68	8.25	8.25	110.8	110.7	8.82	8.81	8.81	8.8	8.5	6.4		6.6		
					0.80	47	17.16	17.29	31.65	31.69	8.25	8.28	110.6	118.5	8.80	8.81	8.81	8.1	2.8	6.8		6.6		
IM6	Fine	Calm	18:01	16.1	S	0.49	19	17.29	17.29	31.68	31.69	8.28	8.28	118.5	118.6	9.41	9.41	9.38	2.6	2.8	5.8	2.6	2.7	6.5
						0.49	19	17.29	17.30	31.69	31.69	8.28	8.28	118.6	117.8	9.41	9.34	9.38	2.9	5.5		2.8	2.7	
						0.26	159	17.30	17.30	31.69	31.69	8.27	8.28	117.5	118.0	9.32	9.36	9.34	5.7	5.5		5.3	5.0	
					0.64	285	17.30	17.31	31.68	31.73	8.28	8.27	118.0	115.6	9.36	9.17	9.13	5.2	9.2	4.6		11.8		
					0.03	198	17.30	17.31	31.72	31.73	8.27	8.27	115.6	115.1	9.17	9.13	9.13	8.2	9.2	11.4		11.8		
					0.52	291	17.31	17.31	31.74	31.73	8.26	8.27	114.5	115.1	9.08	9.13	9.13	10.2	9.2	12.1		11.8		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

\*\*\* S: 1 m below the sea surface; M: mid-depth; B: 1 m above the seabed

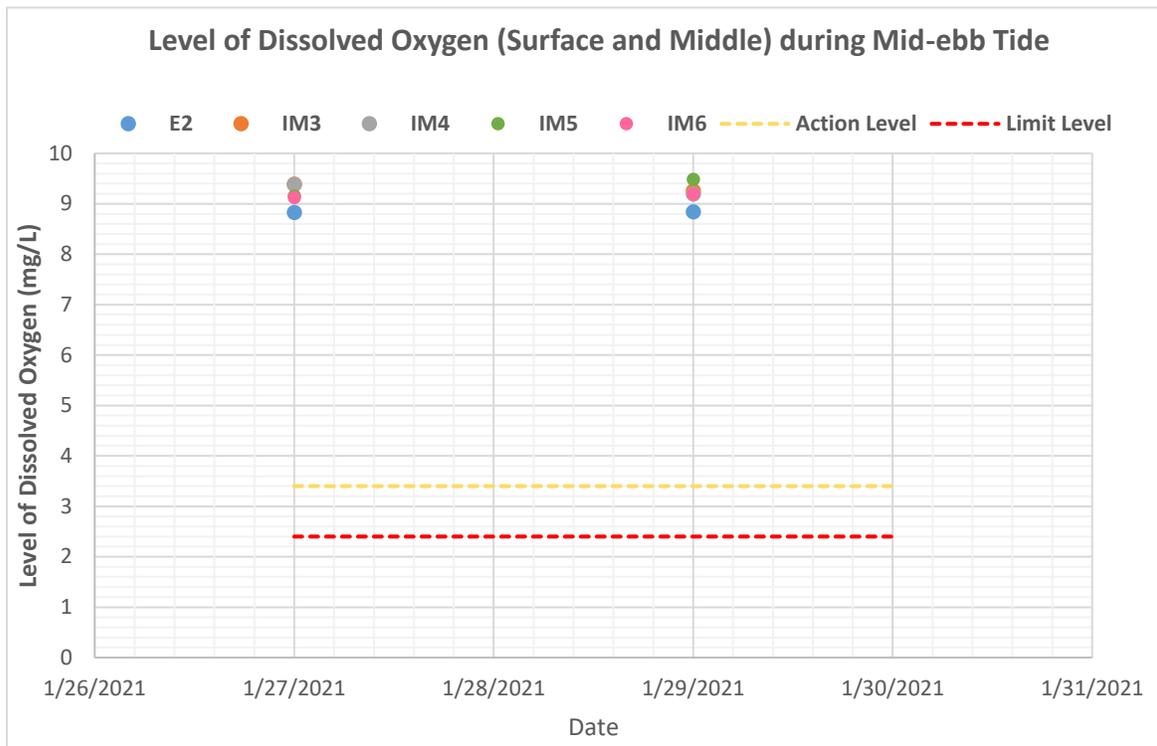


Figure G1a: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides between 27 and 29 January 2021.

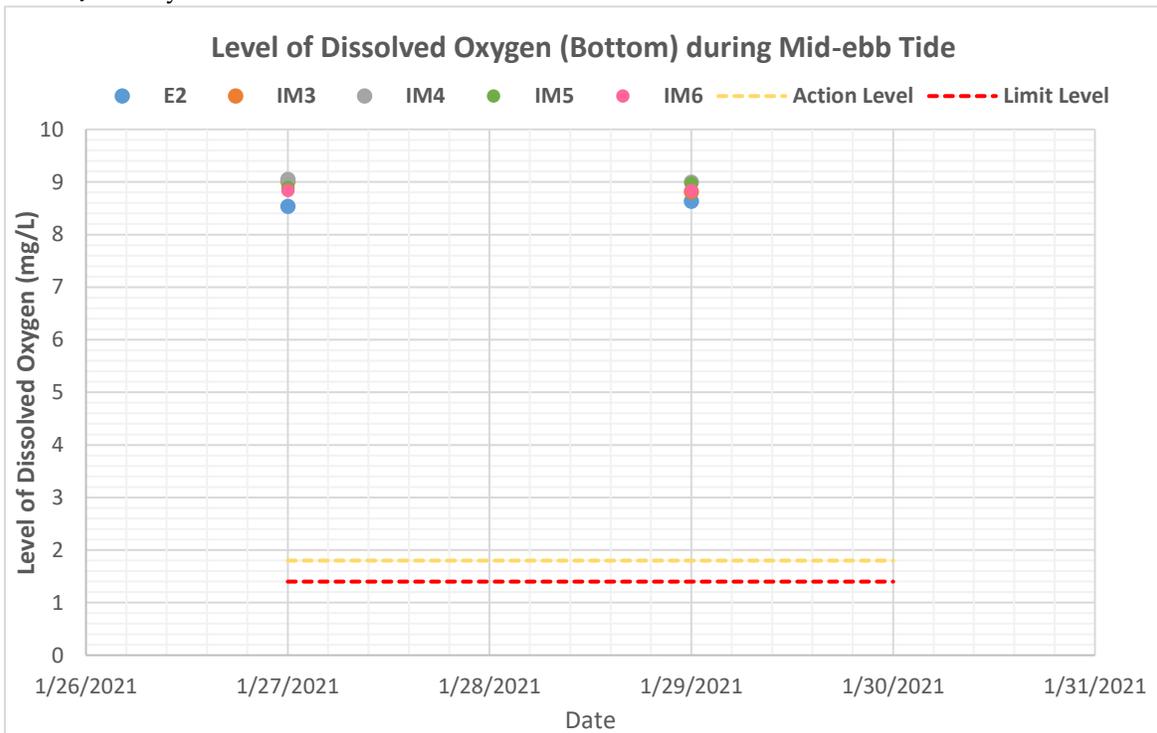


Figure G1b: Levels of Bottom Dissolved Oxygen (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides between 27 and 29 January 2021.

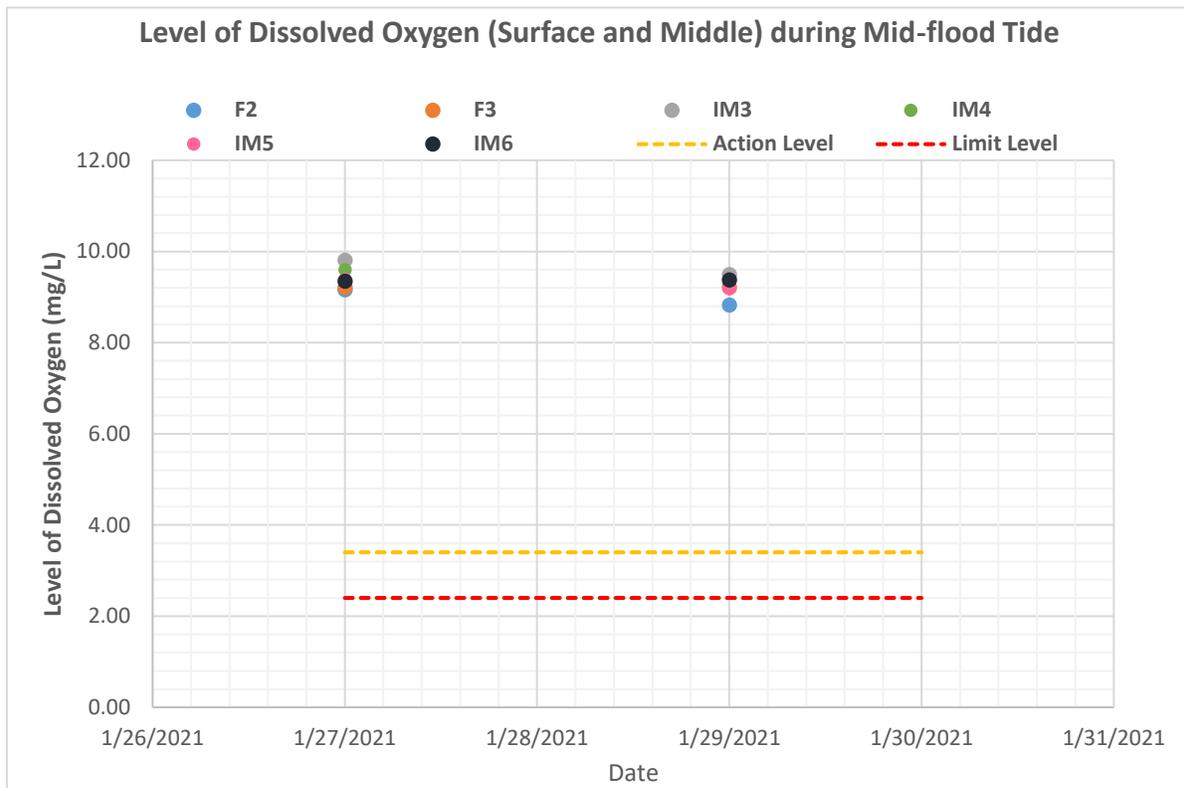


Figure G2a: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides between 27 and 29 January 2021.

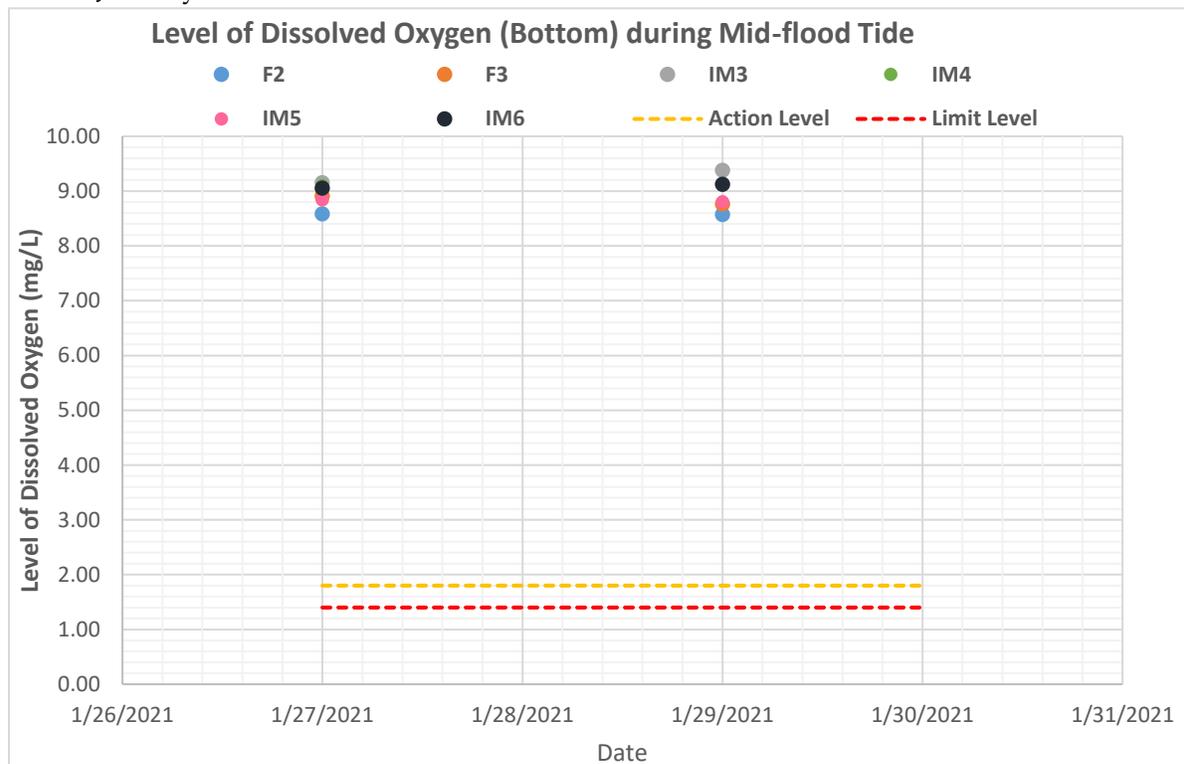


Figure G2b: Levels of Bottom Dissolved Oxygen (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides between 27 and 29 January 2021

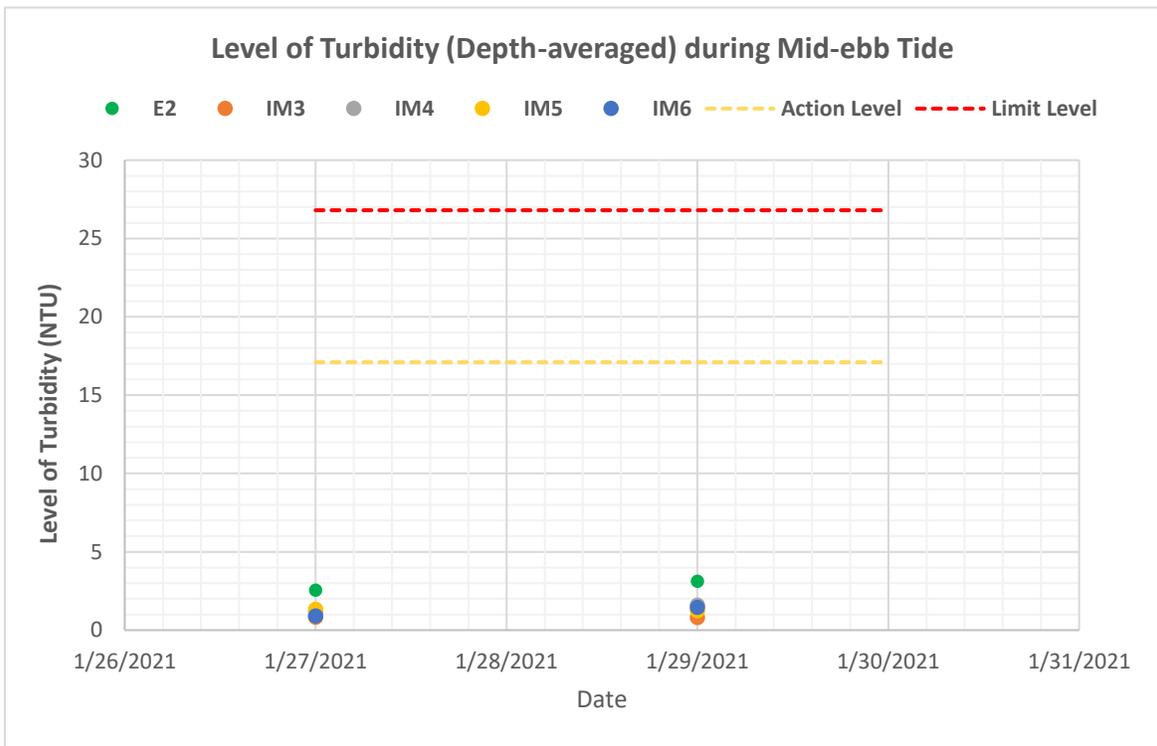


Figure G3: Levels of Depth-averaged Turbidity (NTU) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides between 27 and 29 January 2021.

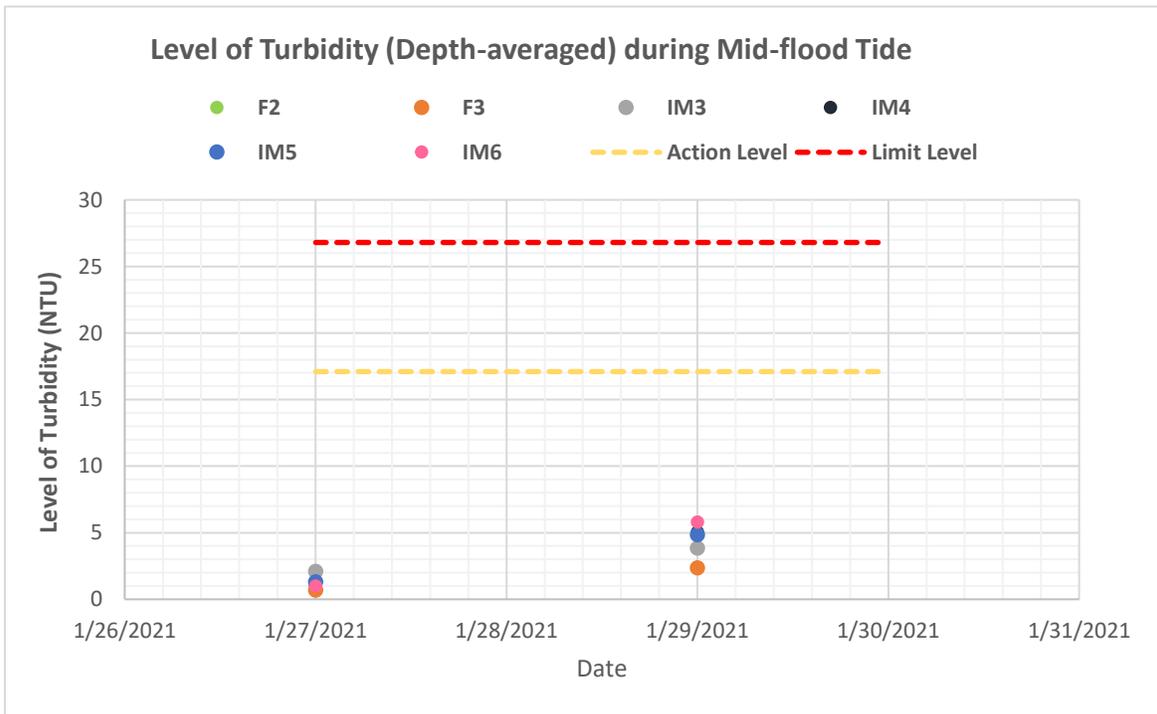


Figure G4: Levels of Depth-averaged Turbidity (NTU) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides between 27 and 29 January 2021.

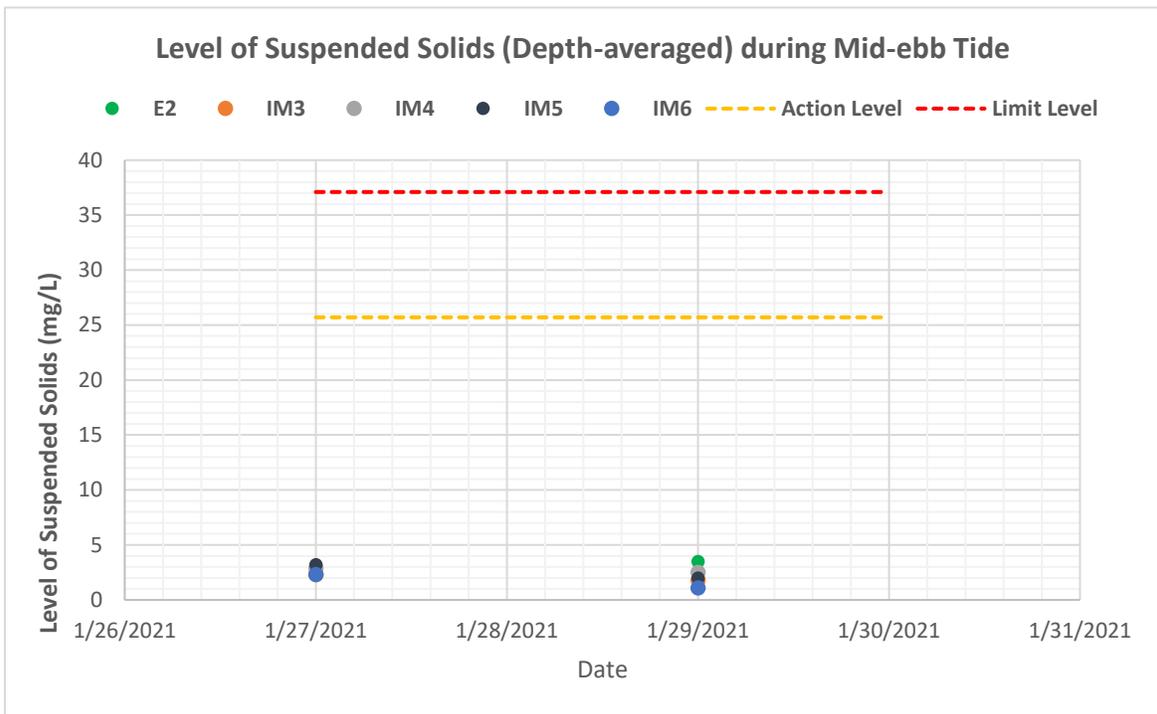


Figure G5: Levels of Depth-averaged Suspended Solids (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides between 27 and 29 January 2021.

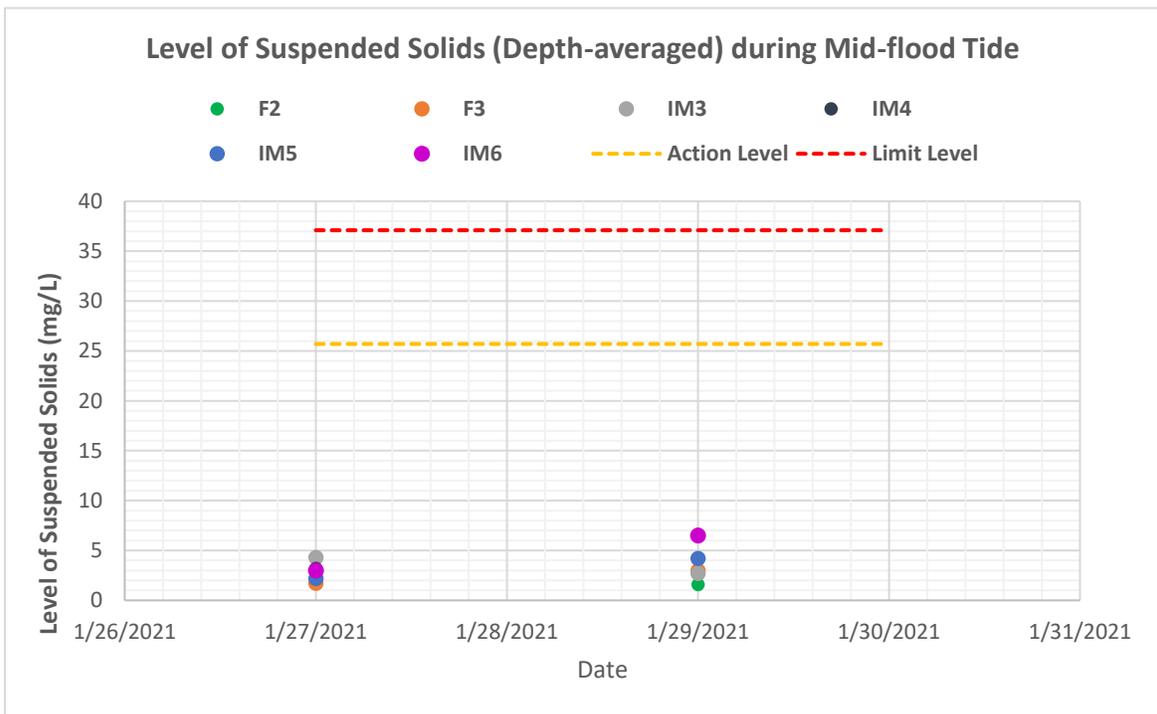


Figure G6: Levels of Depth-averaged Suspended Solids (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides between 27 and 29 January 2021.

## **ANNEX H**

### **CALIBRATION CERTIFICATES FOR MARINE WATER QUALITY MONITORING EQUIPMENT**



## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

<b>CONTACT:</b>	SAMUEL LAI	<b>WORK ORDER:</b>	HK2100287
<b>CLIENT:</b>	EGS (ASIA) LTD	<b>SUB- BATCH:</b>	0
<b>ADDRESS:</b>	15/F., NORTH POINT INDUSTRIAL BUILDING, 499 KING'S ROAD, NORTH POINT, HONG KONG	<b>LABORATORY:</b>	HONG KONG
		<b>DATE RECEIVED:</b>	05-Jan-2021
		<b>DATE OF ISSUE:</b>	06-Jan-2021

### SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

The calibration was performed by client in ALS Laboratory.

Equipment Type:	Multifunctional Meter
Service Nature:	Performance Check
Scope:	Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature
Brand Name/ Model No.:	YSI 6920-V2-M
Serial No./ Equipment No.:	08C100240 / MPP30
Date of Calibration:	05-January-2021

### GENERAL COMMENTS

This is the Final Report and supersedes any preliminary report with this batch number.

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganic

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK2100287  
**SUB- BATCH:** 0  
**DATE OF ISSUE:** 06-Jan-2021  
**CLIENT:** EGS (ASIA) LTD

**Equipment Type:** Multifunctional Meter  
**Brand Name/ Model No.:** YSI 6920-V2-M  
**Serial No./ Equipment No.:** 08C100240 / MPP30  
**Date of Calibration:** 05-January-2021

**Date of Next Calibration:** 05-April-2021

**PARAMETERS:**

**Dissolved Oxygen** Method Ref: APHA (21st edition), 4500G: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.61	3.47	-0.14
5.82	5.86	+0.04
8.87	8.97	+0.10
	Tolerance Limit (mg/L)	±0.20

**pH Value** Method Ref: APHA (21st edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.02	+0.02
7.0	7.01	+0.01
10.0	9.87	-0.13
	Tolerance Limit (pH unit)	±0.20

**Turbidity** Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.3	+7.5
40	38.3	-4.3
80	78.5	-1.9
	Tolerance Limit (%)	±10.0

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

Ms. Lin Wai Yu, Iris  
 Assistant Manager - Inorganic

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2100287  
SUB- BATCH: 0  
DATE OF ISSUE: 06-Jan-2021  
CLIENT: EGS (ASIA) LTD

Equipment Type: Multifunctional Meter  
Brand Name/  
Model No.: YSI 6920-V2-M  
Serial No./  
Equipment No.: 08C100240 / MPP30  
Date of Calibration: 05-January-2021

Date of Next Calibration: 05-April-2021

## PARAMETERS:

### Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.18	--
10	10.06	+0.6
20	19.97	-0.2
30	29.95	-0.2
	Tolerance Limit (%)	±10.0

### Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical  
Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
8.5	8.82	+0.3
23.0	23.60	+0.6
36.0	36.25	+0.3
	Tolerance Limit (°C)	±2.0

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

Ms. Lin Wai Yu, Iris  
Assistant Manager - Inorganic

## **ANNEX I**

### **EVENT AND ACTION PLAN FOR MARINE WATER QUALITY MONITORING**

**TABLE I.1 EVENT AND ACTION PLAN FOR MARINE WATER QUALITY MONITORING**

Event	Action			
	ET	IEC	Contractor(s)	Project Proponents
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s) and Project Proponents.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing.</li> </ol>
Action Level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>3. Identify source(s) of impact and record in notification of exceedance;</li> <li>4. Inform IEC, Contractor(s) and Project Proponents;</li> <li>5. Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>2. Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Check plant and equipment and rectify unacceptable practice;</li> <li>3. Consider changes of working methods;</li> <li>4. Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>5. Implement the agreed mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>3. Ensure additional mitigation measures are properly implemented.</li> </ol>

Event	Action			
	ET	IEC	Contractor(s)	Project Proponents
Limit Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat <i>in situ</i> measurement to confirm findings;</li> <li>Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>Identify source(s) of impact and record in notification of exceedance;</li> <li>Inform IEC, Contractor(s), Project Proponents and EPD;</li> <li>Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Check plant and equipment and rectify unacceptable practice;</li> <li>Critically review the need to change working methods;</li> <li>Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>Implement the agreed mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>Ensure additional mitigation measures are properly implemented;</li> <li>Request Contractor(s) to critically review the working methods.</li> </ol>
Limit Level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat <i>in situ</i> measurement to confirm findings;</li> <li>Check monitoring data, plant, equipment and Contractor(s)'s working methods;</li> <li>Identify source(s) of impact and record in notification of exceedance;</li> <li>Inform IEC, Contractor(s), Project Proponents and EPD;</li> <li>Discuss with IEC and Contractor(s) on additional mitigation measures and ensure that they are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor(s)'s working methods;</li> <li>Discuss with ET and Contractor(s) on additional mitigation measures and advise Project Proponents accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Check plant and equipment and rectify unacceptable practice;</li> <li>Critically review the need to change working methods;</li> <li>Discuss with ET and IEC on additional mitigation measures and propose them to Project Proponents within 3 working days;</li> <li>Implement the agreed mitigation measures;</li> <li>As directed by Project Proponents, slow down or stop all or part of the marine construction works until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Discuss with the IEC on the proposed additional mitigation measures and agree on the mitigation measures to be implemented;</li> <li>Ensure additional mitigation measures are properly implemented;</li> <li>Request Contractor(s) to critically review the working methods;</li> <li>Consider and instruct, if necessary, the Contractor(s) to slow down or to stop all or part of the marine construction works until no exceedance of Limit Level.</li> </ol>

## **ANNEX J**

### **CUMULATIVE STATISTICS ON EXCEEDANCES, ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION**

**TABLE J.1 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-01/558/2018/A**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Mammal (STG & ANI) (running quarterly)	Action Limit	N/A N/A	N/A N/A

**TABLE J.2 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-01/558/2018/A**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 31 Jan 2021)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

**TABLE J.3 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-02/558/2018/A**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Water Quality (DO) (surface & middle)	Action Limit	0 0	0 0
Marine Water Quality (DO) (bottom)	Action Limit	0 0	0 0
Marine Water Quality (Turbidity) (depth-averaged)	Action Limit	0 0	0 0
Marine Water Quality (SS) (depth-averaged)	Action Limit	0 0	0 0

**TABLE J.4 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-02/558/2018/A**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 31 Jan 2021)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

**TABLE J.5 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-03/558/2018/A**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Water Quality (DO) (surface & middle)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (DO) (bottom)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (Turbidity) (depth-averaged)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (SS) (depth-averaged)	Action Limit	N/A N/A	N/A N/A

**TABLE J.6 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-03/558/2018/A**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 31 Jan 2021)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

## **ANNEX K**

### **MONITORING SCHEDULE FOR THE REPORTING PERIOD**

**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Marine Water Quality Monitoring Schedule (January 2021)**

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

Remarks:

Group 2 - During construction at the Double Berth Jetty to West Lamma Channel (LPS KP0.0 - 14.5) [WQM stations: IM3, IM4, IM5, IM6, E2 (Ebb), F2 (Flood) & F3 (Flood)]

## **ANNEX L**

### **TENTATIVE SCHEDULE FOR THE NEXT REPORTING PERIOD**

**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Tentative Marine Water Quality Monitoring Schedule (February 2021)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1/Feb	2/Feb	3/Feb	4/Feb	5/Feb	6/Feb
	Marine Water Quality Monitoring: Group 2		Marine Water Quality Monitoring: Group 2		Marine Water Quality Monitoring: Group 2	
7/Feb	8/Feb	9/Feb	10/Feb	11/Feb	12/Feb	13/Feb
14/Feb	15/Feb	16/Feb	17/Feb	18/Feb	19/Feb	20/Feb
21/Feb	22/Feb	23/Feb	24/Feb	25/Feb	26/Feb	27/Feb
	Marine Water Quality Monitoring: Group 1		Marine Water Quality Monitoring: Group 1			
28/Feb						

Remarks:

Group 1 - During construction at the pipeline shore approach at LPS (LPS KP17.4 - 18.2), West Lamma Channel (LPS KP14.5 - 17.4) [WQM stations: IM1, IM2, E1 (Ebb) & F1 (Flood)]

Group 2 - During construction at the Double Berth Jetty to West Lamma Channel (LPS KP0.0 - 14.5) [WQM stations: IM3, IM4, IM5, IM6, E2 (Ebb), F2 (Flood) & F3 (Flood)]

Marine water quality monitoring is proposed to be conducted within the works area(s) for the associated marine-based activities anticipated to be undertaken ending up to the last event of monitoring for the week(s).

## **ANNEX M**

### **RECORDS OF OPERATING SPEEDS AND MARINE TRAVEL ROUTES OF WORKING VESSELS**

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	26-JAN-2021 08:28:46	819542.6	838547.4	22.31487	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:32:52	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:34:42	819540.4	838544.3	22.31485	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:38:22	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:41:52	819538.1	838544.3	22.31483	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:44:34	819539.2	838547.4	22.31484	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:47:11	819537	838544.3	22.31482	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:50:22	819537	838544.3	22.31482	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:51:22	819537	838547.4	22.31482	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:56:53	819537	838544.3	22.31482	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 08:59:32	819538.1	838547.4	22.31483	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:01:52	819537	838548.4	22.31482	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:04:23	819535.9	838544.3	22.31481	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:08:02	819538.1	838548.4	22.31483	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:11:50	819538.1	838543.3	22.31483	114.19896	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:12:30	819538.1	838542.2	22.31483	114.19895	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:16:30	819539.2	838543.3	22.31484	114.19896	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:20:30	819538.1	838548.4	22.31483	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:23:22	819539.2	838548.4	22.31484	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:25:10	819537	838547.4	22.31482	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:29:29	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:32:09	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:35:29	819538.1	838544.3	22.31483	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:38:09	819540.4	838544.3	22.31485	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:40:28	819541.5	838544.3	22.31486	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:43:40	819541.5	838543.3	22.31486	114.19896	0.1	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:47:09	819538.1	838547.4	22.31483	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:48:32	819539.2	838544.3	22.31484	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:51:50	819539.2	838544.3	22.31484	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:56:00	819541.5	838544.3	22.31486	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 09:58:30	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:02:12	819541.5	838547.4	22.31486	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:05:39	819539.2	838544.3	22.31484	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:10:39	819540.4	838543.3	22.31485	114.19896	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:14:39	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:16:51	819541.5	838547.4	22.31486	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:18:30	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:22:20	819539.2	838548.4	22.31484	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:26:10	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:27:51	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:31:09	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:35:30	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:37:49	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:41:10	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:44:20	819540.4	838544.3	22.31485	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:47:30	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:50:49	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:53:51	819538.1	838550.5	22.31483	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 10:58:58	819541.5	838540.2	22.31486	114.19893	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:01:40	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:04:10	819540.4	838544.3	22.31485	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:08:30	819540.4	838543.3	22.31485	114.19896	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:11:11	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:14:30	819542.6	838543.3	22.31487	114.19896	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:15:10	819543.7	838540.2	22.31488	114.19893	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:19:50	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:22:31	819539.2	838544.3	22.31484	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:25:50	819540.4	838544.3	22.31485	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:29:10	819540.4	838547.4	22.31485	114.199	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:32:29	819541.5	838544.3	22.31486	114.19897	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:41:40	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:44:38	819541.5	838548.4	22.31486	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:47:10	819540.4	838548.4	22.31485	114.19901	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:50:19	819543.7	838547.4	22.31488	114.199	0.1	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:53:29	819551.4	838552.5	22.31495	114.19905	0	184.2	ShipXY

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	26-JAN-2021 11:56:39	819548.1	838550.5	22.31492	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 11:58:49	819548.1	838550.5	22.31492	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:02:58	819552.5	838550.5	22.31496	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:05:38	819552.5	838551.5	22.31496	114.19904	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:07:52	819553.6	838550.5	22.31497	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:11:00	819552.5	838551.5	22.31496	114.19904	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:14:20	819552.5	838551.5	22.31496	114.19904	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:17:31	819549.2	838550.5	22.31493	114.19903	0	184.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:20:29	819549.2	838548.4	22.31493	114.19901	0	2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:22:20	819542.6	838547.4	22.31487	114.199	0.7	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:26:39	819549.2	838544.3	22.31493	114.19897	0.2	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:31:49	819547	838543.3	22.31491	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:35:30	819544.8	838544.3	22.31489	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:36:49	819543.7	838543.3	22.31488	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:40:10	819544.8	838544.3	22.31489	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:44:29	819541.5	838544.3	22.31486	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:46:40	819542.6	838543.3	22.31487	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:49:50	819543.7	838544.3	22.31488	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:52:51	819542.6	838544.3	22.31487	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 12:59:20	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:02:41	819544.8	838543.3	22.31489	114.19896	0.1	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:05:59	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:08:49	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:10:59	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:13:50	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:17:20	819545.9	838543.3	22.3149	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:20:40	819545.9	838542.2	22.3149	114.19895	0.1	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:24:00	819545.9	838543.3	22.3149	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:26:50	819545.9	838542.2	22.3149	114.19895	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:28:00	819545.9	838543.3	22.3149	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:32:20	819544.8	838543.3	22.31489	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:33:40	819543.7	838543.3	22.31488	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:37:01	819544.8	838544.3	22.31489	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:41:49	819547	838544.3	22.31491	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:44:39	819545.9	838543.3	22.3149	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:47:40	819547	838543.3	22.31491	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:49:29	819547	838543.3	22.31491	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:52:21	819547	838543.3	22.31491	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:55:41	819545.9	838543.3	22.3149	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 13:59:40	819542.6	838543.3	22.31487	114.19896	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:04:29	819543.7	838544.3	22.31488	114.19897	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:06:30	819544.8	838547.4	22.31489	114.199	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:07:49	819544.8	838547.4	22.31489	114.199	0	188.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:11:49	819551.4	838551.5	22.31495	114.19904	0.4	44.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:14:30	819555.9	838555.6	22.31499	114.19908	0.1	37	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:17:00	819530.4	838531.9	22.31476	114.19885	0.1	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:19:49	819530.4	838535	22.31476	114.19888	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:22:30	819533.7	838531.9	22.31479	114.19885	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:25:41	819532.6	838534	22.31478	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:27:50	819532.6	838534	22.31478	114.19887	0.3	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:29:50	819532.6	838534	22.31478	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:31:30	819534.8	838536.1	22.3148	114.19889	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:35:31	819534.8	838534	22.3148	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:38:40	819535.9	838531.9	22.31481	114.19885	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:39:09	819534.8	838534	22.3148	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:43:20	819533.7	838534	22.31479	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:43:50	819533.7	838534	22.31479	114.19887	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:47:50	819532.6	838531.9	22.31478	114.19885	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:50:00	819534.8	838531.9	22.3148	114.19885	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:53:29	819534.8	838535	22.3148	114.19888	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:56:29	819534.8	838531.9	22.3148	114.19885	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 14:59:49	819537	838527.8	22.31482	114.19881	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:00:19	819535.9	838527.8	22.31481	114.19881	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:05:10	819534.8	838527.8	22.3148	114.19881	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:08:20	819537	838534	22.31482	114.19887	0	222.4	ShipXY

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	26-JAN-2021 15:10:29	819532.6	838529.9	22.31478	114.19883	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:14:29	819532.6	838529.9	22.31478	114.19883	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:17:30	819534.8	838529.9	22.3148	114.19883	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:20:40	819533.7	838527.8	22.31479	114.19881	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:23:09	819532.6	838529.9	22.31478	114.19883	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:26:28	819530.4	838529.9	22.31476	114.19883	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:29:29	819532.6	838527.8	22.31478	114.19881	0	222.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:31:40	819524.8	838538.1	22.31471	114.19891	0	140.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:35:09	819528.2	838538.1	22.31474	114.19891	0.2	140.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:38:49	819528.2	838535	22.31474	114.19888	0	140.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:40:52	819529.3	838535	22.31475	114.19888	0	140.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:44:28	819531.5	838536.1	22.31477	114.19889	0	140.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:47:40	819532.6	838580.4	22.31478	114.19932	0.8	106.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:50:40	819537	838602	22.31482	114.19953	0.3	259.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:51:19	819537	838593.8	22.31482	114.19945	0.4	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:55:18	819535.9	838591.7	22.31481	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 15:58:12	819537	838591.7	22.31482	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:02:40	819535.9	838591.7	22.31481	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:05:42	819537	838591.7	22.31482	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:08:50	819537	838589.6	22.31482	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:11:19	819540.4	838589.6	22.31485	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:13:29	819538.1	838589.6	22.31483	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:17:39	819535.9	838589.6	22.31481	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:18:40	819535.9	838589.6	22.31481	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:23:18	819534.8	838589.6	22.3148	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:26:40	819537	838588.6	22.31482	114.1994	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:29:40	819535.9	838589.6	22.31481	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:30:59	819534.8	838591.7	22.3148	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:35:40	819537	838588.6	22.31482	114.1994	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:38:30	819535.9	838589.6	22.31481	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:44:49	819535.9	838591.7	22.31481	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:45:28	819535.9	838593.8	22.31481	114.19945	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:49:31	819537	838591.7	22.31482	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:52:10	819537	838589.6	22.31482	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:55:31	819537	838591.7	22.31482	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 16:59:01	819537	838589.6	22.31482	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:02:21	819537	838591.7	22.31482	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:05:31	819539.3	838589.6	22.31484	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:08:09	819539.3	838591.7	22.31484	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:11:53	819539.3	838589.6	22.31484	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:14:20	819538.1	838591.7	22.31483	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:15:40	819540.4	838591.7	22.31485	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:18:41	819540.4	838591.7	22.31485	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:22:59	819541.5	838591.7	22.31486	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:26:40	819541.5	838589.6	22.31486	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:28:29	819541.5	838591.7	22.31486	114.19943	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:31:40	819541.5	838589.6	22.31486	114.19941	0	268.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:36:00	819539.3	838595.8	22.31484	114.19947	0.3	120.5	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:38:40	819481.7	838711.2	22.31432	114.20059	3.3	117.7	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:41:40	819210.4	838906	22.31187	114.20248	4	178.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:44:31	818879.3	838733	22.30888	114.2008	4.3	221.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:50:50	818149.5	838183.9	22.30229	114.19547	5	225.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:53:41	817826.1	837867.6	22.29937	114.1924	5	230.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:56:50	817538.2	837454.4	22.29677	114.18839	5.2	238.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 17:59:50	817294.5	837044.3	22.29457	114.18441	5	241.4	ShipXY

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	26-JAN-2021 18:00:00	817282.3	837022.6	22.29446	114.1842	5.1	241.9	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:02:51	817069.7	836622.8	22.29254	114.18032	4.9	244.3	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:03:40	817016.6	836506.4	22.29206	114.17919	5.2	247.3	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:05:52	816922.4	836177.6	22.29121	114.176	5	260.6	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:06:00	816919.1	836151.9	22.29118	114.17575	5	261.6	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:08:41	816853.8	835736.6	22.29059	114.17172	5.1	266.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:12:00	816897	835204.8	22.29098	114.16656	5.1	278.5	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:14:50	817001.1	834773.1	22.29192	114.16237	4.9	278.3	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:15:31	817020	834665.9	22.29209	114.16133	5.2	281.8	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:17:52	817131.8	834319.7	22.2931	114.15797	5.1	289.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:20:51	817228.2	833860.1	22.29397	114.15351	5.1	278.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:23:51	817277	833392.2	22.29441	114.14897	5.1	273	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:26:59	817291.5	832909	22.29454	114.14428	4.9	271.7	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:30:00	817307.1	832464.8	22.29468	114.13997	4.7	269.8	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:32:59	817268.5	832060.9	22.29433	114.13605	4.5	256.7	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:35:50	817213.2	831675.5	22.29383	114.13231	4.4	265.5	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:41:50	817120.5	830889.2	22.29299	114.12468	4.4	260.7	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:44:50	817044.2	830488.3	22.2923	114.12079	4.3	257.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:48:00	816931.4	830080.2	22.29128	114.11683	4.3	249.4	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:50:50	816807.5	829719.4	22.29016	114.11333	4.4	248.5	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:51:00	816800.9	829701.9	22.2901	114.11316	4.3	248.2	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:53:50	816650.5	829331.9	22.28874	114.10957	4.6	248.6	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:57:01	816393.7	828968	22.28642	114.10604	4.5	218.8	ShipXY
Pacific 28	Derrick Lighter	26-JAN-2021 18:59:40	816175.7	828701	22.28445	114.10345	4.3	239.4	ShipXY

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	27-JAN-2021 07:03:20	802602.3	814273.7	22.16175	113.96364	0.3	305	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:09:30	802602.3	814272.7	22.16175	113.96363	0.4	117.1	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:17:30	802603.4	814272.7	22.16176	113.96363	0.3	328.7	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:22:59	802603.4	814272.7	22.16176	113.96363	0.4	328.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:27:29	802603.4	814272.7	22.16176	113.96363	0.3	328.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:35:51	802603.4	814270.6	22.16176	113.96361	0.3	90.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:38:31	802602.3	814272.7	22.16175	113.96363	0.1	90.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:46:19	802602.3	814270.6	22.16175	113.96361	0.3	16.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:52:09	802603.4	814272.7	22.16176	113.96363	0.3	218.7	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 07:59:40	802603.4	814272.7	22.16176	113.96363	0.3	80.1	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:05:19	802602.3	814272.7	22.16175	113.96363	0.5	316.4	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:09:59	802603.4	814272.7	22.16176	113.96363	0.5	66.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:14:39	802603.4	814270.6	22.16176	113.96361	0.4	12.7	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:18:29	802603.4	814270.6	22.16176	113.96361	0.5	29.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:28:30	802603.4	814270.6	22.16176	113.96361	0.3	289	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:35:19	802603.4	814270.6	22.16176	113.96361	0.3	60.5	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:40:30	802603.4	814272.7	22.16176	113.96363	0.5	115.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:47:00	802604.5	814272.7	22.16177	113.96363	0.3	236.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:51:50	802604.5	814270.6	22.16177	113.96361	0.3	328.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 08:59:20	802603.4	814270.6	22.16176	113.96361	0.3	100.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:02:39	802604.5	814270.6	22.16177	113.96361	0.3	100.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:11:20	802605.6	814270.6	22.16178	113.96361	0.4	318	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:16:10	802605.6	814270.6	22.16178	113.96361	0.3	3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:21:49	802605.6	814270.6	22.16178	113.96361	0.6	319.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:29:40	802592.3	814277.8	22.16166	113.96368	0.7	309.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:40:09	802606.7	814270.6	22.16179	113.96361	0.3	83.1	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:47:44	802607.9	814272.7	22.1618	113.96363	0.4	88.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:52:44	802606.7	814270.6	22.16179	113.96361	0.3	333	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 09:59:45	802606.7	814270.6	22.16179	113.96361	0.5	80.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:05:04	802606.7	814270.6	22.16179	113.96361	0.3	321.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:11:45	802607.9	814272.7	22.1618	113.96363	0.3	309.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:17:06	802606.7	814270.6	22.16179	113.96361	0.3	43.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:22:54	802606.7	814269.6	22.16179	113.9636	0.3	254.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:29:06	802606.7	814269.6	22.16179	113.9636	0.5	14.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:35:45	802606.8	814266.5	22.16179	113.96357	0.3	347.4	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:41:44	802606.8	814266.5	22.16179	113.96357	0.4	163.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:46:04	802606.8	814266.5	22.16179	113.96357	0.3	258.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:52:54	802606.8	814266.5	22.16179	113.96357	0.3	280.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 10:53:44	802606.8	814266.5	22.16179	113.96357	0.2	280.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:03:15	802607.9	814265.5	22.1618	113.96356	0.3	321.7	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:08:44	802607.9	814265.5	22.1618	113.96356	0.4	207.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:15:35	802607.9	814265.5	22.1618	113.96356	0.3	329.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:23:14	802607.9	814264.4	22.1618	113.96355	0.5	139	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:29:25	802597.9	814280.9	22.16171	113.96371	0.4	120.9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:35:53	802580.2	814265.4	22.16155	113.96356	0.3	156	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:41:34	802636.6	814282	22.16206	113.96372	0.7	14.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:47:44	802933.4	814265.9	22.16474	113.96356	3.3	42.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:53:44	803382.4	814698.7	22.1688	113.96775	3.1	46	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 11:59:44	803779.3	815150	22.17239	113.97212	3.3	54.7	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:05:45	804143	815638.3	22.17568	113.97685	3.2	54.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:11:45	804473.4	816115.2	22.17867	113.98147	3.1	56.1	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:17:55	804813.8	816678.7	22.18175	113.98693	3.5	58.5	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:23:45	805135.3	817251.5	22.18466	113.99248	3.9	46.1	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:29:25	805568.8	817746	22.18858	113.99727	3.9	43.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:35:44	806193.9	818169.5	22.19423	114.00137	3.8	32.5	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:41:45	806756	818576.5	22.19931	114.00531	3.8	33.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:47:45	807315.8	819011.2	22.20437	114.00952	3.7	50.5	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:53:54	807918.8	819452.2	22.20982	114.01379	4	37.3	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 12:59:35	808467.6	819894	22.21478	114.01807	4.1	41.6	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:05:06	809025.3	820311.2	22.21982	114.02211	3.8	35.4	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:11:44	809744.7	820676.9	22.22632	114.02565	4	9	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:15:44	810234	820761.9	22.23074	114.02647	4	5.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:23:44	810846.3	820882.1	22.23627	114.02763	2.8	9.5	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:29:35	811283.3	821222.7	22.24022	114.03093	3.4	78.4	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:35:55	811484.6	821551.7	22.24204	114.03412	1.4	122.3	ShipXY

## Pacific 28 (Derrick Lighter)

## Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Pacific 28	Derrick Lighter	27-JAN-2021 13:41:05	811475.7	821561	22.24196	114.03421	0.1	122.8	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:46:35	811477.9	821544.5	22.24198	114.03405	0.1	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:51:05	811483.5	821550.7	22.24203	114.03411	0.3	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 13:57:56	811485.7	821552.8	22.24205	114.03413	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:01:06	811484.6	821550.7	22.24204	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:11:35	811483.5	821547.6	22.24203	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:17:36	811479	821546.6	22.24199	114.03407	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:20:56	811482.4	821550.7	22.24202	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:27:55	811482.4	821547.6	22.24202	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:35:14	811482.4	821550.7	22.24202	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:38:55	811482.4	821547.6	22.24202	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:46:55	811480.1	821550.7	22.242	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:50:15	811480.1	821550.7	22.242	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 14:59:15	811481.3	821550.7	22.24201	114.03411	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:03:15	811479	821547.6	22.24199	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:15:35	811479	821547.6	22.24199	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:22:16	811479	821547.6	22.24199	114.03408	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:29:14	811476.8	821546.6	22.24197	114.03407	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:35:54	811476.8	821546.6	22.24197	114.03407	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:39:26	811479	821546.6	22.24199	114.03407	0	276.2	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:46:56	811479	821546.6	22.24199	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:50:16	811479	821546.6	22.24199	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 15:59:54	811479	821547.6	22.24199	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:02:46	811479	821547.6	22.24199	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:07:35	811481.3	821544.5	22.24201	114.03405	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:14:56	811482.4	821546.6	22.24202	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:21:55	811483.5	821543.5	22.24203	114.03404	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:25:15	811481.3	821546.6	22.24201	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:34:17	811481.3	821547.6	22.24201	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:41:15	811481.3	821546.6	22.24201	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:47:34	811482.4	821547.6	22.24202	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:52:35	811483.5	821546.6	22.24203	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 16:59:34	811482.4	821550.7	22.24202	114.03411	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:02:36	811485.7	821551.7	22.24205	114.03412	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:11:36	811485.7	821547.6	22.24205	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:16:16	811485.7	821546.6	22.24205	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:23:56	811484.6	821547.6	22.24204	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:27:24	811484.6	821547.6	22.24204	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:33:54	811482.4	821550.7	22.24202	114.03411	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:39:36	811481.3	821547.6	22.24201	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:44:36	811482.4	821547.6	22.24202	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 17:50:16	811481.3	821547.6	22.24201	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:05:35	811481.3	821547.6	22.24201	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:10:15	811479	821546.6	22.24199	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:15:56	811480.1	821547.6	22.242	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:19:47	811482.4	821547.6	22.24202	114.03408	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:27:14	811480.1	821546.6	22.242	114.03407	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:38:55	811476.8	821543.5	22.24197	114.03404	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:44:12	811476.8	821543.5	22.24197	114.03404	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:53:35	811476.8	821544.5	22.24197	114.03405	0	0	ShipXY
Pacific 28	Derrick Lighter	27-JAN-2021 18:57:55	811476.8	821544.5	22.24197	114.03405	0	0	ShipXY

## Chang Sheng 2002 (Hopper Barge)

### Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:02:52	819527.1	838531.9	22.31473	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:06:24	819526	838531.9	22.31472	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:11:02	819524.8	838534	22.31471	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:14:52	819527.1	838531.9	22.31473	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:16:01	819527.1	838531.9	22.31473	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:19:12	819527.1	838531.9	22.31473	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:23:42	819526	838534	22.31472	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:24:13	819528.2	838535	22.31474	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:28:33	819524.8	838534	22.31471	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:32:23	819528.2	838534	22.31474	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:33:52	819530.4	838536.1	22.31476	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:37:52	819523.7	838535	22.3147	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:40:23	819526	838534	22.31472	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:44:42	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:46:12	819526	838535	22.31472	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:49:02	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:53:02	819524.8	838536.1	22.31471	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:54:14	819524.8	838536.1	22.31471	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 07:58:14	819524.8	838535	22.31471	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:01:32	819522.6	838535	22.31469	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:05:52	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:10:02	819526	838535	22.31472	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:14:43	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:19:33	819524.8	838535	22.31471	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:25:52	819522.6	838535	22.31469	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:28:13	819526	838538.1	22.31472	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:32:34	819522.6	838535	22.31469	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:36:43	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:41:03	819524.8	838538.1	22.31471	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:45:13	819523.7	838538.1	22.3147	114.19891	0.1	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:49:43	819524.8	838536.1	22.31471	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:53:41	819523.7	838540.2	22.3147	114.19893	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:53:52	819524.8	838538.1	22.31471	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 08:59:01	819524.8	838543.3	22.31471	114.19896	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:02:23	819524.8	838542.2	22.31471	114.19895	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:05:23	819528.2	838542.2	22.31474	114.19895	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:06:53	819522.6	838540.2	22.31469	114.19893	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:10:53	819527.1	838540.2	22.31473	114.19893	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:12:24	819530.4	838544.3	22.31476	114.19897	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:17:02	819524.8	838542.2	22.31471	114.19895	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:20:11	819521.5	838538.1	22.31468	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:24:51	819528.2	838535	22.31474	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:29:23	819526	838538.1	22.31472	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:33:03	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:38:02	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:41:42	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:44:13	819529.3	838535	22.31475	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:45:23	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:49:43	819528.2	838535	22.31474	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:53:52	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 09:57:43	819528.2	838535	22.31474	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:02:23	819528.2	838535	22.31474	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:02:42	819530.4	838535	22.31476	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:07:51	819529.3	838536.1	22.31475	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:11:13	819528.2	838536.1	22.31474	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:13:42	819526	838538.1	22.31472	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:16:52	819524.8	838536.1	22.31471	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:20:33	819526	838536.1	22.31472	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:24:52	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:29:03	819527.1	838534	22.31473	114.19887	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:33:24	819526	838538.1	22.31472	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:37:44	819528.2	838538.1	22.31474	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:41:52	819526	838535	22.31472	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:44:43	819530.4	838536.1	22.31476	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:46:03	819524.8	838535	22.31471	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:50:13	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:53:53	819527.1	838536.1	22.31473	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 10:58:43	819528.2	838538.1	22.31474	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:02:02	819530.4	838531.9	22.31476	114.19885	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:05:33	819528.2	838536.1	22.31474	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:06:53	819527.1	838540.2	22.31473	114.19893	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:10:53	819529.3	838538.1	22.31475	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:15:23	819529.3	838538.1	22.31475	114.19891	0	296.4	ShipXY

### Chang Sheng 2002 (Hopper Barge)

#### Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:19:43	819530.4	838536.1	22.31476	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:21:01	819527.1	838538.1	22.31473	114.19891	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:24:13	819532.6	838535	22.31478	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:28:13	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:32:52	819523.7	838540.2	22.3147	114.19893	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:39:23	819528.2	838536.1	22.31474	114.19889	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:44:12	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:48:14	819527.1	838535	22.31473	114.19888	0	296.4	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:53:42	819513.8	838577.3	22.31461	114.19929	0.7	110.9	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:54:23	819508.2	838588.6	22.31456	114.1994	0.5	105.1	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:56:42	819462.8	838583.5	22.31415	114.19935	1	182.6	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 11:59:32	819427.4	838552.6	22.31383	114.19905	1.4	62	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:02:32	819386.4	838562.9	22.31346	114.19915	0.3	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:05:12	819382	838568	22.31342	114.1992	0.1	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:08:23	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:09:22	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:13:43	819380.9	838572.1	22.31341	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:16:34	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:20:13	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:23:53	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:25:11	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:27:53	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:31:31	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:35:13	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:37:53	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:41:01	819379.8	838568	22.3134	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:44:42	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:49:33	819382	838568	22.31342	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:53:03	819379.8	838567	22.3134	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 12:59:34	819385.3	838568	22.31345	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:02:43	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:05:54	819380.9	838567	22.31341	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:09:53	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:14:03	819379.8	838563.9	22.3134	114.19916	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:16:24	819384.2	838564.9	22.31344	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:19:43	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:23:34	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:26:33	819384.2	838568	22.31344	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:27:02	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:31:02	819384.2	838568	22.31344	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:35:22	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:36:54	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:40:23	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:44:52	819384.2	838564.9	22.31344	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:45:12	819384.2	838564.9	22.31344	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:48:23	819385.3	838567	22.31345	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:52:41	819386.4	838567	22.31346	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:54:32	819385.3	838564.9	22.31345	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 13:57:52	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:01:43	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:05:52	819385.3	838567	22.31345	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:07:43	819385.3	838567	22.31345	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:09:52	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:13:43	819378.7	838571.1	22.31339	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:17:44	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:19:52	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:23:33	819379.8	838568	22.3134	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:24:32	819379.8	838571.1	22.3134	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:27:33	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:28:32	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:32:43	819380.9	838567	22.31341	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:35:14	819382	838571.1	22.31342	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:38:33	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:41:52	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:44:53	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:45:33	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:50:22	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:53:34	819379.8	838567	22.3134	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:56:52	819382	838571.1	22.31342	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 14:59:53	819382	838568	22.31342	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:03:34	819379.8	838573.2	22.3134	114.19925	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:07:33	819382	838571.1	22.31342	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:11:53	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY

### Chang Sheng 2002 (Hopper Barge)

#### Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:13:32	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:16:23	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:20:13	819387.5	838564.9	22.31347	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:22:53	819379.8	838564.9	22.3134	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:24:22	819385.3	838564.9	22.31345	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:28:32	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:30:03	819385.3	838567	22.31345	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:33:34	819384.2	838564.9	22.31344	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:37:22	819388.6	838564.9	22.31348	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:41:22	819384.2	838571.1	22.31344	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:42:05	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:46:42	819380.9	838567	22.31341	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:49:53	819383.1	838563.9	22.31343	114.19916	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:52:33	819383.1	838564.9	22.31343	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:55:42	819385.3	838564.9	22.31345	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 15:59:42	819380.9	838567	22.31341	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:00:51	819385.3	838562.9	22.31345	114.19915	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:05:24	819382	838564.9	22.31342	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:07:33	819380.9	838567	22.31341	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:09:33	819382	838568	22.31342	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:13:33	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:19:53	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:22:54	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:26:42	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:30:53	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:35:32	819379.8	838568	22.3134	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:38:41	819382	838572.1	22.31342	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:43:52	819380.9	838568	22.31341	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:49:51	819383.1	838572.1	22.31343	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:52:33	819384.2	838568	22.31344	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 16:56:52	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:01:52	819385.3	838571.1	22.31345	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:05:42	819382	838571.1	22.31342	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:08:12	819380.9	838573.2	22.31341	114.19925	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:10:22	819383.1	838571.1	22.31343	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:14:33	819383.1	838571.1	22.31343	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:18:53	819382	838571.1	22.31342	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:23:43	819379.8	838572.1	22.3134	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:28:23	819384.2	838567	22.31344	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:33:13	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:33:51	819385.3	838571.1	22.31345	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:37:33	819383.1	838572.1	22.31343	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:41:53	819382	838568	22.31342	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:50:43	819384.2	838568	22.31344	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:54:52	819382	838563.9	22.31342	114.19916	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 17:59:02	819379.8	838573.2	22.3134	114.19925	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:03:12	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:08:11	819383.1	838572.1	22.31343	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:12:03	819382	838573.2	22.31342	114.19925	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:16:22	819379.8	838571.1	22.3134	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:20:13	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:21:22	819380.9	838572.1	22.31341	114.19924	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:24:33	819382	838568	22.31342	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:28:53	819385.3	838567	22.31345	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:32:43	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:41:33	819379.8	838571.1	22.3134	114.19923	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:46:04	819382	838567	22.31342	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:50:23	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:54:33	819383.1	838567	22.31343	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	26-JAN-2021 18:58:43	819383.1	838568	22.31343	114.1992	0	144.3	ShipXY

## Chang Sheng 2002 (Hopper Barge)

### Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:02:03	819378.7	838564.9	22.31339	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:03:13	819378.7	838563.9	22.31339	114.19916	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:07:53	819379.8	838564.9	22.3134	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:12:42	819377.6	838564.9	22.31338	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:16:52	819379.8	838567	22.3134	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:19:52	819379.8	838567	22.3134	114.19919	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:23:31	819383.1	838563.9	22.31343	114.19916	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:25:13	819382	838564.9	22.31342	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:29:42	819379.8	838564.9	22.3134	114.19917	0	144.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:35:42	819516	838583.5	22.31463	114.19935	4	21.5	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:38:42	819375.4	838859.6	22.31336	114.20203	4.8	150	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:41:33	818962.3	838715.4	22.30963	114.20063	5.6	217.5	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:44:03	818599.1	838448.6	22.30635	114.19804	5.9	212.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:47:52	818024.3	837955.1	22.30116	114.19325	6.7	228.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:50:22	817672.1	837561.5	22.29798	114.18943	6.9	232.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:53:12	817338.8	837063.8	22.29497	114.1846	6.8	232.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:56:34	817030.9	836437.3	22.29219	114.17852	6.7	246.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 07:59:43	816931.3	835799.4	22.29129	114.17233	6.7	271.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:02:53	816918	835127.5	22.29117	114.16581	6.9	270.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:05:53	817073.1	834516.5	22.29257	114.15988	6.8	289.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:08:42	817176.2	833936.3	22.2935	114.15425	6.6	276.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:11:53	817204	833271.7	22.29375	114.1478	6.7	266.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:14:53	817138.8	832683.2	22.29316	114.14209	6	260.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:17:43	817039.2	832166.9	22.29226	114.13708	5.9	249.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:20:53	816839	831635.2	22.29045	114.13192	5.7	249.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:21:14	816816.8	831578.5	22.29025	114.13137	5.6	246.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:23:41	816565.6	831211.5	22.28798	114.12781	5.8	234.6	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:26:33	816281.1	830782.7	22.28541	114.12365	5.8	230.2	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:26:52	816242.4	830733.3	22.28506	114.12317	5.8	233.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:29:53	815930.3	830274.5	22.28224	114.11872	6.1	231.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:32:52	815551.7	829866.3	22.27882	114.11476	5.6	239.2	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:35:52	815281.7	829403.4	22.27638	114.11027	5.8	237.6	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:38:43	814987.4	829009.6	22.27372	114.10645	5.6	241.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:41:53	814725.2	828494.2	22.27135	114.10145	5.9	240.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:44:24	814499.5	828097.2	22.26931	114.0976	6	242.5	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:47:54	814214.1	827515.8	22.26673	114.09196	5.8	243.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:50:53	813933.1	827036.3	22.26419	114.08731	6	242.2	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:51:23	813893.3	826958	22.26383	114.08655	5.9	241.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:53:53	813664.3	826546.6	22.26176	114.08256	5.9	240.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:56:12	813457.5	826162	22.25989	114.07883	6	242.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 08:59:52	813134.6	825565	22.25697	114.07304	6	239.5	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:01:32	812988.6	825295.9	22.25565	114.07043	5.9	242.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:05:02	812675.6	824740.1	22.25282	114.06504	5.8	240.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:10:23	812069.4	823994.3	22.24734	114.05781	5.7	231.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:15:33	811488.6	823268.1	22.24209	114.05077	5.9	235.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:16:34	811220.9	822866.9	22.23967	114.04688	6	240.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:29:42	810122	821005.1	22.22973	114.02883	6.3	228.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:41:03	808707.4	819335.5	22.21694	114.01265	6.2	227	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:46:23	808171.3	818497.6	22.21209	114.00453	6	236.2	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:50:12	807884.1	817856	22.20949	113.99831	5.9	244	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 09:55:33	807493.2	816950.2	22.20595	113.98953	6.2	254.9	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:05:12	806441.8	815644.4	22.19644	113.97688	5.9	206.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:11:33	805348.2	815271.7	22.18656	113.97328	6	192.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:17:22	804334.3	815005.3	22.1774	113.97071	5.9	196	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:23:33	803407.3	814335.7	22.16902	113.96423	6.2	212.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:29:43	802771.1	813959.4	22.16327	113.96059	2.3	185.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:35:42	802975.6	814215.5	22.16512	113.96307	4.3	26.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:41:52	803696.7	814828.1	22.17164	113.969	4.7	48.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:47:23	804281.7	815434.3	22.17693	113.97487	5	52.8	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:53:43	804808.8	816229.1	22.1817	113.98257	5	62.7	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 10:59:42	805151	817089.6	22.1848	113.99091	5	46.5	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:05:42	805826.7	817797.9	22.19091	113.99777	5.3	39	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:11:51	806711.9	818379.5	22.19891	114.0034	5.5	30.3	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:16:33	807374.7	818828.8	22.2049	114.00775	5.4	31	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:21:52	808187	819289.5	22.21224	114.01221	5.7	26.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:26:24	808876.4	819689.3	22.21847	114.01608	5.7	37.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:32:21	809751.8	820223.2	22.22638	114.02125	5.7	25	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:36:14	810388.2	820539.4	22.23213	114.02431	5.6	35.4	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:43:52	811348.6	821356.8	22.24081	114.03223	5.1	62	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:46:42	811516.7	821569.3	22.24233	114.03429	0.4	30.6	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 11:53:20	811534.4	821573.4	22.24249	114.03433	0	30.6	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:01:12	811472.4	821538.3	22.24193	114.03399	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:07:35	811470.2	821539.4	22.24191	114.034	0	0	ShipXY

## Chang Sheng 2002 (Hopper Barge)

### Historical Data Records (26-27 JAN 2021)

Vessel Name	Vessel Type	Report time	Northing	Easting	Latitude	Longitude	Knots	COG	Source
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:18:53	811493.4	821532.2	22.24212	114.03393	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:35:54	811487.9	821535.3	22.24207	114.03396	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:41:03	811481.3	821532.2	22.24201	114.03393	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:44:24	811487.9	821536.3	22.24207	114.03397	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:48:23	811503.4	821538.4	22.24221	114.03399	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 12:55:14	811526.7	821550.8	22.24242	114.03411	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:01:12	811535.5	821560	22.2425	114.0342	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:10:50	811542.1	821559	22.24256	114.03419	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:17:00	811536.6	821547.7	22.24251	114.03408	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:20:15	811527.8	821546.6	22.24243	114.03407	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:31:25	811538.8	821552.8	22.24253	114.03413	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:33:51	811538.8	821552.8	22.24253	114.03413	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:43:33	811512.3	821526	22.24229	114.03387	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:47:02	811517.8	821531.2	22.24234	114.03392	0.1	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 13:51:32	811512.3	821522.9	22.24229	114.03384	0.1	240.1	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:02:02	811515.6	821522.9	22.24232	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:17:40	811513.4	821521.9	22.2423	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:30:32	811512.3	821522.9	22.24229	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:36:14	811509	821522.9	22.24226	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:44:43	811510.1	821528.1	22.24227	114.03389	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 14:54:56	811510.1	821523.9	22.24227	114.03385	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:01:25	811510.1	821523.9	22.24227	114.03385	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:12:22	811507.9	821522.9	22.24225	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:20:42	811507.9	821521.9	22.24225	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:24:29	811511.2	821521.9	22.24228	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:29:29	811509	821522.9	22.24226	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:39:02	811511.2	821521.9	22.24228	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:42:56	811510.1	821522.9	22.24227	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 15:51:53	811511.2	821521.9	22.24228	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:02:46	811510.1	821521.9	22.24227	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:07:29	811507.9	821522.9	22.24225	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:13:23	811505.6	821521.9	22.24223	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:20:04	811510.1	821521.9	22.24227	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:21:49	811512.3	821521.9	22.24229	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:31:47	811511.2	821522.9	22.24228	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:35:33	811510.1	821521.9	22.24227	114.03383	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:49:02	811513.4	821523.9	22.2423	114.03385	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 16:57:33	811510.1	821526	22.24227	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:05:13	811517.8	821531.2	22.24234	114.03392	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:07:12	811516.7	821528.1	22.24233	114.03389	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:20:13	811513.4	821528.1	22.2423	114.03389	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:22:42	811517.8	821526	22.24234	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:32:33	811514.5	821526	22.24231	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:38:02	811513.4	821522.9	22.2423	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:46:32	811514.5	821523.9	22.24231	114.03385	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:52:12	811514.5	821526	22.24231	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 17:59:13	811510.1	821522.9	22.24227	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:03:42	811513.4	821526	22.2423	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:12:12	811511.2	821526	22.24228	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:19:25	811511.2	821522.9	22.24228	114.03384	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:23:23	811512.3	821523.9	22.24229	114.03385	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:29:07	811511.2	821526	22.24228	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:44:02	811510.1	821526	22.24227	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:44:31	811510.1	821526	22.24227	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:53:33	811510.1	821526	22.24227	114.03387	0	0	ShipXY
Chang Sheng 2002	Hopper Barge	27-JAN-2021 18:58:12	811510.1	821528.1	22.24227	114.03389	0	0	ShipXY