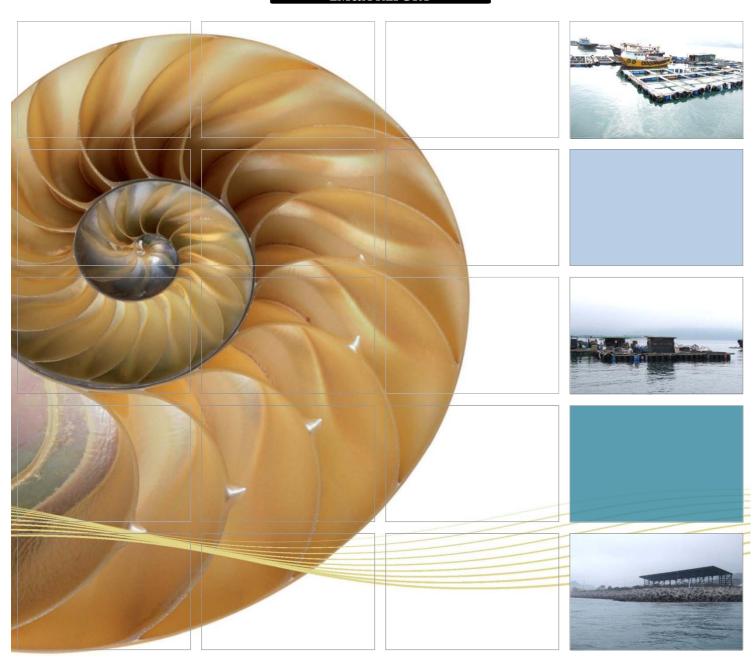
EM&A REPORT





Asia Submarine-cable Express (ASE) – Tseung Kwan O

Second Weekly Site Inspection Report

17 October 2012

Environmental Resources Management 16/F DCH Commercial Centre 25 Westlands Road Quarry Bay, Hong Kong Telephone 2271 3000 Facsimile 2723 5660

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Asia Submarine-cable Express (ASE) – Tseung Kwan O

2nd Weekly Site Inspection Report

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Environmental Resources Management

16/F DCH Commercial Centre 25 Westlands Road Quarry Bay Hong Kong

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Client:		GMS No:						
NTT Con	n Asia Ltd	0171870						
status of t	rt presents the inspection findings and the implementation the EM&A recommendations on environmental protection ion control mitigation measures and monitoring.	Date: 17 October 2012 Approved by: Terence Fong Project Director						
0	2 nd Weekly Site Inspection Report	GYANG	GYANG	TFONG	17 Oct 12			
Revision	Description	Ву	Checked	Approved	Date			
to third partie relies on the in This report had of 'ERM Hong of the Contral and taking active we disclaim a scope of the interest to third partie	confidential to the client and we accept no responsibility of whatsoever nature is to whom this report, or any part thereof, is made known. Any such party report at their own risk. as been prepared by Environmental Resources Management the trading name g-Kong, Limited', with all reasonable skill, care and diligence within the terms act with the client, incorporating our General Terms and Conditions of Business account of the resources devoted to it by agreement with the client. any responsibility to the client and others in respect of any matters outside the above. confidential to the client and we accept no responsibility of whatsoever nature is to whom this report, or any part thereof, is made known. Any such party report at their own risk.	Distribution ☑ Internal ☑ Public ☐ Confidential						





Asia Submarine-cable Express (ASE) – Tseung Kwan O Environmental Certification Sheet EP-433/2011

Reference Document/Plan

Document/Plan to be Certified/ Verified: Second Site Inspection Report

Date of Report: 17 October 2012

Date prepared by ET: ERM-Hong Kong Ltd

Date received by IEC: Ecosystem Ltd

Reference EM&A Manual/ EP Requirement

EM&A Manual Requirement:

Section 5.1

Content: Site Inspections

"...A weekly site inspection will be carried out at the proposed BMH in TKO Industrial Estate until the completion of construction works at the landing point. The areas of inspection will not be limited to the site area and should also include the environmental conditions outside the site which are likely to be affected, directly or indirectly, by the site activities..."

EP Condition:

Condition No. 2.3

Content: Buffer to Identified Coral Communities

"To protect the coral communities at Cape Collinson and Tai Long Pai, the Permit Holder shall confirm the identified coral communities will be more than 180m away from the cable alignment and in any case the IEC of the EM&A Programme shall certify in writing adequate buffer to the identified coral communities are maintained during the cable laying works. ..."

Condition No. 2.4

Content: Site Audit

"To monitor the environmental impacts and timely implementation of the recommended mitigation measures, the Permit Holder shall:

- (i) implement the EM&A programme of the Project in accordance with the procedures and requirements set out in the approved EM&A''
- (ii) submit to the Direct... (a)...; (b) weekly impact monitoring and site audit report within three days after the relevant monitoring data are collected or become available; and (c)..."



ET Certification

I hereby certify the	hat the above refere	nced document,	/ plan complies v	with the above r	eferenced co	ndition of
EP-433/2011.						

Terence Fong, Environmental

Team Leader:

Date:

17 October 2012

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-433/2011.

Dr Vincent Lai, Independent

Environmental Checker:

Date:

17 October 2012

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EXECUTIVE SUMMARY

NTT Com Asia (NTTCA) proposes to install a telecommunication cable (Asia Submarine-cable Express (ASE) cable) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia. A Project Profile (PP-452/2011) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system was prepared and submitted to the Environmental Protection Department (EPD) under section 5.(1)(b) and 5.(11) of the Environmental Impact Assessment Ordinance (EIAO) for the application for Permission to apply directly for Environmental Permit (EP). The Environmental Protection Department, subsequently issued an Environmental Permit (EP-433/2011).

This is the **Second Weekly Site Inspection Report** that presents the findings of the site inspection and other EM&A activities undertaken during the period from **8** to **14 October 2012**.

Environmental Site Inspection

A weekly joint environmental site inspection was carried out by the representatives of the Contractor and the Environmental Team (ET). Environmental performance complied with the environmental requirements and all necessary mitigation measures were properly implemented.

Marine Mammal Observation

Daily marine mammal exclusion zone monitoring was not carried out in the reporting period as the cable installation works in Zone C and from C to the boundary of HKSAR waters has not started.

Coral Monitoring

Impact monitoring for coral during cable installation is not required under the Project. When the cable installation barge passed the identified coral communities/ significant coral habitats presented in the *Baseline Coral Monitoring Survey Report*, the nearest distances between the barge and the coral habitats in Zone A and Zone B were 230m and 270m respectively, indicating the cable alignment of more than 180m away from the corals as required in the Environmental Permit (EP- 433/2011).

Summary of Breaches of Action/Limit Levels

Exceedances in the Action and Limit Levels of bottom DO were recorded in the reporting period. After a careful examination of the monitoring data, it is considered that the observed low DO levels might represent a natural fluctuation in the background levels rather than a result of the Project.

Environmental Complaints, Non-compliance & Summons

No non-compliance with PP recommendations, EP conditions and other requirements associated with the construction of the Project was recorded in the reporting period.

No environmental complaint was received in this reporting period.

No environmental summons was received in this reporting period.

Upcoming Works for the Next Reporting Period

Works to be undertaken in the coming monitoring period include cable laying works in Zone C and from C eastward to the boundary of HKSAR waters, seawall duct work, land duct laying works, beach manhole construction and backfilling and restatement.

Potential environmental impacts arising from the above construction activities are mainly associated with marine water quality, dust, construction noise and waste management.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by NTT Com Asia (NTTCA) as the Environmental Team to conduct regular site inspections and audit the implementation of all environmental monitoring and mitigation measures recommended in the Project Profile (PP) (Register No. PP - 452/2011) for the Proposed Asia Submarine-cable Express (ASE) – Tseung Kwan O (the Project).

1.1 PURPOSE OF THE REPORT

This is the **Second Weekly Site Inspection Report** (the Report), which summarises the inspection findings for the period from **8 October 2012** to **14 October 2012** and the implementation status of the EM&A recommendations on environmental protection and pollution control mitigation measures and monitoring.

1.2 STRUCTURE OF THE REPORT

The structure of the Report is as follows:

Section 1: **Introduction**

Details the scope and structure of the Report.

Section 2: **Project Information**

Summarises background and scope of the Project, site description, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring**

Summarises the monitoring programmes as recommended in the PP and the monitoring undertaken during the reporting period.

Section 4: Site Inspection Results

Summarises the findings of the weekly site inspection undertaken within the reporting period.

Section 5: Environmental Non-conformance

Summarises any exceedances of environmental performance standard, environmental complaints and environmental summons received within the reporting period.

Section 6: Upcoming Works for the next Reporting Period

Summarises the impact forecast and monitoring schedule for the next reporting week.

Section 7: Conclusions

2 PROJECT INFORMATION

2.1 BACKGROUND

NTT Com Asia (NTTCA) proposes to install a telecommunication cable (Asia Submarine-cable Express (ASE) cable) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia. NTTCA is responsible for securing the approval to land the ASE cable in Tseung Kwan O, Hong Kong SAR (HKSAR). The proposed landing site will be at a new Beach Manhole (BMH) and ultimately connect with a Data Centre in Tseung Kwan O (TKO) Industrial Estate which is scheduled for completion in 2012. From Tseung Kwan O, the cable will extend eastward approaching the Tathong Channel. Near to Cape Collinson, the cable is approximately parallel to the Tathong Channel until north of Waglan Island where the cable travels eastward to the boundary of HKSAR waters where it enters the South China Sea. The total length of cable in Hong Kong SAR waters is approximately 33.5 km. A map of the proposed cable route is presented in *Annex A*.

A Project Profile (PP-452/2011) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system was prepared and submitted to the Environmental Protection Department (EPD) under section 5.(1)(b) and 5.(11) of the Environmental Impact Assessment Ordinance (EIAO) for the application for Permission to apply directly for Environmental Permit (EP). The Environmental Protection Department, subsequently issued an Environmental Permit (EP-433/2011).

Under the requirements of Condition 2.4 of the EP, an EM&A programme as set out in the revised Environmental Monitoring and Audit Manual (EM&A Manual) is required to be implemented. The EM&A programme includes water quality monitoring, marine mammal observation, coral monitoring and weekly site inspection.

2.2 WORKS PROGRAMME AND WORKS LOCATIONS

The location of the cable installation works within the boundary of Hong Kong SAR waters is shown in *Annex A*, while the location of the landing point (ie new Beach Manhole (BMH) in TKO Industrial Estate) is shown in *Annex B*. The preliminary construction programme of the Project is given in *Figure 2.1*.

Figure 2.1 Preliminary Construction Programme

		Week										
	1	2	3	4	5	6	7	8	9	10	11	12
Submarine Cable Installation												
Zone A												
Zone B												
Zone C												
Outside Zone C to HK Boundary												
Post-installation Works												
Diver Jetting												
Landing Point Construction												
Preparation Work												
Seawall Duct Work												
Land Duct Laying												
Beach Manhole Construction												
Reinstatement												

2.3 CONSTRUCTION ACTIVITIES

Submarine Cable Installation

The submarine-cable installation works started on 8 October 2012. By the end of the reporting period (ie 14 October 2012), cable installation works in Zone A and Zone B had been large finished.

Landing Point Construction

The construction works of the landing point commenced on 4 October 2012 and are temporarily scheduled to be completed in early December of 2012. A summary of the major construction activities undertaken on the landing point during the reporting period is shown in *Table 2.1*.

Table 2.1 Summary of Landing Point Construction Activities Undertaken during the Reporting Period

Construction Activities Undertaken

- Levelling of base soil at seawall
- Excavation of base soil at sea bed
- Levelling of base soil at sea bed
- Installation of GI pipe at seawall

2.4 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in *Table 2.2*.

Table 2.2 Summary of Current Environmental Licensing, Notification and Permit Status

Permit/ Licences/	Reference	Validity Period	Remarks
Notification			
Environmental Permit	EP-433/2011	Throughout the construction and operation of the Project	Permit granted on 20 December 2011
Construction Noise Permit	GW-RE0774-12	18 Sep 2012 – 31 Jan 2013	Permits granted on using of registered powered mechanical equipment for 07:00-23:00 hrs on general holidays (including Sundays) and 19:00-23:00 hrs on any day not being a general holiday for Sub-marine cable laying works of the Project

3 ENVIRONMENTAL MONITORING

3.1 CABLE INSTALLATION WATER QUALITY MONITORING

Baseline water quality monitoring was completed by the end of September 2012. Baseline Water Quality Monitoring Reports for Zone A, Zone B and Zone C were submitted on 19 September 2012, 25 September 2012 and 1 October 2012, respectively.

Impact water quality monitoring was conducted daily from 8 Oct 2012 to 14 Oct 2012 as the cable installation works proceeded in Zone A and Zone B. Exceedances in the Action and Limit Levels of bottom DO were recorded in the reporting period. After a careful examination of the monitoring data, it is considered that the observed low DO levels might represent a natural fluctuation in the background levels rather than a result of the Project. Relevant water quality monitoring results of the reporting period and mitigation measures to control water quality pollution as recommended in the PP will be presented in the *First Weekly Water Quality Impact Monitoring Report* within three days after the relevant monitoring data are collected.

3.2 MARINE MAMMAL OBSERVATION

Daily marine mammal exclusion zone monitoring is required to be conducted during the cable installation works taking place in daylight hours along the section outside Zone A to Zone B (ie Zone C and from C to the boundary of HKSAR waters). This monitoring was not carried out in the reporting period as the cable installation works in Zone C and from C to the boundary of HKSAR waters has not started.

3.3 CORAL MONITORING

Baseline coral monitoring was completed in September 2012. The Baseline Coral Monitoring Survey Report was submitted on 28 September 2012. Post-project coral monitoring will be conducted within one month after completion of the jetting works, with the Post-project Coral Monitoring Survey Report to be submitted within one month after completion of the marine works. Impact monitoring for coral during cable installation works is not required under the Project.

When the cable installation barge passed the identified coral communities/ significant coral habitats presented in the *Baseline Coral Monitoring Survey Report*, the nearest distances between the barge and the coral habitats in Zone A and Zone B were 230m and 270m respectively, indicating the cable alignment of more than 180m away from the corals as required in the Environmental Permit (EP- 433/2011).

3.4 SITE INSPECTION AND AUDIT

In accordance with the revised EM&A Manual, a weekly site inspection should be undertaken at the landing point (ie new Beach Manhole (BMH) in TKO Industrial Estate) to ensure that the appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the Project Profile (PP-452/2011). Results of the site inspection in the reporting period are provided in *Section 4*.

4 SITE INSPECTION RESULTS

The weekly site inspection is required to be carried out by the representatives of the Contractor and the Environmental Team (ET). A Site Inspection Log is completed by the ET representative to record whether the Contractor is compliant with environmental regulations in terms of noise, water quality and housekeeping etc (*Annex C*).

During the reporting period, the site inspection was conducted on 12 October 2012 by the representatives of the Contractor and the ET. There was no non-compliance recorded during the site audit. Major findings and recommendations are summarised as follows:

- (i) A copy of EP was displayed conspicuously at the vehicular site entrance in accordance with the requirement of Condition 1.5 of the EP.
- (ii) A silt curtain was employed around the seawall area in order to reduce the dispersion of sediments from the landing site (*Annex D Photo No. 1*).
- (iii) During the site inspection, rubbish bins could not be found within the construction site. The Contractor was reminded to provide rubbish bins on site and to educate the workers to dispose rubbish properly. Follow-up actions were conducted in the next day by the Contractor and a rubbish bin was placed on site (*Annex D Photo No. 2*).
- (iv) Tarpaulin sheets, which should be used to cover unpaved slopes and dusty stockpiles to prevent dust generation or erosion, were observed to be missing on the construction site (*Annex D Photo No. 3*). The Contractor was recommended to cover the stockpiles properly to prevent excessive dust generation. Corrective action was conducted by the Contractor in the following day (*Annex D Photo No. 4*).
- (v) The Contractor was nevertheless advised to spray water to all exposed earth surfaces within the construction site regularly for the purpose of dust suppression.

5 ENVIRONMENTAL NON-CONFORMANCE

5.1 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance of PP/ EM&A/ EP/ legislative requirements was recorded during the reporting period.

5.2 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting period.

5.3 SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION

No summons was received during the reporting period.

6 FUTURE KEY ISSUES

6.1 KEY ISSUES FOR THE NEXT REPORTING PERIOD

Works to be taken for the next reporting period are summarised in *Table 6.1*.

Table 6.1 Construction Works to Be Taken For the Next Reporting Week

Work to be taken

Submarine Cable Installation

- Cable laying works in Zone C and from C eastward to the boundary of HKSAR waters *Landing Point Construction*
- Seawall duct work
- Land duct laying works
- Beach manhole construction
- Backfilling and reinstatement

Potential environmental impacts arising from the above construction activities are mainly associated with marine water quality, dust, construction noise and waste management.

6.2 MONITORING SCHEDULE FOR THE NEXT REPORTING PERIOD

Daily impact water quality monitoring will be continued in next week until the completion of the cable installation works in Zone C. The results will be summarised in the *Second Weekly Water Quality Impact Monitoring Report* after the relevant monitoring data become available.

Next weekly site inspection is temporarily scheduled on 19 October 2012.

7 CONCLUSIONS

This **Second Weekly Site Inspection Report** presents the findings of the site inspection and other EM&A activities undertaken during the period from **8** to **14 October 2012**, in accordance with the PP (Register No. PP – 452/2011), revised EM&A Manual and the requirements of Environmental Permit (EP-433/2011).

Submarine-cable installation works/ jetting works were conducted in Zone A and Zone B during the reporting period. Impact water quality monitoring was hence carried out daily from 8 Oct 2012 to 14 Oct 2012 as the cable installation works proceeded. Exceedances in the Action and Limit Levels of bottom DO were recorded, but it is considered that the observed low DO levels might represent a natural fluctuation in the background levels rather than a result of the Project.

When the cable installation barge passed the identified coral communities/ significant coral habitats presented in the *Baseline Coral Monitoring Survey Report*, the nearest distances between the barge and the coral habitats in Zone A and Zone B were 230m and 270m respectively, indicating the cable alignment of more than 180m away from the corals as required in the Environmental Permit (EP- 433/2011).

A weekly joint environmental site inspection was conducted on 12 October 2012 during the reporting period. It confirmed that the environmental mitigation measures recommended in the PP were properly implemented by the Contractor.

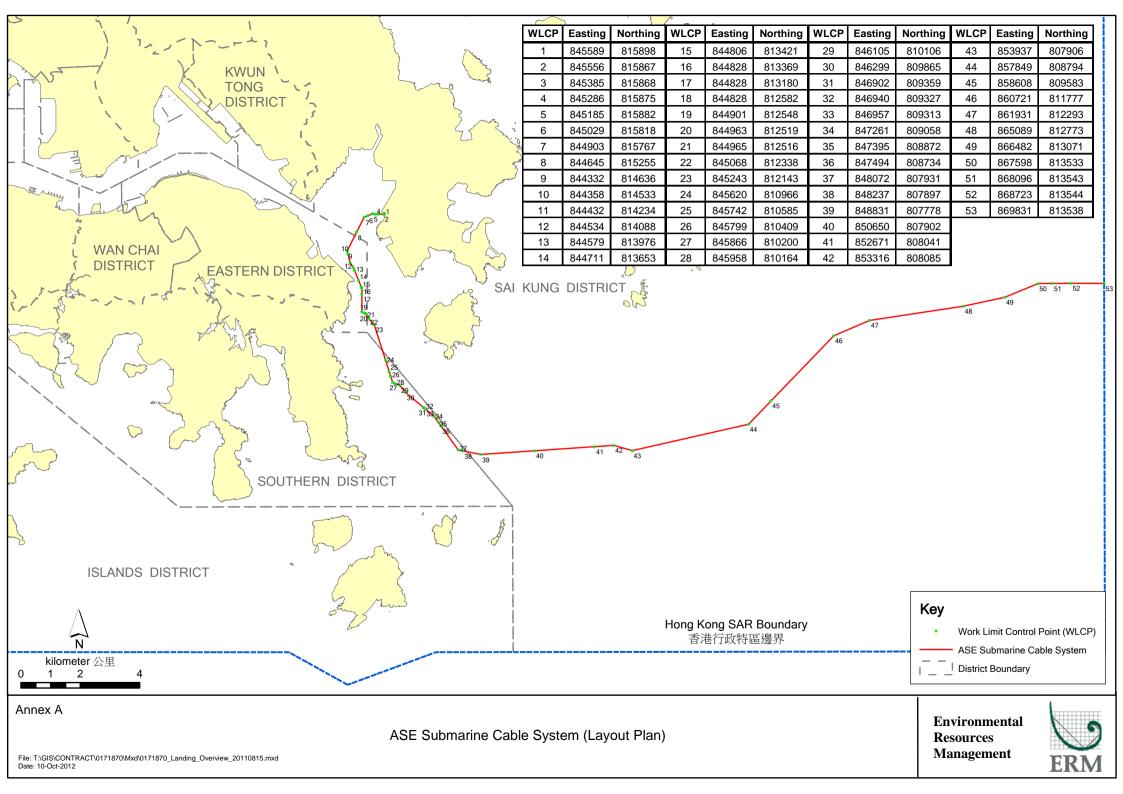
No non-compliance event was recorded during the reporting period.

No complaint and summons/prosecution was received during 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.

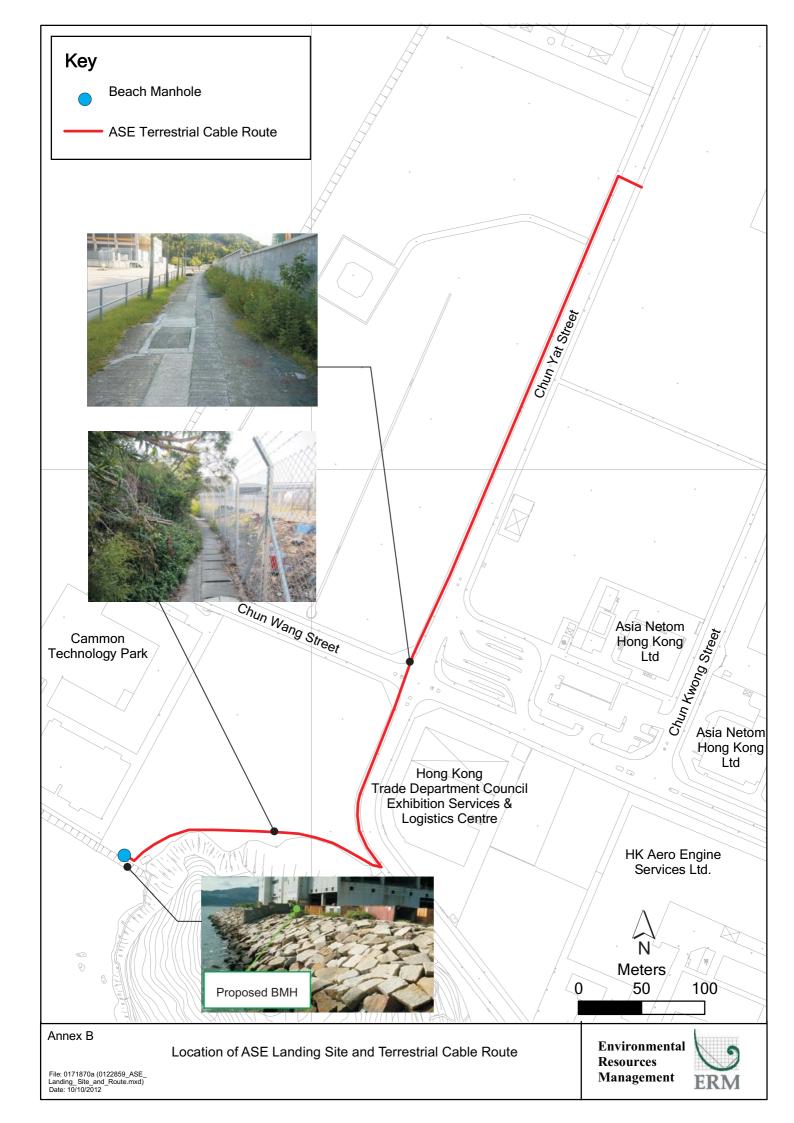
Annex A

Proposed ASE Submarine Cable System (Layout Plan)



Annex B

Location of ASE Landing Point and Terrestrial Cable Route



Annex C

Completed Site Inspection Log

Site: ASE-Tseung Inspected By: Grank YANG									
Insp	ection Date: $\frac{ 2/10/12 }{ bioo-1/20 }$ Time: $\frac{ bioo-1/20 }{ bioo-1/20 }$								
We	ather								
Con	dition Sunny Fine Overcast Drizzle Rain Storm Hazy								
Tem	perature 2/ °C Humidity High Moderate VLow								
Win	d Calm Light Breeze Strong								
Α	Noise N/A or Yes No Photo/Remarks not observed								
A 1	Are all plant and equipment well maintained and in good operating condition?								
A2	Is idle equipment turned off or throttled down?								
A3	3 Are powered mechanical equipment covered or shielded by acoustic materials?								
Α4	Are silenced equipment used where practicable?								
A5	Do mobile plants be sited as far away from NSRs as possible?								
A 6	Do plants known to emit noise strongly in one direction be oriented away from nearby NSRs?								
Α7	Major noise source(s) Traffic Construction activities inside of site								
8A	Construction activities outside of site Others Any remedial action undertaken?								

Site Inspection Log

В	Water Quality	N/A or not observed	Yes	No	Photo/Remarks
B1	Is drainage system adequate?	abla			
	Are there temporary ditches for runoff discharge into appropriate			1	
B2	Watercourse?	abla			
ВЗ	With silt retention pond?	abla			
В4	Do permanent drainage channels have: sediment basin?	$\overline{\mathcal{A}}$			Silt Curtain
B5	traps and baffles?	$\overline{\mathbf{A}}$			available in front
B 6	Are there sediment tanks for settling runoff prior to disposal?	\checkmark			of the Searball
В7	Are there oil interceptors in drainage system?	V			opening point.
В8	Oil and grease removed regularly?	\Box			<u> </u>
B9	Bypass to prevent flushing during periods of heavy rain?			\Box /	
B10	Is drainage system well maintained?	\square			
B11	Is exposed earth stabilized after earthworks have been completed?	$\mathbf{\Sigma}$			Not completed yet
B12	Are exposed slope surfaces covered (by tarpaulin or other means)?	∇			
B13	Are open stockpiles of more than 20 m ³ covered during rainstorm?			V	See Note 1
B14	Are manholes covered and sealed?	∇			
	Rainy Season				
B15	Drainage system adequately designed for storm flow?			\square	instruction carried out
B16	Sediment control measures inspected and maintained after rain storms?	V			in the dry season
B17	Is debris and rubbish on site collected and disposed of properly?			ΓŽ	See Note 2
B18	Is wastewater discharge license available for inspection?				
B19	Measures to prevent the washing away of sand/silt to drains?		V		
B20	Is there any sediment plume observed existing the marine works area?			abla	

C	Environmental Complaint	.1		Ω		
C1	Number of Environmental Complaint Received from 2001 to 10	1-001,20	12	鱼		
D	General / Housekeeping	N/A or not observed	Yes	No	Photo/Remarks	
D1	Are potential stagnant pools cleared and mosquito breeding prevented?				No Stagnaut On Site	pools
	Items for Inspection					
	- Sawall opening point				† 	
	- Land duit alignment					
	- Construction material storas	e are	١.			
				•		
	<u> </u>					

Notes / Issues Recorded On Site

- 1. Open Starkpiles/excavated boulders and rocks were found without covers. The Contractor was reminded stockpiles of dusty materials on site should be covered with tarpaullin or similar fabric to prevent excessive dust generation
- 2. No rubbish bin was observed to be available on site. The Contractor was reminded to provide rubbish bin on site and educate the workers to dispose rubbish property.

Corrective Actions

182. Corrective actions were conducted by the Contractor in the next day. Covering sheet was provided to open dusty stockpiles.
Rubbish bin was placed within construction site.

Signatures:

Page 4 of 4

Annex D

Photographic Records on Site



Photo 1 - A silt curtain was employed around the seawall area.



Photo 3 - Tarpaulin sheets to cover dusty stockpiles to prevent dust generation were absent from the construction site.



Photo 2 - A rubbish bin was placed on site in the next day of site inspection.



Photo 4 – The corrective action to cover dusty materials was conducted by the Contractor in the following day of site inspection.

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Environmental Resources Management

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